Moonlighting among teachers in urban Tanzania: A survey of public primary schools in Ilala District

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Abstract: Despite the widespread prevalence, teacher moonlighting is one of the under-researched areas. Using data from 313 public primary school teachers in Ilala District, this study examined the determinants of teacher moonlighting. The findings show that 39.4% of teachers had a secondary income generating activity. Sex and age of the teacher were significant predictors of the decision to moonlight. Further, the study findings show that the older the teacher is, the more likely the teacher is to moonlight. The results confirm the proposition that moonlighting in Tanzania is used by formal sector workers as a transition into self-employment after retirement.

Subjects: Labour Economics; Educational Research; Education Studies

Keywords: teacher moonlighting; multiple job holding; Tanzania; explanatory variables

1. Introduction
Moonlighting or having a supplementary income generating activity is common among workers in Tanzania. For example, it is a common phenomenon for medical doctors in Tanzania to practice “dual practice” in public and private sectors (Rolfe, Leshabari, Rutta, & Murray, 2008) and for other formal sector workers to supplement earnings through participation in informal economic activities (Theisen, 2006). Despite the widespread prevalence of moonlighting, the phenomenon is one of the under-researched areas (Panos, Pouliakas, & Zangelidis, 2014; Winters, 2010).

Low salaries and economic hardships are often cited as major reasons why formal sector workers engage in the informal economic activities as a second job. The literature has called this phenomenon the financial needs explanation of moonlighting. Thus, moonlighting can be thought to be a self-improvement effort of a worker striving to maximise their value in terms of salary and employment conditions (Beynon, Jones, Pickernell, & Packham, 2015). Empirical evidence on the association

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PUBLIC INTEREST STATEMENT
In this article, the authors explore the practice of holding secondary income generating activities among urban teachers in Tanzania and its contributing factors. With 4 in 10 of surveyed teachers reporting to hold a secondary income-generating activity, the phenomenon appears to be widespread. There indications that moonlighting affects a teacher's ability to prepare lessons adequately. The authors recommend further research to investigate on whether and how teacher moonlighting affects teaching quality.
between salary level and moonlighting is, however, mixed. For instance, Raffel and Groff (1990) study of Delaware teachers find no significant difference between moonlighters and non-moonlighters with respect to teaching salary; Bakasa (2016) finds teacher moonlighting is inversely related to salary levels in post-economic crisis Zimbabwe. Similarly, in a study on formal sector workers in Tanzania, Theisen (2006) finds support for the assumption that participation in moonlighting is inversely related to salary level. Conflicting evidence was found in the US using data from Current Population Survey 2005–2007, where Winters (2010) finds no significant relationship between teacher salary levels and incidence of moonlighting. Wages among public primary school teachers in Tanzania are among the lowest. Thus, moonlighting, as one of the self-improvement efforts undertaken by employees to cope with the economic hardship, is assumed to be generally high among public primary school teachers.

Previous studies on incidence of moonlighting have attempted to compare moonlighters and non-moonlighters with respect to a number of demographic characteristics including sex, age, household size and marital status of the worker. Overall, there is a consensus in the literature on the higher likelihood of male worker to moonlight than female workers. For example, Betts (2004) finds that male teachers had a higher moonlighting rate (46.3%) compared to female teachers (29.6%) in a survey of 312 teachers in New Jersey. Similarly, in a study of 4,100 Oklahoma teachers, Wisniewski and Kleine (1984) find that male teachers had a higher moonlighting rate (48%) compared to female teachers (23%).

The second strand of literature argues that moonlighting workers are on the average younger than non-moonlighters and thus are unlikely to have as much work experience. For example, using data from a nationally representative data from the US, Bobbitt (1988) finds an inverse relationship between incidence of teacher moonlighting and age or number of years of teaching experience. However, Theisen (2006) finds conflicting evidence where moonlighting is positively related to age of the worker in Tanzania. The study suggests that age plays a special role in the transition from work to retirement in Tanzania compared to industrialised countries as employees feel less security for the future in Tanzania.

With regard to the effect of the household composition on the motivation for moonlighting, the literature suggest that the larger the household size the more likely the individuals are to engage in moonlighting (Abdukadir, 1992; Owusu, 2007).

On the effect of marital status, Henderson and Schlesinger (1988) study of teacher moonlighting in Texas and find that married men were more likely to moonlight than single men. They also find that married women were less likely to work at more than one job than single women. Using data from Living Standards Survey conducted in 1998–1999 and 2005–2006 in Ghana, Baah-Boateng, Adjei, and Oduro (2013) find that workers with a spouse have a higher probability than unmarried workers to engage in more than one job. Their study conflicts traditional belief on the relation between marital status and incidence of moonlighting.

