

Torm, Nina

**Working Paper**

## Training returns among informal workers: Evidence from urban sites in Kenya and Tanzania

SECO Working Paper, No. 2023: 1

**Provided in Cooperation with:**

Socio-Economic Research Centre (SECO), Department of Social Sciences and Business, Roskilde University

*Suggested Citation:* Torm, Nina (2023) : Training returns among informal workers: Evidence from urban sites in Kenya and Tanzania, SECO Working Paper, No. 2023: 1, ISBN 978-87-7349-048-8, Roskilde University, Department of Social Sciences and Business, Socio-Economic Research Centre (SECO), Roskilde

This Version is available at:

<https://hdl.handle.net/10419/298515>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

SECO WORKING PAPER: 1

# **Training returns among informal workers:**

## **Evidence from urban sites in Kenya and Tanzania**

**Nina Torm**

## SECO WORKING PAPER 2023: 1

SECO  Socio-Economic Research Centre

Department of Social Sciences and Business, Roskilde University

Universitetsvej 1, 4000 Roskilde, Denmark

<https://ruc.dk/en/seco-working-paper-series>

Email: [lbuur@ruc.dk](mailto:lbuur@ruc.dk)

CAE/SECO working papers ISSN: 2446-337X

ISBN: 978-87-7349-048-8

SECO working papers can be downloaded free of charge from

<https://ruc.dk/en/seco-working-paper-series>

© The authors and SECO, Roskilde 2023.

The SECO working paper series publishes cutting-edge research on contemporary political and socio-economic dynamics in advanced, emerging and developing countries. The Working Papers present on-going research from the projects of both SECO's own researchers and scholars outside Roskilde University. We encourage submissions from scholars studying political and socio-economic processes from different social-science and economic schools of thought. We accept papers that draw on approaches from economic sociology, economic geography, economic anthropology and political economy, as well as ones that employ multi- and inter-disciplinary perspectives.

The CAE Working Papers has from November 1, 2021 been transformed into SECO Working Papers in order to better capture the research on contemporary political and socio-economic dynamics in advanced, emerging and developing countries.

## ABSTRACT

Human capital development, including both education and post-school training, has been a central part of the development strategies of most countries, because it contributes to economic growth, both through raising productivity and facilitating the use of new technologies. In addition, training is often categorised as a type of transformative social protection allowing workers to raise earnings through widening their skills base. This study uses mixed methods to examine the returns to (formal and informal) training, for informal workers operating in the sectors of construction, micro-trade and transport in urban areas of Kenya and Tanzania. The quantitative analysis finds that workers, who have undertaken formal training, have earnings that are between 16-21% higher than workers with no training, and that receiving on-the-job training or being trained by a family member, does not provide as substantial a return as formal training does. Moreover, training gains differ by gender, location, sector and worker-type, pointing to the need to better tailor training initiatives to the needs of specific workers. In support, evidence from interviews also illuminates the role of informal worker associations in terms of offering and/or providing access to training, in addition, to other social protection measures. By focussing on informal workers, the study contributes to the existing literature, which mostly looks at training returns among formal workers. However, given that in low- and middle-income countries workers often make a living in the informal sector, it is imperative to understand how training may benefit and protect this segment of the workforce. In terms of policy relevance, the results show the importance of strengthening formal training institutions to further decent work, also in informal settings. In helping to bridge the skills divide, training plays an important part towards formalising labour markets by enabling more qualified informal workers to find productive formal employment.

## AUTHOR

Nina Torm (ninatorm@ruc.dk) is based at the Department of Social Sciences and Business, Roskilde University, Roskilde, Denmark. <https://orcid.org/0000-0002-4319-4381>

## ACKNOWLEDGEMENTS

This study is based on data collected as part of a large collaborative project titled Informal Worker Associations and Social Protection (SPIWORK) funded by the Ministry of Foreign Affairs in Denmark. The project was a collaborative effort between Roskilde University Denmark, Nairobi University in Kenya, and Mzumbe University in Dar. Gratitude is expressed to the whole SPIWORK team and to those who kindly took time to share their experiences and knowledge. The data used in the paper is available on the project website: <https://forskning.ruc.dk/da/projects/informal-worker-organisation-and-social-protection>. The usual caveats apply.

## WORKING PAPERS IN THE SECO SERIES 2022:

Cille Melin Gundertofte, Gustav Eik Thur, Nina Torm, "Social Protection and Resilience during COVID-19: An Interdisciplinary Analysis of the Role of Informal Worker Associations in Kenya", SECO Working Paper 2022: 6.

Jacob Ulrich, Malin J. Nystrand, Lars Buur, "Just give all the money to the poor?", SECO Working Paper 2022: 5.

Miguel Niño-Zarazúa, Nina Torm, "Active Labour Market Policies in Asia and the Pacific: A review of the literature", SECO Working Paper 2022: 4.

Vestergaard, Jakob, "How can central banks help mitigate climate change? A money view perspective on central banking", SECO Working Paper 2022: 3.

José Jaime Macuane, Lars Buur, Padil Salimo, "Institutional reform and pockets of effectiveness in the Mozambique gas sector", SECO Working Paper 2022: 2.

Jeff Althouse, Bruno Carballa Smichowski, Louison Cahen-Fourot, Cédric Durand, Steven Knauss, "Ecologically unequal exchange and uneven development patterns along global value chains", SECO Working Paper 2022: 1.

## WORKING PAPERS IN THE CAE SERIES 2020-2021:

Wuttke, Tobias, "The automotive industry in developing countries and its contribution to economic development", CAE Working Paper 2021: 2.

Riisgaard, Lone, "Organizing the informal economy as part of the trade union movement in Kenya and Tanzania", CAE Working Paper 2021:1.

Saulich, Christina, "Accessing Global Value Chains: The Politics of Promoting Export-Driven Industrialisation and Upgrading in the Mozambican Cashew Processing Industry".CAE Working Paper 2020: 5.

Riisgaard, Lone, "Worker Organisation and Social Protection amongst Informal Petty Traders in Tanzania", CAE Working Paper 2020: 4.

Torm, Nina, "Social protection and the role of informal worker associations: A cross-sector analysis of urban sites in Kenya and Tanzania", CAE Working Paper 2020: 3.

Azizi, Sameer, "Kenyan-owned firms in the floriculture global value chain: A multi-level analysis of the historical development of local firms", CAE Working Paper 2020: 2.

Jensen, Federico, "Constraints on eco-industrial development in the context of global production net-works - the case of Ethiopian eco-industrial parks", CAE Working Paper 2020: 1.

### **Working papers in the CAE series 2019-2017:**

Whitfield, Lindsay, and Cornelia Staritz, “Les entreprises africaines dans les chaînes de valeur mondiales du vêtement: stratégies de valorisation, réseaux diasporiques et marchés de niche à Madagascar”, CAE Working Paper 2019: 3.

Itaman, Richard, and Christina Wolf, “Industrial Policy and Monopoly Capitalism in Nigeria: Lessons from the Dangote Business Conglomerate”, CAE Working Paper 2019: 2.

Azizi, Sameer Ahmad, "The Kenyan floriculture export industry: Assessing local firms' capabilities in the floriculture global value chain," CAE Working Paper 2019: 1.

Whitfield, Lindsay, and Cornelia Staritz, "Local Firms in Madagascar's Apparel Export Sector: Technological Capabilities and Participation in Global Value Chains," CAE Working Paper 2018: 3.

Staritz, Cornelia, and Lindsay Whitfield, "Local Firms in the Ethiopian Apparel Export Sector: Building Technological Capabilities to Enter Global Value Chains," CAE Working Paper 2018: 2.

Melese, Ayelech Tiruwhat, "Sales Channels, Governance, and Upgrading in Floriculture's Global Value Chains: Implication for Ethiopian-owned Floriculture Firms," CAE Working Paper 2018: 1.

Mulangu, Francis, "Mapping the Technological Capabilities and Competitiveness of Kenyan-Owned Floriculture Firms," CAE Working Paper 2017: 5.

Whitfield, Lindsay, and Cornelia Staritz, "Mapping the Technological Capabilities of Ethiopian owned Firms in the Apparel Global Value Chain," CAE Working Paper 2017: 4.

Staritz, Cornelia, and Lindsay Whitfield, "Made in Ethiopia: The Emergence and Evolution of the Ethiopian Apparel Export Sector," CAE Working Paper 2017: 3.

Melese, Ayelech Tiruwha, "Ethiopian-owned Firms in the Floriculture Global Value Chain: With What Capabilities?" CAE Working Paper 2017: 2.

Staritz, Cornelia, and Lindsay Whitfield, with Ayelech Tiruwha Melese and Francis Mulangu, "What Is Required for African-owned Firms to Enter New Exports Sectors? Conceptualizing Technological Capabilities within Global Value Chains," CAE Working Paper 2017: 1.

# Training returns among informal workers: Evidence from urban sites in Kenya and Tanzania

Nina Torm

## 1. Introduction

Human capital development, including both education and post-school training, has been a central part of the development strategies of most countries contributing to economic growth through raising productivity and facilitating the use of new technologies. Moreover, post-school or vocational training - henceforth referred to simply as formal training - is often categorised as a type of promotive social protection, allowing workers to raise their earnings through extending their skill base, leaving them better equipped, not least in the face of uncertain situations as illustrated most recently during COVID-19.<sup>1</sup> Especially in countries where the educational system is sub-optimal, there is an increased efficacy of alternative ways of upgrading worker skills outside the range of general academic education. However, in many countries the national training systems have traditionally been little concerned with the informal sector and existing literature focuses almost exclusively on training returns among formal workers, mostly in high-income countries. In recent years some low- and middle-income countries (LMIC), including Kenya and Tanzania, have made efforts to boost training options for the informal sector. This is an important endeavour given (East) Africa's enormous youth unemployment challenge which, as in other LMIC, causes many young workers to make a living in the informal sector. It is, thus, imperative to understand how different types of training may benefit and protect this dominant segment of the workforce, which is particularly vulnerable in a crisis.

Among studies capturing the dimensions of insecure and informal casual work many look exclusively at formal training outcomes yet given the amount of informal learning that takes place, not least in informal work contexts, it is important to also consider training that goes beyond the formal. Existing studies on the training returns in LMIC reveal mixed evidence and show, that, if benefits are not realised immediately, workers may be hesitant about undertaking training. Thus, exploring whether training is associated with higher individual earnings becomes a worthwhile endeavour to potentially encourage informal workers to enrol in training programmes (whether formal or non-formal). Assuming that higher earnings reflect enhanced productivity, at least to some extent, a favourable case for training would also provide support for the enhancement of training opportunities or subsidised workplace trainings, which are important in ensuring a smooth school-to-work transition (SWT) not least in contexts of high unemployment.

---

<sup>1</sup> Devereux and Sabates-Wheeler (2004) distinguish between social protection classified as protective, preventive, promotive, and transformative measures. Preventive measures encompass not only formal social insurance programmes such as pensions, health insurance, or maternity leave but also informal insurance and cushioning mechanisms. Promotive measures include, for example, access to micro-finance and vocational training, while transformative measures are included primarily in the form of representation and voice.

This paper uses quantitative and qualitative methods to examine the earnings return to formal, non-formal and informal training for workers operating in the sectors of construction, micro-trade and transport, in urban areas of Kenya and Tanzania. Formal training is categorised as that undertaken at a professional school, institution or association; non-formal training is defined as on-the-job training in current or previous job and informal training is received by a family member. The analysis shows that workers who have undertaken formal training have earnings that are around 21% higher than workers with no training. Moreover, receiving non-formal or informal training are both associated with an earnings premium of around 16% as compared with no training. The survey data further reveals variation by location, sector and worker-type, in terms of the gains associated with the different training types, and this is also supported by key informant interviews (KII) and focus group discussions (FGD) with different association members. These conversations also point to the role played by informal worker associations when it comes to providing or facilitating training, as well as the necessity to tailor training initiatives to the needs of specific workers. The rest of the paper is structured as follows. Section two positions the paper within the existing literature. This is followed by section three describing the data and methodology and section four subsequently presents the results. Section five discusses the findings and finally, section six concludes.

## **2. Literature**

Compared to high-income countries, empirical evidence on the earnings return to training in LMIC is limited, mainly due to a lack of comprehensive and comparable data.<sup>2</sup> Moreover, in many countries training provision is sub-optimal. In the case of on-the-job training, reasons for underinvestment include credit market imperfections, high worker turnover and time- and resource-costs for the employer, as well as a low expected return on the investment in training, especially among micro, small, and medium enterprises (MSMEs), which account for a large share of employment in LMICs, (Almeida and Aterido, 2015; Bassanini et al., 2007). From the workers' perspective, time, cost or imperfect knowledge regarding the return to different skills, may prevent them from investing in skills (Jensen, 2010) and, even if the fees are paid by the employer, participating in training courses takes time away from the job, and workers may not reap the benefits immediately. Such reluctance to invest in training—both from the employer and the worker side—is revealed in empirical studies (including this paper). Nevertheless, some studies show that, workplace training results in workers receiving higher wages (for East Asian cases see Almeida and de Faria, 2014; Bjerger et al., 2021; Hansen et al. 2022) whilst other studies, also from East Asia, find a limited impact (Ng, 2005; Xiao, 2002; Yamauchi et al., 2009). Some distinguish by gender, e.g., Almeida and de Faria (2014) use a matched employer-employee dataset and propensity score matching, and find significant wage returns to on-the-job training for male workers in Malaysia and a lower wage return to training for women in Thailand. By contrast, Ng (2005) finds that female workers in manufacturing firms in Shanghai experience (a small) earnings' return from off-the-job

---

<sup>2</sup> Hansen et al. (2022) list studies from high-income countries.



training. Evidence from Sub-Saharan Africa (SSA), based on rigorous econometric analysis, is generally favourable towards training. For instance, in the case of workplace training among formal enterprises in Kenya and Zambia, Rosholm et al. (2007) find a positive average wage effect especially for longer training spells and larger firms. Looking at the effects of vocational and general education and job training on earnings also among formal firms, Kahyarara and Teal (2008) reach a similar conclusion in the case of Tanzania, where they find that firm size is clearly of importance, as training returns are higher in larger firms. However, even among small firms there are substantial returns to current training and attending a short training course. Moreover, they find that high levels of academic education give far higher returns than vocational or lower levels of schooling. However, in the latter case, the vocational return may exceed the academic. Using matched employer–employee data from Ghana, Görg et al. (2007) show that workers with on-the-job training have higher earnings (mainly in firms with a high degree of foreign ownership). Comparing the effectiveness of (subsidised) vocational and on-the-job training in an experiment for unemployed youth in Uganda, Alfonsi et al. (2020) find that the former group sees steadily increasing earnings, whilst the latter group do well initially, but then over time, their earnings fall behind those of formally trained workers due to the enhanced skills transfer associated with this kind of (formal) training.<sup>3</sup>

Thus, unlike high-income countries, where most studies show that training results in workers receiving higher wages, studies from LMICs show more mixed outcomes. In addition to methodological and sample differences, this could indicate that factors like the underlying labour market structures, the system of qualifications, or workplace relations, also play a role. In terms of labour market structures, many LMIC are characterised by a large informal economy (and a much smaller formal sector) and a substantial occupational mismatch. In contexts where the informal economy provides a key livelihood source, informal training may play a particularly important role, although concrete evidence of this remains scarce. Exceptions include Blaak et al. (2013), who highlight the importance of informal training for students and workers in Uganda showing that it can improve their capability and make them self-reliant without discontinuing their primary source of livelihood – unlike formal training which requires time away from work. Likewise, in the case of India, Singh (2001) highlights that much of the training for informal economy workers happens through on-the-job training or by being an apprentice or helper to the skilled workers. The author suggests that reasons include a lack of formal training options or higher time and monetary cost of the latter for informal workers, meaning that hereditary or self-learning and on-the-job training is preferred, as there is no loss of earnings, when the training takes place through these channels. As for the system of qualifications, this also varies: in some countries like India (and Kenya and Tanzania), formal training remains largely complementary to general education, rather than

---

<sup>3</sup> The literature evaluating various types of randomised (RCTs) labour market interventions is extensive and mainly focused on evaluations of labour market policies in the form of vocational training, wage subsidies, and job search assistance. The main conclusion from a couple of recent meta-analyses is that there is a relatively weak impact of such programs on employment and wages in LMIC (Card et al., 2018; McKenzie, 2017; Nino-Zaracua and Torm, 2022), while targeted training increases the job search success (Abebe et al., 2021).

a substitute, since it provides an option for students who have completed secondary schooling. In other cases, like Myanmar and Vietnam formal (vocational) training contributes to filling the skills gap caused by a sub-optimal education system.

Finally, the variation in findings may also be a reflection of the limitations of the human capital approach, which, due to its competitive labour market assumption and inherent focus on the supply side, is largely unable to account for the different processes, institutions and relationships in the workplace (O’Connell and Byrne, 2012). In response, there are calls to also look at the demand side of the labour market in the analysis of workplace training (Hamermesh, 2008).<sup>4</sup> These calls advocate taking into account how workplace organisation may influence the quantity and quality of worker training (Felstead et al., 2010). Such factors are important in a LMIC context, not least in the informal sector.

This paper responds to such calls by providing insights into informal workplace dynamics, including the role of worker associations when it comes to facilitating or providing training. Moreover, whilst many studies, also from SSA, look at SMEs, this paper focusses solely on informal workers across different sectors and locations. Finally, this paper disaggregates training into five categories compared to most papers which are restricted to one or two, often aggregated, types of training. Given the presumed importance of informal learning at work, using highly aggregated descriptions of ‘training’, misses important differences in the determinants and outcomes associated with different types of training (Blundell et al., 1996). A recent exception is Bahl et al. (2021), who separate training into three components and show that in India workers with formal training earn higher wages than workers with no or informal training and that there is no difference in earnings between workers with informal training and none. In their case, informal training is availed through hereditary vocations, on-the-job-training or through unpaid jobs (helpers) in the informal economy, so the authors do not separate the effects of these components, although there might be a substantial difference between family training, being self-taught and on-the-job learning.

In accounting for such differentiation, this paper contributes to the limited literature on training among informal workers by adding another level of disaggregation distinguishing between formal, non-formal and informal training. More specifically and for the purpose of this paper, *formal training* is defined as whether the worker has attended a professional training school, a training course by an association or an institution or a formal apprenticeship; *non-formal training* is defined as on-the-job training either in the current or in another job and finally *informal training* refers to the workers having learnt from a family member, which is separate from being self-taught. Aside from the empirical weight of informal training, the theoretical reasoning behind including this dimension is that leaving informal training out of the wage equation (see section 4) may lead empirical assessments to bias the return to formal training upward (Nordman and Hayward, 2006). For instance, assuming that high-wage workers have higher abilities than low-wage workers to learn by themselves, or to watch other workers perform their tasks and to

---

<sup>4</sup> Using longitudinal employee data from China, Xiao (2002) points out that on-the-job training serves to both upgrade job skills of employees and develop shared values and ways of working together to strengthen a firm’s unique competitiveness in transforming economies like China (and Vietnam), pointing to the potential importance of demand side factors.

imitate them, neglecting informal training is likely to yield an upward-biased estimate of the return to formal and non-formal training for better educated workers (OECD, 2019). Before un-covering such relations in the case of Kenya and Tanzania, the next section presents the data and method used in the analysis.

### **3. Data and methodology**

The article is based on survey and interview data with informal workers carried out during 2018-2019 in Kenya and Tanzania, as part of a larger collaborative project (Riisgaard et al., 2021). The data was collected for workers engaged in construction, micro-trade, and transport – sectors that are highly prone to informality and have a high concentration of workers in urban areas. The sample of construction workers include both skilled and unskilled workers, employed directly by construction or site managers or indirectly, via an intermediary working on large and medium construction sites, waiting sites e.g. streets, buildings, but excluding individual residential housing sites. A mix of different types of construction workers are represented including masons, welders, carpenters, steel fixers and electricians. Transport workers consists of boda-boda (motorcycle riders) and Daladala/Matatu (mini buses) drivers and conductors. Traders include those operating on the street, in bus terminals, vacant lots etc., as well as less mobile ones like mama-lishe, however those with permanent structures such as kiosks or regular designated markets are excluded.

The data was sampled from two urban centres in each country: Nairobi and Kisumu (Kenya), and Dar es Salaam and Dodoma (Tanzania). Comparing a larger urban area (main city) with a smaller city in each country, allows for observing differences which relate to the degree of urbanisation. In each location three zones were identified through transport hubs, which were used to sample workers across the three sectors. The survey covered wagedworkers, own-account workers, and micro-businesses with a maximum of two employees. Whilst 75% of workers were sampled randomly, 25% of workers were sampled through associations identified purposively for the project, to ensure a broad representation of different types of associations. The total sample (random and purpose-based) consisted of 1,462 workers, which after data cleaning led to a final sample of 1,385 observations (644 in Kenya and 741 in Tanzania).<sup>5</sup>

#### **3.1 Summary statistics**

Table 1 provides the summary statistics for the full set of 1,385 workers and is split by country to reveal any difference between Kenya and Tanzania along the various dimensions. Starting with earnings, the table shows that the average is just under 11 USD per day, and slightly higher in Kenya, with much larger variation in Tanzania. As for training, our main variable of interest, 25% of workers have undergone a

---

<sup>5</sup> The appendix provides further detail on the sampling strategy.

formal course, and this is slightly higher in Kenya at 29%. Within the formal training measure, the vast majority (19%) have gone to a professional training school, again more so in Kenya, whereas in Tanzania there is a slightly higher share of workers than have undertaken a formal apprenticeship (though only 4%) and only around 3% of workers have trained at an institution or an association. Nonformal training which comprises on-the-job training, in the current or previous job, accounts for 22% and more than double in Kenya (31%) compared with Tanzania (15%). Third and in reverse of the latter, the incidence of informal training by a family member is more than three times higher in Tanzania (22%) compared to Kenya (7%) and 15% overall, and the share of workers that are self-taught is also substantially higher at 42% compared with 30% (37% overall) in Kenya. Thus, informal workers in Kenya receive more formal training, whereas in Tanzania the training is of a more informal nature.

As for the areas of training (not reported), these obviously vary by sector, but are similar across countries. Transport sector training subjects include motor vehicle driving, motorcycle riding, motor vehicle mechanics, road safety training, customer care training for passengers. For construction subjects they include building and construction, masonry, steel works, electrical installation, roofing, carpentry, welding, interior and exterior housing finishing and for traders they include tailoring, soap making, cookery, sales and marketing and entrepreneurship training.

In Table 1 the gender variable reveals that most workers sampled are male (77%) and around 60% are association members, ranging from more established SACCOs (Savings and Credit Cooperative Societies) to smaller welfare type associations. The average age of workers is 35 years, and 66% are married, though this is higher in Kenya (where workers are also slightly older). In terms of assets, 35% own land or the property where they live, and the incidence is substantially higher in Tanzania at 43% compared with 27% in Kenya. This is in accordance with the sample containing a higher share of domestic migrants in Kenya, as only 26% report to live where they were born (local) compared to 46% in Tanzania. Given that the informal sector has no educational entry requirements (ILO, 2017), it is not surprising that only 11% of workers have a post-secondary degree, slightly higher in Kenya at 14% compared to 8% in Tanzania.<sup>6</sup> As for worker types, the vast majority are own-account workers at 52%, followed by wagedworkers at 37% and lastly micro-firms at 11%, yet there is substantial variation by country with Kenya having a much higher share of wagedworkers and Tanzania a higher share of own-account workers and micro-firm owners. In terms of sectors, the shares are even (by sampling design) although with a slight overrepresentation of traders and some variation by country. Across countries the workers are split relatively even across the four cities, though with a higher share in Nairobi and Dodoma. When asked about why they chose their specific occupation around 30% of workers say for the money, whilst 22% say that the job fits with their education, training or passion, though this is almost three times higher in Tanzania compared to Kenya. Short term job stability seems quite high, as 80% of workers indicate having a high chance of holding their job next month. In terms of how they got their job, 12% say that the owner is a relative or friend (strong tie) and 35% say that they got the job because they have

---

<sup>6</sup> Regarding other education levels, 10% are below the primary level, whilst 52% have completed primary education and 37% have completed secondary school (including the 11% that have a post-secondary diploma).

a relative/friend/acquaintance working in the firm (weak tie). These variables are all included in the analysis to account for the potential selection of workers into their occupation for reasons related to the outcome variable (earnings) or the main variable of interest (training), to minimise the endogeneity bias when examining the association between training and earnings.

#### 4. Analysis

To examine the training related earnings premium, I follow a standard Mincer earnings function (Mincer, 1974) where individual wages depend on various worker attributes education, in line with the literature. Building on the basic model of (Abowd and Kramarz, 1999), the specification takes the following form:

$$\ln w_i = \alpha + \beta Tf_i + \gamma Tn_i + \delta Ti_i + \varphi Xi + \varepsilon_i \quad (1)$$

Where the dependent variable  $\ln w_i$  is the log of real monthly mean earnings (in USD) of worker  $i$ . The main variables of interest are i) formal training ( $\beta Tf_i$ ) ii) nonformal training ( $\gamma Tn_i$ ) and informal training ( $\delta Ti_i$ ). In the analysis, we also consider different types of formal training.  $\varphi Xi$  is a vector of worker  $i$ 's characteristics and  $\varepsilon_i$  is an error term. In terms of worker characteristics these include gender, marital status, worker age (including squared), education, assets, association membership, motivation and route to current job, sector, worker-type and location, as described in the summary statistics. Experience, proxied by worker age, has been found to influence the effects of training on earnings (Yamauchi et al., 2009), and the education variable is an indicator variable for post-secondary education since this accounts for a large share of the variation in earnings (Mincer, 1974; Spence, 1973). Moreover, it seems very likely that the relatively able (more educated individuals) will be chosen and will benefit relatively more from training, so any increment from earnings from such training will confound the training with the ability. Positive returns to training may also be related to higher motivation or stronger loyalty on behalf of workers after having undergone training (De Grip and Sauermann, 2013), thus by controlling for whether training (or earnings) is a motivating factor when choosing the specific job, the analysis factors in both individual abilities and incentives, which could influence earnings. Additional underlying factors that may impact both training and earnings are uncovered from the interviews, as discussed in section five.

Table 2 presents the ordinary least squared (OLS) results of equation (1) when the different training variables are added consecutively, starting with formal training, followed by nonformal training and finally informal training. The raw correlation between formal training and earnings (not reported), shows that trained workers have earnings that are 34% higher than workers without formal training. This estimate is in line with the study from India (Bahl et al., 2021) and is naturally *upward biased* due to the omission of unobserved ability (Nordman and Hayward, 2006). This bias is revealed with the inclusion of various worker characteristics (accounting for a share of worker ability) in column 1 causing, as expected, the formal training variable to reduce in both significance and size, yet the coefficient estimate

remains stable at 11% when the various selection (control) variables are added in column 2. In column 3, the only addition is non-formal training which has a positive return *and* increases the significance and size estimate of formal training. This is logical, given that the former has been removed from the reference category, and so formal training compared with none, and informal training has a relatively higher return. When informal training by a family member is added in column 4, the significance of *formal training* increases to the 1% level, which again arises from the change in reference group, since workers logically reap relatively higher benefits from formal training vis-à-vis being self-taught (column 4), whilst when non-formal and informal training are also included in the reference category – the formal training gap is smaller since the latter training types account for some of the returns (columns 2 and 3).

<sup>7</sup>

In summary, all three types of training are significant compared to self-training, and the earnings returns to formal training are 21% higher than a worker who is self-taught, and around 16% for non-formal and informal training.<sup>8</sup> The results are in line with Rosholm et al. (2007), who find non-formal training returns of around 20% in formal enterprises in Kenya and Zambia, and Alfonsi et al. (2020), who find formal training returns at 22% in Uganda. The earnings estimate is higher compared with studies looking at non-formal training among East Asian SMEs (Hansen et al. 2022; Bjerger et al. 2021), where firm-level factors are also accounted for, suggesting that the latter may account for some of the observed return.<sup>9</sup> Column 5 shows the results when the main variable formal training is broken into its three sub-components: i) professional training school, ii) training course by an institution or an association and iii) a formal apprenticeship. The results show that it is professional training schools, which constitute the largest formal category with just under 20% (Table 1), that are driving the results for formal training. The analysis points to the importance of distinguishing between different types of training to gain further insight, as also discussed in Fialho et al. (2019). Thus, in the remaining part of the analysis we follow the specification in column 5, yet first a quick summary of the control variables (which are all as expected) is provided. We find a substantial gender earnings gap at 34-36% yet a direct comparison with the literature is not possible since not many studies look at the gender wage gap among informal workers only. However, evidence from a recent OECD/ILO (2019) report shows that women in informal employment generally face a double penalty: on average, informal wage workers are paid lower wages than formal workers, and women are paid lower wages than men, so gender wage gaps are also likely to be larger in the informal than in the formal economy.<sup>10</sup>

---

<sup>7</sup> This is also evident when the order in which the training variables are added is altered to start with informal training, which is insignificant until both the formal and non-formal training variables are added (removed from the reference category). In other words, informal training only provides higher earnings when compared to being self-taught.

<sup>8</sup> When the non-formal training variable is split into on-the-job training, in current job, and another (previous) job, it is revealed that it is the latter that is significant, which also relates to a higher share of workers reporting having trained in another job at 14.4% versus 7.6%. This contrasts with Kahyarara and Teal (2008), who find no positive return for past training in neither small nor large firms, possibly due to their inclusion of firm fixed effects.

<sup>9</sup> In the current case, where the focus is on own-account, micro-firms and waged workers in small firms, the absence of firm fixed effects likely does not make much difference.

<sup>10</sup> Interestingly when splitting the sample along the gender dimension it is revealed that formal training returns are substantially higher for women than for men, in fact almost double for professional training schools at 33% versus 18% and 71% versus

Being an association member ensures earnings that are around 11% higher, and as expected earnings rise with age – as a proxy for experience or tenure, yet, after a certain point, earnings start to diminish as indicated by the negative sign on the age squared variable. Having a post-secondary education is associated with earnings that are 26-27% higher, *ceteris paribus*, revealing the importance of higher education also for informal workers.<sup>11</sup> When formal training is not included the earnings return to post-secondary education is slightly higher at 31%, since some of the premium is explained by training, however, the education return remains unaltered when the additional training variables are added indicating that non-formal and informal training returns exist independently of the education premium (and vice versa) pointing to complementarity between high levels of formal education and training, as also touched upon in the subsequent section.<sup>12</sup>

When splitting the sample into different educational levels consisting of workers with (i) incomplete primary, (ii) complete primary, (iii) incomplete secondary and (iv) complete secondary, it is further revealed that formal training brings the highest returns to group (i), whilst non-formal and informal training bring the highest return to (iii). Thus, for workers with very low levels of education formal training appears to compensate or substitute, at least in terms of earnings, whilst for the more educated workers non-formal and informal training comes with a gain (formal training less so). This is in line with Hansen et al. (2022) who find that in Myanmar wage returns to training depend on the worker's level of education, implying that it may help to fill the gap by a sub-optimal education system.<sup>13</sup>

Being married seems to have no implication for earnings, when all other factors are accounted for, yet workers with assets earn around 11% more than workers with no property. Interestingly, workers that work in the same city as they were born have earnings that are around 11% lower, suggesting that, for the (majority of) workers who have moved location for work, this has been worthwhile. Micro-firm owners have earnings that are on average 21% higher than own-account workers, whereas waged workers have wages that are, on average, 40% lower than own-account workers. This varies substantially by country, as we shall see later on. Compared with traders, workers in construction and transport have earnings that are around 40% and 30% higher respectively, and Tanzanian workers earn significantly below their Kenyan counterparts (in Nairobi and Kisumu), both those based in Dar and Dodoma. Finally,

---

9% for institutional training (yet both less significant as the number of female observations is only 314) so access to formal training could help close the gender wage gap as also shown in other studies (Bjerger et al. 2021; Hansen et al. 2022). Nonformal training returns are also higher for women at 23% (though still insignificant due to the relatively low number of observations) compared to 16% for men, whilst training by family members gives the same return to women and men. Across both countries, men have a higher education level and are more likely to attend training courses, whilst women are generally self-taught, so this could explain why the women who do attend training have earnings returns that are substantially above those who do not.

<sup>11</sup> When variables for primary education (complete or not) are included, these demonstrate a negative return pointing to the absence of benefits associated with low levels of education.

<sup>12</sup> This is similar to Bahl et al. (2021) in India and Bjerger et al. (2021) in Vietnam, but in contrast to Hansen et al. (2022) who find that in Myanmar training may help fill the gap by a sub-optimal education system. Xiao (2002), distinguishing the impact of education and on-the job training on employee salary in the case of China, shows that on-the-job training is positively associated with salary increases through improved technical proficiency, whereas formal education is not.

<sup>13</sup> Another way of analysing this would be to use interaction terms between training types and educational levels, but given the amount of possible combinations this would substantiate an entire study in itself.

workers who have chosen their occupation primarily for the money have an earnings premium of around 14%, and, similarly, for those that have found their job through a close contact (strong tie) in line with other studies (Folke-Larsen et al. 2011).

Table 3 presents the training results when the sample is split by country, revealing significant differences along a number of dimensions. First, all training forms in Tanzania (except formal apprenticeship which account for less than 3% overall) are associated with significant earnings returns, especially formal training. For workers trained by an institution or an association, earnings are as much as 87% higher than those who are self-taught. By contrast, Kenyan workers that were trained by an institution or association do not have any earnings gain; only workers who attended professional training schools realise 14% higher earnings, whilst in Tanzania the equivalent wage-gain is 24%. As for post-secondary schooling, this is strongly important in both countries, though the return is substantially higher in Tanzania at 34%, in line with Kahyarara and Teal (2008), compared with 22% in Kenya.

The gender gap is almost twice as high in Tanzania compared with Kenya. Moreover, in both countries construction and transport workers earn significantly more than traders, the former as much as 54% in Tanzania and 38% in Kenya. The only other variable, that is similar across countries, is the highly negative wage return associated with being a waged worker as compared to an own-account worker, especially in Kenya at 48% lower wages. By contrast, micro-firm owners in Kenya earn 43% more than own-account workers. In Kenya, being an association member is also conducive to higher earnings, as is having assets and the reasons for choosing the job being based on money or relevant training are both highly significant, the latter referring to professional training schools specifically since that is the only significant training variable. Remarkably, both strong and weak connections matter for earnings returns among Kenyan workers, whilst in Tanzania they have a negative (although insignificant) association, as does working in the location of origin. In Tanzania, experience, proxied by age is positively correlated with earnings as in the overall sample, whilst in Kenya age does not seem to be important unlike most of the literature on earnings returns. In sum, whether formal, non-formal or informal, training seems to contribute much more towards earnings in Tanzania compared with Kenya, where training returns are less significant. There is of course variation between sectors and the difference could also be related to Tanzania having several national policies linked to the informal sector<sup>14</sup> and, as discussed later, female traders specifically. For instance, direct interventions made by the Tanzanian government in the informal sector include formalisation of training, information provision, and the allocation, construction, and management of workspace; simplification of policies; and enforcement of regulations (URT 2007; 2012). In Kenya, factors like association membership, contacts and job motivation appear to be more important determinants than training when it comes to earnings. However, we also know that association members are more likely to have attended a professional training course (Torm, 2021), so the linkage is there at least indirectly.

---

<sup>14</sup> For instance, the Small and Medium Enterprise Development Policy (2003) establishes and strengthens institutions supportive of SME development and, recognising that most SMEs fall under the informal sector, is committed to improving the informal sector by focusing on the creation of an enabling business environment, by developing infrastructure, and by strengthening financial and non-financial services.



Table 4 presents the results split by sectors showing that the formal training forms are especially rewarding in construction and (somewhat) among micro traders, whilst among transport workers only nonformal training is significant – which is not surprising as drivers and conductors often learn from watching and imitating other drivers. In Tanzania informants during boda-boda FGDs often testified that they acquired their driving knowledge and skills by riding someone’s motorcycle in parking lots.<sup>15</sup> Also, there are some barriers to formal training as revealed in the subsequent section. In construction, such on-the-job learning is also relevant, as is training from an institution or an association. Traders vary more in the products they sell and, thus, it makes sense that they have more to gain from attending professional courses on how to develop entrepreneurial skills, rather than following other traders. This kind of training may also explain why traders that have micro-firms, although a minority, earn more than own-account workers. Moreover, for traders, the traditional individual characteristics explain earnings outcomes and interestingly post-secondary education seems only to boost the earnings of traders, whilst for transport workers, apart from non-formal training, no other dimensions have a partial “effect” (beyond workers choosing a job for the money). For construction workers, the vast majority, of whom are men, assets and connections also matter for their earnings returns. Across all sectors workers in Nairobi earn more than in other locations and wagedworkers earn substantially less than own-account workers as seen throughout. This begs the related question as to the extent to which different worker types may benefit from training to which we turn in Table 5.

Column 1 shows that, for wagedworkers, training, whether formal, nonformal or informal, is associated with substantial earnings gain ranging from a premium of 26-36%, whilst, for own-account workers (column 2), only formal training is significant, and since own-account workers account for most micro traders, the explanation is in line with these workers benefitting from entrepreneurship type courses perhaps tailored to their specific trade. Wagedworkers account for the majority of construction workers, who, as seen earlier, benefit from formal training programmes (in both countries), while for the wagedworker segment among transport workers nonformal training is rewarding.<sup>16</sup> Thus, across sectors wagedworkers may be able to realise significant gains from different types of training, including informal coaching by a family member – which is the only training form that microfirm workers appear to gain from, the worker type mostly found among micro traders (although the majority of the latter are own-account workers). This makes sense if microfirms consist mostly of family members, who train each other, perhaps with the owner having taken a formal training course. In sum, for all worker types, training has the potential to boost their earnings, and this seems to be especially the case among wagedworkers who also have the lowest income, on average. Moreover, Table 5 shows that wagedworkers, who have a written-down contract, have earnings that are around 11% higher than those workers with no contract. All other control variables are as expected. In the following section we draw on interviews carried out across the three sectors and discuss the findings in more detail.

---

<sup>15</sup> Moreover, training on the job is more prominent in Dar es Salaam when compared to Dodoma because Dar es Salaam has a vast number of mainly boda-boda groups, where one can start learning on the job as ‘DAIWEKA’ (read: day-worker).

<sup>16</sup> The gains for wagedworkers are in line with other studies (Hansen et al.,2022), indicating that workplace training could play a role in increasing enterprise productivity.

## 5. Discussion

The discussion adds further insight across sectors, including differences between the three training types and their outcomes, and the role of associations in the provision and facilitation of training. The section is organised by sector (and within sector by country), starting with traders, followed by transport and finally construction.

### 5.1 Micro-traders

In the case of Tanzania, the Government has introduced several national policies linked to the informal sector and (female) traders specifically.<sup>17</sup> These policies, which fall under the Sustainable Industries Development Policy (1996–2020), acknowledge that informal activities supplement many citizens' earnings and enshrine a commitment to introducing measures that will improve entrepreneurship skills among traders through vocational training and facilitating access to profitable markets (Pallangyo, 2021).<sup>18</sup> The purpose here is not to assess the effectiveness of such policies, although Table 4 revealed that traders do gain from attending professional courses. In most cases, where associations facilitated access to external services, such as business training, they were linked to umbrella structures like VIBINDO (formed of smaller associations) or TUICO (trade union), and entrepreneurship training covered topics like prices, markets, and raw materials, and skills related to business management, how to handle a loan or practical skills such as how to produce various items for sale:

*...for example tomorrow, on 29th there's a seminar. We will do it as Uwamata and will give trainings to entrepreneurs for those who will be willing. We will train on how to make handbags, peanuts and soaps making. (KII, Dar-es-Salaam, 2019).*

Facilitated through TUICO some traders even went to Europe to receive training:

*Yes, we thank them [TUICO] because we are 65 members when two go and receive training, and they will come back to educate us also, one member goes to Europe to receive some trainings and was sent by TUICO. She attended different seminars and participated in different things, when she came back she trained us, so these seminars are really helpful even though we don't attend all of us but those few who receive trainings are helping us (FGD, Dar-es-Salaam, 2019).*

---

<sup>17</sup> In the sample, most traders are women, although the gender share of the overall sample is 77% men and 23% women (Table 1).

<sup>18</sup> For instance, in 2009, the United Nations Industrial Development Organization (UNIDO) ran an integrated training programme for women entrepreneurs in the food processing industry that promoted entrepreneurship development through the improvement of existing micro enterprises.

This shows how workers, who undergo training, pass on their skills by re-training co-workers and such knowledge sharing was also confirmed by the Chairperson of TUICO, who stated that during their once-a-year general meeting:

*The most important event is sharing the knowledge and experiences that some of our selected members acquired in various entrepreneurial seminars and trainings (Dar-es-Salaam, 2019).*

The Chairperson also confirmed that several traders, who had moved from the smaller informal (Mchikichini market) to the larger, more established markets shops (in Kariakoo/ Mbagala), registered and got the licenses by themselves<sup>19</sup>, adding that:

*But I am sure it was through the education and trainings they received from seminars about registering businesses and credit and loan seminars that they received when they were here [TUICO Mchikichini branch] (Dar-es-Salaam, 2019).*

From the worker perspective, when asked what they would like their associations to help them with, some members stated that they would like their associations to help them access technical training on how to make good quality batik<sup>20</sup>:

*We want to make something very good if we receive trainings and, if possible, they create market for us that we can go and learn from different people, maybe I learn from my fellows in China because the females there are doing very well, they create good things but ours are low in quality (FGD, Dar-es-Salaam, 2019).*

Another request related to training on how to produce their own packaging materials. As stated by a businesswoman and TUICO member from Manzese market, who sells food spices:

*We have been receiving trainings and our business is doing well, but our biggest problem is packaging, we have been asking for packaging every now and then, but we never got assisted so this is the thing that put us down, our business is doing well, but the final look of our products is something that really cost us (FGD, Dar-es-Salaam, 2019).*

Currently, workers get packaging materials produced by the Small Industries Development Organisation (SIDO), but never received any training. SIDO was established to provide entrepreneurship skills under

---

<sup>19</sup> In 2018, the Government made identity cards available to micro-traders ('machinga').

<sup>20</sup> Batik is a process of using melted wax for making designs on fabric. The wax may be painted on a white or coloured fabric, using a brush, or it may be stamped onto the fabric, using a copper stamp dipped in melted wax. The fabric is then dyed, and the areas that have been waxed will not be penetrable by the dye. The workers pointed out that materials to make batik are very expensive and most of them come from China, so some suggested that different associations should join forces to have enough funds to import the materials and then divide them among individual associations.

the Women Entrepreneurship Development Programme, to mainstream gender issues into small and medium enterprises policy, strategies, plans, and projects (Mori, 2014).<sup>21</sup> However, according to the workers interviewed, the programme was terminated for unknown reasons, yet it seems that re-establishing this kind of training programme would be beneficial to many traders. Another trader, who sells masks in a handcraft village market, has a plea similar to the Batik sellers:

*Education on how to make quality products, price and how to get the markets because in our business many customers are foreigners from outside, so if it's possible TUICO to get market for us (FGD, Dar-es-Salaam, 2019).*

Other association members talked about the importance of receiving both practical and theoretical training, combined with appropriate capital input, to succeed as a business:

*I have been doing different kind of business, but outcome is like that (negative), about training even me, I have been training, for instance, I attended poultry keeping training program, but when I came to practice I failed, in our groups at the moment I think if we would get support in terms of land in order to do farming and livestock keeping would be better, because of market situation now, at the moment livestock keeping and farming is 100% sure. (FGD, Dar-es-Salaam, 2019).*

Thus, traders in Tanzania, generally, perceive the potential benefits associated with relevant business training, and often succeed in realising these gains through producing and selling higher quality products, at better prices and, in turn, increased earnings. The evidence also demonstrates the importance of associations in providing and facilitating vocational training.

This is echoed in Kenya, where workers emphasise the importance of financial training. For instance, one group of workers noted that they have received training from formal banks such, as KCB (Kenya Commercial Bank Limited), when they requested a loan:

*As a group, we have a teacher at KCB bank to train us, including investment seminars and they give us new products. We learn about different products, we got different banks to interact with. We carry new ideas with us (FGD, Kisumu, 2018).*

Another worker noted they received a loan from the Kenya Women's Finance Trust (KWFT) and that:

*KWFT trained us on finance management when we applied a loan to them (FGD, Kisumu, 2018).*

In some associations (Olang Ndiga Self Help Group), members contribute to attend workshops or training on topics such as business management, leadership, lobbying and advocacy, and technology application

---

<sup>21</sup> SIDO was established in October 1973 as a parastatal organisation, under the Ministry of Trade, Industry and Investment.

in business. Among workers, who have not accessed any training, some stated:

*We do not get any training. I am just lamenting, and some of us are neglected. We only hear about them on advertisement. What we see is training by micro finance banks, because of the money they want to give us* (FGD, Kisumu, 2018).

Similar to Tanzania, umbrella associations in Kenya play an important role in facilitating training. The Kenya National Alliance of Street Vendors and Informal Traders (KENASVIT), which is an umbrella body representing street vendors and informal traders in Kenya, has demonstrated success in organising and empowering street vendors and informal traders in order to improve their business through training, access to credit, dialogue with local authorities, and other relevant organisations (Mitullah, 2010). In fact, the Chairman of KENASVIT explained, that both members and non-members have been trained on negotiation and advocacy. In his words:

*We do not just invite our members for training. We also invite non-members to come for these trainings. Areas of training include: rights of elderly, health insurance, women rights, labour rights, gender mainstreaming, children, and book-keeping among others* (KII, Kisumu 2018)

Thus, training may cover a range of different topics, many of which are not directly relevant to running a business, but indirectly so, since businesses are often home-based, leading to an overlap between the workers' private and professional sphere.

The chairman further explained, that KENASVIT has many collaborating partners funding the training activities including DFID, Oxfam, Unitarian Universalist Service Committee (UUSC), IDS, StreetNet International, Women in Informal Employment Globalizing and Organizing (WIEGO), Kenya Land Alliance, Micro and Small Enterprise Authority (MSEA) etc. KENASVIT also trains other large trade associations which then retrain their members. For instance, according to the NISCOF Chairman, they have been trained by KENASVIT and, in turn, trained their members on NHIF, business management, record keeping and family relationships. Moreover, in his words:

*KENASVIT has been training members on advocacy, e.g. on how to engage with city authorities. It came up with the idea of revolving funds, although there are few groups continuing with it. The idea was not very effective because some individuals failed to pay back the monies that they received* (NISCOF Chairman, Nairobi, 2019).

This illustrates some of the potential training opportunities provided by associations, and the challenges with group-based initiatives in general (see also Riisgaard et al., 2021).

## 5.2 Transport

In contrast to traders, among transport workers, only non-formal training is significantly related to earnings (Table 4) and on-the-job training is common among boda-boda workers in Tanzania. A key reason for this is the cost of formal training. The Vocational Education Training (VETA) and the National Institute of Transportation (NIT) are the main transportation training institutions in Tanzania and tuition fees for a two-week driving course is relatively high, at TZS 405,000 (USD 177) per participant. However, even if the fees were lower, many informal transportation workers do not have adequate basic education to follow classroom-based theory, as noted by one boda-boda association member:

*You know it's difficult for us sometimes to go to such schools, because we are not educated, and then they start teaching you things that are not easy to understand, why don't they only teach us how to drive? Alright, they teach a little bit of driving towards the end, thus we pick up the real knowledge of riding from our colleagues. (FGD, Dar-es-Salaam, 2020)*

Moreover, to attend training, workers must take time off from work, leading to concerns about job security post-training. In Tanzania, these issues were mentioned by the Chairman of a driver association, who explained that, back in 2015, the Tanzanian government decided that all drivers should get back to school and so, this specific association instructed their members to attend the training.<sup>22</sup> The response from the workers was:

*We are unemployed, the driving course fee is 200,000 [TZS] (approximately USD 86), how can I afford such a training cost? Our jobs are undefined, since we don't have contracts. You have instructed us to attend a training, how will I secure my job during the period of training? After training, will I be back to my former job? And will I be given a new contract? (FGD, Dar-es-Salaam, 2020).*

Based on such concerns, and in response to the government decision, several transportation sector leaders wrote a letter to the Ministry<sup>23</sup>, enquiring about job contracts, post-training job security, lack of salaries and the requirement to attend driving training. The Minister's response was that this issue would be communicated to other ministries to find a joint solution, yet it is unclear whether this ever happened.

---

<sup>22</sup> In fact, to access training and loans, transport workers in Dar-es-Salaam are required to form associations, and these are also encouraged to facilitate taxation and self-regulation of the industry including identification of individual workers. Workers in Dodoma prefer SACCOs and Vicobas, as they avail funds for school fees and enable access to capital for business and daily assistance to meet consumption.

<sup>23</sup> The Ministry of Works, Transport and Communications is a government ministry of Tanzania.

The chairman of another boda-boda transport association also explained that they would like the government to recognise their small informal groups as formal groups, and subsequently to provide training so that they receive certificates.<sup>24</sup> In his words:

*If you want to do anything you must have a certificate (KII, Dar-es-Salaam, 2019).*

The importance of receiving a training certificate was also noted by a police constable in Dodoma, who commented that, given the dearth of employment for the youth, quite a few workers have motorcycles, that their parents have bought them upon finishing secondary school to use for business purposes, while waiting to go for further studies. Most of them end up making boda-boda driving their full-time jobs, as one secondary school graduate confirmed:

*I have been here for about 3 years...when I graduated, I anticipated getting an office job, that dream had long vanished; boda-boda is my bread and butter. (FGD, Dar-es-Salaam, 2020).*

In Kenya, there is also evidence of a lack of formal training, and any support for workers training and credit provision is left to the SACCOs. For instance, during an FGD with a mix of 11 matatu operators and 3 boda-boda riders in Kisumu, the participants were asked about (the benefits of) training and unanimously observed that they neither received any training, nor education, since more attention is paid to member contribution:

*Education has not been evident in Kisumu so long as they comply with the requirements of collection (FGD, Kisumu, 2018).*

When workers were further asked what they felt their SACCOs should be doing, some participants pointed out that, although they are securing insurance covers, dealing with traffic police, loaning and securing public sector vehicle (PSV) badges, they have failed to provide training for operators and to tame the growing number of drivers, who are not registered with the SACCOs, again pointing to the grey zone these workers operate in.<sup>25</sup> In some of the more established associations training is considered important and they collaborate with training schools and various financial institutions e.g. City Corporation, Equity Bank and Unaitas Sacco Society Limited, providing loans for the motorcycle drivers to buy bikes, as their strategy is to make riders owners of the bikes and not just employees, as expressed by the Chairman of a boda-boda SACCO:

*The need for ownership is because they want all their riders to own the bikes they ride, so that they are independent. We want the members to be fully qualified riders by undergoing training and getting*

---

<sup>24</sup> Comparing two supply-side interventions in Addis Ababa, Ethiopia, Abebe et al. (2021) found that the effect of subsidies—in their case to fund transport—is short-lived, while certification has lasting impacts.

<sup>25</sup> See Riisgaard et al. (2021) and Torm (2023) for further detail on the specific case of transport SACCOs in Kenya.

*insurance. The members are being trained at Ksh.5000 [approximately USD 39]. When they pay Ksh.1000 they start training and pay the rest in instalments as they train. Training is done in collaboration with the Motor Rider School in Nairobi. This partnership is good because we offer them training room and our members, on the other hand, get training. (KII, Kisumu, 2018).*

The example referred to above seems popular, as during fieldwork in December 2018, the SPIWORK research team found a roomful of riders undergoing training. This may be related to the fact that, in this particular driving school, the training for boda-boda drivers is not as costly, both compared to the earlier examples from Tanzania and to other Kenyan examples. For instance, the transport union TAWU offers 3-day training workshops for KSHS 25,000 [USD 200] yet explains that many members do not attend the trainings they deserve, although it is unclear whether this is only a cost issue. The chairman of another large boda-boda association and officials of a larger transport company, both explained that they collaborate with the National Industrial Training Authority (NITA), so that their members receive relevant training e.g. on financial literacy and management. To join NITA a membership fee of KES 5,000 and annual subscription fee of KES 6,000 is required, again indicating that training can be a costly endeavour for workers. In some cases, the training may be sponsored, for instance as explained by the Chairman of a matatu (mini-bus) association when asked whether they had offered training to the members:

*In 2018 TOTAL Kenya sponsored the members to attend seminars on public relations and road courtesy. We have a contract with TOTAL. Our members enjoy a discount for fuel. We are also working with ICEA to provide insurance services. When we get a sponsor, we are able to offer some training. Matatu workers are also very busy and have less time to dedicate to training (KII, Nairobi 2019).*

This also points to the fact, that even when training is offered free of charge, workers may not have the time to undertake training. Overall, this section, has revealed some of the challenges in providing formal training among informal transport workers, including the challenge that workers must be formal to attend certain courses, without which they cannot get a certificate and so a vicious circle emerges. Even if the workers are able to attend training courses, they will be reluctant to do so due to the cost and time requirement and the job insecurity it causes post-training. Thus, for these reasons, the non-existence of an earnings premium, associated with formal training, is not surprising and it is understandable that many transport workers rely on non-formal training enabling them to stay in their job, with the potential of receiving higher earnings (as compared to workers who receive no training).

### **5.3 Construction**

Compared to both the trade and transport sectors, training among construction workers (wage-workers, in particular) is associated with more significant and relatively high earning returns, especially for formal training, but also for non-formal training, at around 40% for the former and 25% for the latter as seen in



Table 4. In Kenya, the qualitative evidence suggests that this could be related to the certification papers that workers receive from training, facilitated by, for instance the national construction authority (NCA) which works closely with contractors<sup>26</sup>:

*We see NCA as being very close to us every time, even recently they had a seminar, yesterday I sent my team, young men because I did go there myself. They have taken some young men, that there are training there, and they educate them. NCA is very instrumental in training and they regulate the sector and give accreditation card that identify someone as a mason. They also train on issues of safety, ways of doing work, and a lot of other things. The polytechnics also send their student to NCA, particularly those who are studying construction. It teaches young people a lot of things. Most contractors are registered with NCA to allow them to operate and to work at different sites. I am registered with NCA and government. I am registered as a contractor, and one cannot place a board at a site without being registered (KII, Kisumu, 2018).*

This points out to the important role of the NCA in training construction workers, not least by providing accreditation cards, presumably putting certified workers at an advantage, compared to workers without accreditation, due to the so-called “signalling effect”. Moreover, the above shows the importance of contractors being registered with the NCA operating formally, although workers are generally hired on an informal basis.

Some associations also mention the accessibility and importance of the training provided by the NCA:

*Sometimes we get invited for training by NCA, safety and inspection unit, and some manufacturers of cement (Bamburi) and paint (Crown)<sup>27</sup>. These trainings are accessible for free. Today a training is going on at a Kisumu Hotel by NCA. The NCA provides certification for different categories in construction sector (e.g. skilled workers, contractors and site supervisors). Certification is accessible to all those who are registered. If you are skilled and you have not certificate you can get recommendation from company or contractor. (Migosi Builders Association Chairman, 2018, Kisumu).*

In cases where training is provided free of charge (supported by private companies), workers would be less reluctant to participate, compared to, for instance, transport workers, where training mostly comes at a fee. It seems, however, that not all associations get invited for or facilitate training for their members. For instance, the leader of a large association explains that they do not assist members with vocational

---

<sup>26</sup> Discussions revealed that electrical installation and, to some extent plumbing, are done in formal training institutions, while the other trades, like building and construction, masonry and carpentry are largely learnt on-the-job and through apprenticeships.

<sup>27</sup> Bamburi and Crown are companies dealing with building and construction products. There is also evidence of a Qatar-based company funding training for members of the Kaberia Jua Kali Association.

training. However, he himself has enrolled for training on building and construction financed by the KCB Foundation<sup>28</sup>:

*I saw an advert on KCB website on self-employment programme. I applied and I was shortlisted. It is a part-time training. I go there from 8 am to 12 noon. I was a loader before I became a painter. Now I am training on building and construction. We have advanced. We are not just painting, but undertaking professional painting (KII, Kisumu, 2018).*

He also noted that because of being a painter, he was called to several trainings by paint manufacturers. Likewise, another association leader states that:

*The association does not sensitise the workers. They learn in the job about these things. However, members attend seminars organised by Crown and Dura Coat companies (KII, 2019, Nairobi).*

Thus, whether facilitated via a contractor, an association or a company, training (non-formal and formal) among construction workers is quite common and well-organised, allowing for individual financial gains. Moreover, training often comes as an addition to post-secondary education with construction workers often being well-educated, compared to workers in other sectors, despite beliefs to the contrary:

*“...usually, this is the first job that any student from the University of Nairobi will venture into before getting a job. We get many people from the university. They are not in the sector, but that is the first job they secure. For myself, I have an upper hand which has to do with the training that I received as a plumber. Within the construction sector, many people have been said to be less educated and this is not the case (Chama Cha Mafundi Organiser, 2019, Nairobi).*

The value of non-formal training was further emphasised by the Chairman of another association<sup>29</sup>, who explained that initially members do not understand the procedures, and many have started as helpers, but they learn by doing (*watu wa mikono*) and their teachers also learn by doing. Interestingly, he also expressed ambiguity about diploma and certificate attainment stating that:

*People are trained to become ‘bosses’, but not to become workers. Funditech is encouraging members to have hands-on skills, but not to become bosses. There is a lot of amorphousness in the diploma and*

---

<sup>28</sup> The KCB Foundation was established in 2007 to implement the Bank Group's Corporate Social Responsibility programmes and as a sign of commitment to sustainable development to alleviate poverty and enhance well-being. KCB Bank is a financial services institution in Kenya offering products and services to the commercial sector.

<sup>29</sup> This co-operative brings together professional fundis (handymen) and technicians in the building and construction industry in Kenya. The cooperative acts as the quality workmanship assurance component between professionals, clients, contractors and stakeholders like policy makers and regulators, manufacturers, real estate, developers, financial institutions, technical training institutions.

*certificate attainment. Funditech has its own module on how to balance quality and workmanship (FundiTech Chairman, Nairobi, 2018).*

The chairman also mentioned that since there is a lack of curriculum on how to become a fundi (handyman), Funditech is looking into how it can develop a standard module on becoming a fundi (artisan) without having to attend class. They are working with the Technical and Vocational Education and Training Authority (TVETA) to have in place an exit formula for fundis.

As in Kenya, non-formal training is common among construction worker associations in Tanzania and many join the sector as helpers becoming experts with time. Some associations also encourage formal training as indicated by the leader of a carpentry association when asked about the support provided for its members in relation to vocational training:

*Yes when it comes to capacity building we assist each other by providing on job training to our members. I for one have assisted six youth. I trained them how to build and now they are working on their own, further to that my advice to them was that in order to enhance their capacity they should register with VETA for further training. We usually tell the wage workers to pursue further training because currently everything is performed in a modern way (KII, Dar-es-Salaam, 2018).*

An association member of the carpentry association answering the same question stated:

*On the side of vocational training we don't provide on my understanding level I read different things on books, internets. The big knowledge I share with them is from our surroundings we imitate, but not through professionals, also by designing through internet, that's what we are doing to learn. But on my views I would like, there are some people selling paints such as coral paints, Goldstar, I think there's a time I will ask them to conduct seminars in our offices we will use their paints locally to mix because we can't afford to purchase mixing machine, the cost is too high almost TSH 8 to 9 Million. There was a time I heard VETA wanted to recognise different people learning different skills, I loved the idea, and I believe, as days goes by, I will do the same, for example loans and savings, but currently we are struggling to get money to cater for our basic needs. (FGD, Dar-es-Salaam, 2018).*

This again shows how some associations provide non-formal training whilst pursuing options of formal training, yet also revealing the constraints that associations may face in terms of financing such training. Workers themselves also mention the resources required to pursue training, coupled with the lack of government support with the implications this has for their ability to access jobs, as indicated by a construction group in Dodoma<sup>30</sup>:

---

<sup>30</sup> Various associations were represented in the FGDs including the Mpunguzi construction Group, Nala construction Group and Keko - a carpentry association.

*The government could have chipped in to support us in order to gain or secure more jobs as most of us have various professions. Take the case of a parent who has spent substantial amount of resources to educate his son up to advance secondary school and sometimes up to college, and after completing his studies having failed to secure government employment he sent him to VETA to study vocational training like welding etc. However, the crux of the matter is when a tender is advertised priority is given to building contractors and not informal construction workers (FGD, Dodoma, 2018).*

As in Kenya this reveals the relatively high level of education among construction workers (as compared to the other sectors), but also the lack of suitable formal employment leaving workers with the only option of seeking work in the (informal) construction sector, where despite having undergone training, individual workers are at a disadvantage compared to larger contractors. In sum, training through construction associations is less prominent in Tanzania, compared with Kenya, where associations partner with government agencies (NCA) and other (private) actors in providing training free of charge to workers. Furthermore, Kenyan associations are working closely with polytechnics, partnering with them in training graduates in various construction skills. These aspects were not manifested in Tanzania, although some associations had plans to take members for formal training.

## **6. Conclusion**

This study has examined the returns to formal, non-formal and informal training for informal workers across the sectors of construction, micro-trade and transport in urban areas of Kenya and Tanzania. The findings, from survey data, reveal substantial earnings returns to workers who undergo formal training, as well as non-formal and informal training, and the interview data add valuable insight to the sector and worker-type variation across locations, and the important role of associations in facilitating training. In general, it seems that workers, who have not been able to access formal employment following general education, undergo sector specific training suited to the informal work at hand. As is the case in many LMIC, the study presented several examples of occupational mismatches with workers settling for informal jobs, that require lower levels of education, despite many workers having completed secondary schooling (and some beyond). This may be due to a lack of relevant formal occupations combined with an outdated and inflexible education system unable to adapt to the changing nature of occupations, making certain skills obsolete in the long run. Vocational training constitutes a primary channel to close the skills divide, speed up and smoothen the school-to-work transition. Hence, if designed properly, training, especially when certified, could play an important part in enabling more (skilled) informal workers to find productive employment in the formal sector, although, often, workers face a loss in wages incurred during the training period. This could be addressed, partly by government support being directed towards the development and implementation of workplace training programmes, possibly through wage subsidies, for the (more formalised) segment of informal wagedworkers who, from the evidence presented in this paper, clearly stand to benefit from training. Such formal training, undertaken at the workplace, would allow workers to continue working whilst receiving training, thus not foregoing earnings, nor

having to worry about having a job to return to post-training. Finally, the importance of informal training for worker productivity and welfare, must not be overlooked, and in addition to family members, the role of associations as training providers should not be underestimated (Riisgaard et al., 2021), though often these are financially constrained and unable to finance training. Yet, they often encourage and facilitate training access, and during uncertain times like COVID-19, many associations in Kenya and Tanzania redirected their focus to providing health and safety training as part of their coping strategies and to extend social protection measures to their members (Torm et al., forthcoming). Thus, whilst in the short-run the more informal training takes priority, in the longer term and of relevance to policy development, the results show the importance of strengthening formal training institutions and ensuring that courses are affordable and tailored to worker needs, so that investing in training becomes worthwhile, also for own-account workers and micro-firms. In combination, such efforts would help towards formalising labour markets and furthering decent work, also in informal settings.

## Tables

**Table 1: Summary statistics**

	All		Kenya		Tanzania	
	Av.	SD	Av.	SD	Av.	SD
Mean wage USD	10.69	14.37	10.96	9.38	10.45	17.60
Formal training	0.25	0.43	0.29	0.45	0.22	0.41
· <i>School</i>	<i>0.19</i>	<i>0.39</i>	<i>0.23</i>	<i>0.42</i>	<i>0.16</i>	<i>0.36</i>
· <i>association</i>	<i>0.03</i>	<i>0.18</i>	<i>0.04</i>	<i>0.20</i>	<i>0.03</i>	<i>0.16</i>
· <i>formal app.</i>	<i>0.03</i>	<i>0.16</i>	<i>0.01</i>	<i>0.11</i>	<i>0.04</i>	<i>0.19</i>
Non-formal training	0.22	0.41	0.31	0.46	0.15	0.35
Informal training	0.15	0.36	0.07	0.26	0.22	0.41
Self-trained	0.37	0.48	0.30	0.46	0.42	0.49
Male	0.77	0.42	0.77	0.42	0.78	0.42
Member	0.58	0.49	0.60	0.49	0.56	0.50
Age	35.23	9.89	36.20	9.80	34.38	9.89
Married	0.66	0.47	0.76	0.43	0.58	0.49
Assets	0.35	0.48	0.27	0.44	0.43	0.50
Local	0.37	0.48	0.26	0.44	0.46	0.50
Post sec. education	0.11	0.31	0.14	0.35	0.08	0.27
Chance	0.79	0.41	0.80	0.40	0.78	0.41
Money	0.31	0.46	0.32	0.47	0.30	0.46
Education/training/passion	0.22	0.41	0.11	0.32	0.30	0.46
Tie strong	0.12	0.32	0.12	0.33	0.11	0.31
Tie weak	0.35	0.48	0.35	0.48	0.34	0.48
Micro-firm	0.11	0.31	0.07	0.26	0.14	0.35
Wageworker	0.37	0.48	0.55	0.50	0.22	0.41
Own-account	0.52	0.50	0.38	0.49	0.64	0.48
Construction	0.31	0.46	0.34	0.48	0.28	0.45
Transport	0.32	0.47	0.31	0.46	0.34	0.47
Trade	0.37	0.48	0.35	0.48	0.39	0.49
Nairobi	0.26	0.44	0.57	0.50	0.00	0.00
Kisumu	0.20	0.40	0.43	0.50	0.00	0.00
Dar	0.24	0.42	0.00	0.00	0.44	0.50
Dodoma	0.30	0.46	0.00	0.00	0.56	0.50
Observations	1385		644		741	

**Table 2: Training returns**

	(1)	(2)	(3)	(4)	(5)
Formal training	0.114* (0.061)	0.113* (0.061)	0.159** (0.068)	0.207*** (0.071)	
Male	0.359*** (0.074)	0.350*** (0.074)	0.347*** (0.074)	0.339*** (0.074)	0.341*** (0.074)
Member	0.117** (0.046)	0.108** (0.046)	0.107** (0.046)	0.106** (0.046)	0.108** (0.046)
Age	0.049*** (0.014)	0.050*** (0.014)	0.050*** (0.014)	0.050*** (0.014)	0.049*** (0.014)
Age squared	-0.064*** (0.018)	-0.065*** (0.018)	-0.065*** (0.018)	-0.065*** (0.018)	-0.064*** (0.018)
Married	0.006 (0.055)	0.009 (0.055)	0.008 (0.055)	0.005 (0.055)	0.003 (0.055)
Assets	0.112** (0.050)	0.106** (0.051)	0.108** (0.050)	0.101** (0.051)	0.102** (0.050)
Local	-0.107** (0.053)	-0.110** (0.053)	-0.110** (0.053)	-0.113** (0.053)	-0.111** (0.052)
Post sec. education	0.262*** (0.074)	0.263*** (0.073)	0.266*** (0.073)	0.267*** (0.074)	0.263*** (0.074)
Micro-firm	0.239*** (0.084)	0.219*** (0.085)	0.212** (0.085)	0.213** (0.084)	0.217*** (0.084)
Wageworker	-0.391*** (0.056)	-0.418*** (0.060)	-0.427*** (0.060)	-0.421*** (0.060)	-0.420*** (0.060)
Construction	0.471*** (0.073)	0.451*** (0.076)	0.417*** (0.078)	0.409*** (0.078)	0.407*** (0.077)
Transport	0.320*** (0.071)	0.307*** (0.072)	0.294*** (0.072)	0.294*** (0.072)	0.296*** (0.071)
Dodoma	-0.474*** (0.071)	-0.470*** (0.074)	-0.454*** (0.075)	-0.463*** (0.076)	-0.461*** (0.076)
Kisumu	-0.057 (0.062)	-0.043 (0.062)	-0.037 (0.062)	-0.040 (0.062)	-0.039 (0.062)
Dar	-0.349*** (0.064)	-0.345*** (0.065)	-0.320*** (0.066)	-0.332*** (0.067)	-0.325*** (0.068)
Chance		0.023 (0.055)	0.024 (0.055)	0.017 (0.054)	0.014 (0.055)
Money		0.150*** (0.052)	0.145*** (0.052)	0.138*** (0.052)	0.138*** (0.052)
Education/training/passion		0.011 (0.063)	0.008 (0.063)	0.005 (0.063)	0.002 (0.063)
Tie strong		0.155** (0.073)	0.145** (0.073)	0.135* (0.073)	0.134* (0.073)
Tie weak		0.069 (0.055)	0.066 (0.055)	0.052 (0.055)	0.052 (0.054)
Non-formal training			0.115* (0.063)	0.163** (0.066)	0.165** (0.066)
Informal training				0.158** (0.071)	0.158** (0.071)
Training school					0.208*** (0.070)
Training association					0.299 (0.188)
Training formal app.		0.679** (0.270)	0.664** (0.270)	0.646** (0.269)	0.099 (0.138)
R-squared	0.18	0.19	0.19	0.20	0.20
N	1385	1385	1385	1385	1385

Source: Author's elaboration based on SPIWORK data. Note: Standard errors in parentheses \*p<0.10, \*\*p<0.05, \*\*\*p<0.01

**Table 3: Training returns by country**

	(1) Tanzania	(2) Kenya
Male	0.416*** (0.119)	0.210** (0.093)
Member	0.055 (0.068)	0.236*** (0.062)
Age	0.090*** (0.018)	-0.004 (0.019)
Age squared	-0.124*** (0.023)	0.008 (0.023)
Married	0.046 (0.073)	-0.027 (0.087)
Assets	0.075 (0.074)	0.147** (0.068)
Local	-0.196*** (0.075)	-0.005 (0.070)
Post sec. education	0.336** (0.139)	0.215*** (0.079)
Training school	0.238** (0.111)	0.140* (0.084)
Training association	0.865** (0.344)	-0.064 (0.187)
Training formal app.	0.033 (0.154)	0.211 (0.303)
Non-formal training	0.226* (0.117)	0.085 (0.077)
Training family member	0.144* (0.083)	0.219 (0.142)
Chance	0.068 (0.078)	-0.060 (0.075)
Money	0.040 (0.079)	0.177*** (0.063)
Education/training/passion	-0.097 (0.082)	0.223** (0.091)
Tie strong	-0.031 (0.114)	0.241*** (0.093)
Tie weak	-0.082 (0.078)	0.164** (0.068)
Micro-firm	0.109 (0.105)	0.432*** (0.128)
Wageworker	-0.247*** (0.083)	-0.478*** (0.083)
Construction	0.539*** (0.119)	0.378*** (0.097)
Transport	0.312*** (0.104)	0.320*** (0.098)
Dodoma	-0.120 (0.074)	
Kisumu		-0.067 (0.060)
r2	0.23	0.20
N	741	644

Source: Author's elaboration based on SPIWORK data. Note: Standard errors in parentheses \*p<0.10, \*\*p<0.05, \*\*\*p<0.01



**Table 4: Training returns by sector**

	(1) Micro trade	(2) Transport	(3) Construction
Male	0.316*** (0.087)	0.252 (0.162)	0.784*** (0.191)
Member	0.255*** (0.094)	0.040 (0.067)	-0.088 (0.078)
Age	0.057*** (0.022)	0.031 (0.024)	0.022 (0.025)
Age squared	-0.077*** (0.027)	-0.034 (0.030)	-0.036 (0.031)
Married	-0.059 (0.095)	-0.035 (0.097)	0.060 (0.097)
Assets	0.132 (0.105)	-0.016 (0.069)	0.170** (0.081)
Local	-0.089 (0.099)	-0.050 (0.070)	-0.165* (0.095)
Post sec. education	0.403** (0.160)	0.148 (0.104)	0.121 (0.119)
Training school	0.449* (0.243)	0.092 (0.086)	0.398*** (0.145)
Training association	0.662 (0.439)	-0.269 (0.281)	0.409** (0.207)
Training formal app.	0.118 (0.408)	-0.055 (0.119)	0.203 (0.219)
Non-formal training	0.090 (0.128)	0.218* (0.113)	0.254** (0.112)
Training family member	0.170 (0.112)	0.142 (0.116)	0.181 (0.145)
Money	0.150 (0.097)	0.149** (0.072)	0.020 (0.098)
Education/training/passion	-0.093 (0.136)	0.028 (0.092)	0.050 (0.102)
Tie strong	0.152 (0.251)	-0.009 (0.088)	0.256** (0.120)
Tie weak	0.097 (0.125)	-0.079 (0.078)	0.105 (0.091)
Micro-firm	0.225* (0.120)	0.087 (0.159)	0.234 (0.174)
Wageworker	-0.787*** (0.188)	-0.245*** (0.079)	-0.123 (0.124)
Dodoma	-0.626*** (0.131)	-0.551*** (0.108)	-0.043 (0.154)
Kisumu	0.202 (0.127)	-0.224*** (0.082)	-0.199** (0.097)
Dar	-0.273** (0.117)	-0.265** (0.106)	-0.334** (0.132)
Constant	0.492 (0.422)	1.494*** (0.468)	0.917* (0.497)
r2	0.23	0.18	0.19
N	509	450	426

Source: Author's elaboration based on SPIWORK data. Note: Standard errors in parentheses \*p<0.10, \*\*p<0.05, \*\*\*p<0.01

**Table 5: Training returns by worker-type**

	(1) Wageworker	(2) Ownaccount	(3) Microfirm
Male	0.512*** (0.139)	0.268*** (0.096)	0.217 (0.210)
Member	0.022 (0.067)	0.107 (0.069)	0.120 (0.182)
Age	-0.002 (0.020)	0.062*** (0.020)	0.083* (0.042)
Age squared	-0.004 (0.025)	-0.084*** (0.025)	-0.094* (0.050)
Married	0.125 (0.091)	-0.091 (0.072)	0.108 (0.189)
Assets	0.171*** (0.065)	0.104 (0.077)	-0.121 (0.148)
Local	-0.026 (0.079)	-0.124 (0.077)	-0.257 (0.157)
Post secondary education	0.159* (0.096)	0.375*** (0.138)	0.184 (0.191)
Training school	0.294*** (0.100)	0.195* (0.110)	0.122 (0.219)
Training association	0.328 (0.210)	0.408 (0.374)	0.308 (0.235)
Training formal app.	0.029 (0.175)	-0.040 (0.195)	-0.096 (0.295)
Non-formal training	0.263*** (0.086)	0.029 (0.105)	0.371 (0.268)
Training family member	0.361*** (0.135)	0.028 (0.088)	0.461* (0.246)
Money	0.207*** (0.076)	0.124 (0.076)	-0.113 (0.198)
Education/training/passion	0.074 (0.094)	-0.105 (0.095)	0.168 (0.235)
Tie strong	0.228** (0.088)	0.156 (0.157)	0.054 (0.267)
Tie weak	0.139* (0.076)	0.018 (0.085)	-0.023 (0.209)
Construction	0.929*** (0.150)	0.529*** (0.130)	0.668** (0.282)
Transport	0.843*** (0.152)	0.313*** (0.090)	0.294 (0.227)
Dodoma	-0.415*** (0.130)	-0.482*** (0.110)	-0.721*** (0.235)
Kisumu	-0.209*** (0.071)	0.078 (0.120)	0.459* (0.248)
Dar	-0.237** (0.111)	-0.304*** (0.096)	-0.631** (0.242)
Contract	0.108* (0.065)		
r2	0.28	0.18	0.38
N	514	719	151

Source: Author's elaboration based on SPIWORK data. Note: Standard errors in parentheses \*p<0.10, \*\*p<0.05, \*\*\*p<0.01

## References

- Abebe, G., S. Carcia, M. Fafchamps, P. Falco, S. Frnaklin and S. Quinn (2021) “Anonymity or Distance? Job Search and Labour Market Exclusion in a Growing African City”, *Review of Economic Studies*, Vol.88 (3), p.1279-1310.
- Abowd, J. M. and Kramarz, F. (1999) “The analysis of labor markets using matched employer-employee data” in O. C. Ashenfelter and D. Card Eds. *Handbook of Labor Economics*, Vol. 3, pp. 2629–2710). Amsterdam: Elsevier.
- Almeida, R.K. and Aterido, R. (2015) “Investing in formal on-the-job training: are SMEs lagging much behind?”, *IZA Journal of Labor and Development*. <https://doi.org/10.1186/s40175-015-0029-3>
- Almeida, R., and de Faria, M. (2014) “The wage returns to on-the-job training: Evidence from matched employer-employee data”, *IZA Journal of Labor & Development*. <https://doi.org/10.1186/2193-9020-3-19>
- Alfonsi, L., Bandiera, O., Bassi, V., Burgess, R., Rasul, I., Sulaiman, M., and Vitali, A. (2020) “Tackling youth unemployment: Evidence from a labour market experiment in Uganda”, *Econometrica*, Vol. 88(6), pp. 2369–2414. <https://doi.org/10.3982/ECTA15959>
- Bassanini, A., Booth, A., Brunello, G., De Paola, M. and Leuven, E. (2005) “Workplace Training in Europe”, *IZA Discussion Paper*, No. 1640, <https://www.econstor.eu/bitstream/10419/33575/1/494165596.pdf>.
- Bahl, S., Bhatt, V. and Sharma, A. (2021) “Returns to Formal and Informal Vocational Education and Training in India”, *International Journal of Manpower*. 10.1108/IJM-04-2021-0211.
- Bjerger, B., Torm, N. and Trifković, N. (2021) “Can training close the gender wage gap? Evidence from Vietnamese SMEs”, *Oxford Development Studies*. Vol. 49 (2), pp. 119–132.
- Blaak, M., Openjuru, G.L. and Zeelen, J. (2013) “Non-formal vocational education in Uganda: practical empowerment through a workable alternative”, *International Journal of Educational Development*, Vol. 33, No. 1, pp. 88-97.
- Blundell, R., L. Dearden and Meghir, C. (1996) “The Determinants and Effects of Work-Related Training in Britain”, *The Institute for Fiscal Studies*, London. <https://www.ifs.org.uk/comms/r50.pdf> (accessed on 16 August 2018).
- Card, D., Kluve, J., and Weber, A. (2018) “What Works? A Meta Analysis of Recent Active Labor Market Program Evaluations”, *Journal of the European Economic Association*, Vol. 16(3), pp. 894–931.
- De Grip, A. and Sauermann, J. (2013) “The effect of training on productivity: The transfer of on-the-job training from the perspective of economics”, *Educational Research Review*, Vol. 8., pp. 28–36.

<https://doi.org/10.1016/j.edurev.2012.05.005>.

Devereux, S. and Sabates-Wheeler, R. (2004) “Transformative social protection”, *IDS Working Paper* 232, Brighton, Institute of Development Studies.

Felstead, A., Gallie, D., Green, F., and Zhou, Y. (2010) “Employee involvement, the quality of training and the learning environment: An individual level analysis”, *The International Journal of Human Resource Management*, Vol. 21(10), pp. 1667–1688.

Fialho, P., Quintini, G. and Vandeweyer, M. (2019) “Returns to different forms of job-related training: Factoring in informal learning”, *OECD Social, Employment and Migration Working Papers*, No. 231, OECD Publishing, Paris, <https://doi.org/10.1787/b21807e9-en>.

Folke-Larsen, Rand J., and Torm, N. (2011) “Do recruitment ties affect wages? An analysis using matched employer–employee data from Vietnam”, *Review of Development Economics*, Vol.15 (3), pp. 541-555.

Görg, H., Strobl, E., and Walsh, F. (2007) “Why do foreign-owned firms pay more? The role of on-the-job training”, *Review of World Economics*, Vol. 143, pp. 464-482.

Hamermesh, D. (2008) “Fun with matched firm-employee data: Progress and road maps”, *Labour Economics*, Vol. 15(4), pp. 662–672.

Hansen, H., Kanay De, S., Rand, J. and Trifković, N. (2022) “Wage returns to workplace training in Myanmar”, *Development Policy Review*. <https://doi.org/10.1111/dpr.12658>

ILO (2017) “Gender and the informal economy: key challenges and policy response”, *Employment Working Paper* 236, Geneva: International Labour Organization.

Jensen R. (2010) “The (perceived) returns to education and the demand for schooling”, *The Quarterly Journal of Economics*.

Kahyarara, G. and Teal, F. (2008) “The Returns to Vocational Training and Academic Education: Evidence from Tanzania”, *World Development*, Vol. 36 (11).  
<https://doi.org/10.1016/j.worlddev.2007.11.011>

McKenzie, D. (2017) “How Effective Are Active Labor Market Policies in Developing Countries? A Critical Review of Recent Evidence”, *The World Bank Research Observer*, Vol. 32(2), pp. 127–154.

Mincer, J. (1974) “Schooling, Experience, and Earnings [NBER Books]”, New York, NY: National Bureau of Economic Research, Inc.

Mitullah, W.V. (2010) “Informal workers in Kenya and transnational organizing: Networking and leveraging resources” in: Lindell, I. (ed.) “Africa’s informal workers: Collective agency, alliances and transnational organizing in urban Africa”. London, Zed Publications, pp. 184–206.

Mori, G., Kazungu, T. & Mchopa, A. (2014). ”Strategic planning: a management contrivance for effective performance of small and medium enterprises in Tanzania? A survey of selected SMEs in Ilala municipality”. *European Journal of Business and Management*, 6(39), pp. 193-203.

Niño-Zarazúa, M., and Torm, N. (2022) “Active labour market policies in Asia and the Pacific. A review of the literature”, UNESCAP, Bangkok

Ng, Y. C. (2005) “Training determinants and productivity impact of training in China: A case of Shanghai”, *Economics of Education Review*, Vol. 24(3), pp. 275–295.  
<https://doi.org/10.1016/j.econedurev.2004.05.005>

Nordman, C. and G. Hayward (2006) “Returns to On-the-Job Training: Do Skill Usage, Tasks and Workstation Matter? Evidence from British Workers”, *SKOPE research paper*, No. 63  
<http://www.skope.ox.ac.uk/wp-content/uploads/2014/04/SKOPERP63.pdf>.

O’Connell, P. J. and Byrne, D. (2012) “The Determinants and Effects of Training at Work: Bringing the Workplace Back in”, *European Sociological Review*, Vol. 28(3), pp. 283–300.

OECD/ILO (2019) “Tackling vulnerability in the informal Economy”, *Development Centre Studies*, OECD Publishing, Paris.

Pallangyo, W. A. (2021) “The informal sector and the safety of female traders in Tanzania: A reflection of practices, policies, and legislation”, *WIDER Working Paper 2021/160*.  
<https://doi.org/10.35188/UNU-WIDER/2021/100-6>

Riisgaard, L., Mitullah W. and Torm, N. (2021) eds. “Social Protection and Informal Workers in Sub-Saharan Africa: Lived Realities and Associational Experiences from Kenya and Tanzania.” London: Routledge. <https://doi.org/10.4324/9781003173694>

Rosholm, M., Nielsen, H. S., and Dabalen, A. (2007) ”Evaluation of training in African enterprises”, *Journal of Development Economics*, Vol. 84(1), pp. 310–329.  
<https://doi.org/10.1016/j.jdeveco.2005.11.008>

Singh, M. (2001) “Reflections on colonial legacy and dependency in Indian vocational education and training (VET): a societal and cultural perspective”, *Journal of Education and Work*, Vol. 14, No. 2, pp. 209-225.

Spence, M. (1973) “Job market signaling”, *The Quarterly Journal of Economics*, Vol. 87(3), pp. 355–374. <https://doi.org/10.2307/1882010>

[Torm, N. \(2023\) “Informal Worker Access to Formal Social Protection in Sub-Saharan Africa: Evidence from Kenya and Tanzania”, \*Journal of Development Studies\*, <https://doi.org/10.1080/00220388.2023.2217999> .](https://doi.org/10.1080/00220388.2023.2217999)

Torm, N. (2021) “The relationship between association membership and access to formal social protection: a cross-sector analysis of informal workers in Kenya and Tanzania”, in Riisgaard, L., Mitullah W. and Torm, N. (eds.) *Social Protection and Informal Workers in Sub-Saharan Africa: Lived Realities and Associational Experiences from Kenya and Tanzania*. London: Routledge. <https://doi.org/10.4324/9781003173694>

Torm, N. Kinyondo, G., Mitullah, W. Riisgaard, L. Gervas, A. Indimuli R. and Kamau, A. W. (forthcoming) “The role of informal worker associations in cushioning members during multiple idiosyncratic and covariate shocks in Kenya and Tanzania”, *International Labour Review*.

URT (2007) “Analytical report for integrated labour force survey 2006”, *Dar es Salaam: National Bureau of Statistics*, United Republic of Tanzania. UNU-WIDER 2021

URT (2012) “National baseline survey report for micro, small, and medium enterprises in Tanzania”, United Republic of Tanzania. [www.fsd.or.tz/wp-content/uploads/2016/05/MSME-National-Baseline-Survey-Report.pdf](http://www.fsd.or.tz/wp-content/uploads/2016/05/MSME-National-Baseline-Survey-Report.pdf)

Xiao, J. (2002) “Determinants of salary growth in Shenzhen, China: An analysis of formal education, on-the-job training, and adult education with a three-level model”, *Economics of Education Review*, Vol. 21(6), pp. 557–577. [https://doi.org/10.1016/s0272-7757\(01\)00049-8](https://doi.org/10.1016/s0272-7757(01)00049-8)

Yamauchi, F., Poapongsakorn, N., and Srianant, N. (2009) “Technical change and the returns and investments in firm-level training: Evidence from Thailand”, *The Journal of Development Studies*, Vol. 45(10), pp. 1633–1650. <https://doi.org/10.1080/00220380903012748>

## Appendix

### a) Sampling method

This article adopts a broad definition of the informal economy, including self-employment in informal enterprises (i.e. unregistered business), as well as wage employment in informal jobs (i.e. possibly working for a formally registered enterprise). This broader term, which was endorsed by the International Labour Conference in 2002, is now commonly used instead of the older and narrower concept of the informal sector. In accordance with this definition of the informal economy, the survey on which this article is based targeted wagedworkers, own-account workers, and micro-businesses owners with a maximum of two employees. For wage employment in informal jobs and in relation to contracts, we asked potential interviewees to stipulate first whether they had a contract and, if so, whether it specifies pay and entitlement to benefits, and whether these details of the contract are implemented in practice. If the answer to the first two questions were yes, but the answer to the last question was no, the interview proceeded as the interviewee was considered an informal worker.

In terms of the transport sector, the aim was to divide the sub-sample equally between *boda-boda* and *dala-dala/matatu* workers, and to sample drivers, conductors, and riders. For micro-traders, the target group were micro-traders that were mobile (on the street, at bus terminals, vacant lots, etc.) and also less mobile ones (e.g. *mama lishe*), but excluding those with permanent structures, such as kiosks or regular designated markets. In addition, the enumerators were instructed not to cover different types of micro-traders with different types of commodities, without distinguishing between what workers sold. For construction, the target groups were skilled and unskilled workers (wagedworkers and own-account workers) employed directly by construction/site managers or indirectly via an intermediary (e.g. gang leaders). As for the construction sites, we covered large and medium construction/building sites, waiting sites (e.g. streets, buildings), and excluded individual residential housing sites.

The aim was to cover 1,200 workers in total (600 per country) and 200 workers per sector (100 per sector per site), where 25% were sampled through associations identified purposively for the project. This was to ensure broad coverage of different types of associations amongst respondents, whilst being aware of the potential bias that this introduces to the sample. The remaining 75% were sampled by geography to ensure a degree of randomness, bearing in mind that it is not possible to ensure a representative sample when there is no clearly defined/delimited population of informal workers (and hence the probability of selection cannot be specified). This random sampling was also intended to capture smaller and more informal worker associations. For those workers sampled from associations, the target group were ordinary members and not leaders or members in an official position. Associations covered formal associations, SACCOs, trade unions (i.e. registered associations). For the geographical part of the sample, in each country two urban locations were selected (Kenya: Nairobi and Kisumu; Tanzania: Dar es Salaam and Dodoma) and three zones or districts per site were identified through transport hubs. The same sites were used across the three sectors.

In Tanzania, the construction sector sampling was also partly based on snowballing techniques in order to identify large and medium construction/building sites. The data gathering began in June 2018 and in the first phase 75% of the targeted workers were surveyed (by geography) using the Survey-to-Go software hosted by the Institute for Development Studies of the University of Nairobi. Information on associations, that informal sector workers belonged to, was subsequently obtained and extracted in preparation for the second survey data collection phase, which was undertaken in November and December 2018. This phase targeted 25% of workers drawn from the associations covered in phase one of data collection.

#### b) Cleaning the data

After merging the two datasets from Kenya and Tanzania we had a total sample of 1,462 workers, and were left with a final sample of 1,385 observations after the following cleaning steps:

1. Removing workers that were not in the target group, including tuk-tuk drivers and bicycles.
2. Dropping workers that did not provide earnings or provided earnings above the 99th and below the 1st percentile (outliers) by country and sector.
3. Dropping workers that indicated association contributions above the 99th and below the 1st percentile (outliers) by country and sector.



The Socio-Economic Research Centre (SECO) is an interdisciplinary centre conducting research on contemporary political and socio-economic dynamics in advanced, emerging and developing countries in the intersections between economic sociology, political economy and heterodox economics with a particular focus on:

- The nature, pace and outcomes of processes of capitalist transformation
- The social and financial challenges of transitioning to a net-zero carbon economy
- The political economy of natural-resource extraction, with implications for political instability
- The objectives and effects of changing economic policies, from labour and industrial policy to financial regulation



SOCIO-ECONOMIC RESEARCH CENTRE

ROSKILDE UNIVERSITY  
UNIVERSITETSVEJ 1, POSTBOX 260  
4000 ROSKILDE, DENMARK