Formal codes recognise that there is nothing inherently wrong with moonlighting, except where it conflicts, or appears to conflict, with worker responsibilities on the primary job. However, previous studies have associated moonlighting with split focusing for employees and deprioritising primary job responsibilities. For example, Winters (2010) finds that moonlighting teachers in the United States work 1 h less in their primary job. Parham and Gordon (2011) use a case study to conduct an in-depth study on the effect of moonlighting on the teacher’s professional and family life. They find that moonlighting affects negatively several aspects of teaching as a profession including less time to collaborate with peers, poor career growth and quality of instruction. Thus, if not managed well, teacher moonlighting may negatively affect the teacher and student performance.

Although teachers have often been the focus of moonlighting studies (Ballou, 1995; Pearson, Carroll, & Hall, 1994; Raffel & Groff, 1990; Sappa, Boldrini, & Aprea, 2015; Urwick & Kisa, 2014;
Winters, 2010; Wisniewski & Kleine, 1984), no known study on teacher moonlighting has been conducted in Tanzania. This paper, therefore, attempts to fill the gap by analysing the prevalence and determinants of moonlighting among primary school teachers in urban Tanzania using data from a survey of 313 primary school teachers in Ilala District, Dar es Salaam Region.

Given the potential effect of moonlighting on the teacher's performance and the conflicting evidence in the literature, the present study attempts to further examine the determinants of teacher moonlighting in a Tanzania urban setting. The present study contributes to a better understanding of multiple job holding among formal sector workers in a developing country.

The paper is organised as follows. The next section describes the data and methodology used for the study. Section three provides an overview of teacher moonlighting in Tanzania. Section four presents the results and discussion of the findings. Section five encompasses the conclusions to this study.

2. Data and methodology

This paper uses data collected in a survey of 313 primary school teachers in 10 primary schools in Ilala Municipality, Dar es Salaam region. The sample represents 8.9% of all public primary schools in the municipality (Ilala Municipality has 112 public primary schools). The data was collected for a period of 4 month between February and May 2016. Data were collected in three steps. First, five wards in Ilala Municipality, Dar es Salaam Region, were randomly selected as places to conduct interviews. Second, 2 public primary schools from each ward were randomly selected, making a total of 10 public primary schools. At the last stage, heads of the selected primary schools were asked to assist in distributing the study questionnaires to all teachers under them in a staff meeting. In total 350 questionnaires were distributed, i.e. 35 questionnaires per selected primary school. Responses were received from 313 teachers, representing a response rate of 89.4%. Precautions have been taken to ensure the integrity of the data and the confidentiality of responses on every step, including secure storage of the filled questionnaires and files with the data. Because of non-response to questions concerning participation in moonlighting, the analyses in the following sections are based on a sample of size of 312 respondents.

Although the sample cannot be absolutely defended as representative of urban public primary school teachers in Tanzania, none of the figures are so far out of line to seriously challenge the representativeness of the sample with respect to age, sex, marital status, work experience or household size. This study classified a teacher as a moonlighter if they are engaged in other economic activities for the purpose of earning supplementary income.

To formalise the approach on the determinants of moonlighting among urban public primary school teachers, the study uses a binary logistic model that tests for the decision of a primary school teacher to moonlight as a function of the teacher’s sex, age, household size and marital status presented in Equation (1). Previous studies have used similar set of variables (Baah-Boateng et al., 2013; Culler & Bazzoli, 1985; McPake, Russo, & Tseng, 2014).

\[
M = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_n X_n + \varepsilon
\]  

where \( M \) is the dependent variable (whether the respondent moonlights) and \( X_1, X_2, \ldots \) are the explanatory variables (sex, age, years of work experience, household size and marital status), while \( \beta_0, \beta_1, \beta_2, \ldots \) are the coefficients to be determined, \( n \) is the number of independent variables and \( \varepsilon \) is a mean zero error term.
3. Overview of teacher moonlighting in Tanzania

Before considering the determinants of teacher moonlighting, it is important to get an idea of its prevalence among sampled teachers. Table 1 presents an overview of the nature and degree of moonlighting among the sampled public primary school teachers in Ilala District. The rate of moonlighting during the school year was 39.4% which correspond to the rate of 34.1% reported by both Betts (2004) and Wisniewski and Kleine (1984).

The results show that majority of the teachers moonlight is in non-school-related jobs such as trade activities, especially in retails on a micro or small-scale business. Other prevalent informal economic practices done by public primary school teachers in Ilala Municipality include animal rearing, crop farming, motorcycle taxi (boda-boda) and other informal production activities.

The analysis has also indicated that most of the respondents (69.1%) showed that moonlighting activities do not affect their primary job since most of the teachers carry their own secondary production activities after working hours outside the schools compound (Table 2).

However, the revelation that 30.9% of the teachers fail to prepare their lessons properly due to the need to do multiple job demands special attention. Poor lesson preparation by the teacher may affect the quality of instruction and ultimately the performance of the concerned students.

4. Empirical results and discussion

This section examines the study findings from the empirical examination of the moonlighting decisions of public primary school teachers in Ilala District. Table 3 presents the summary statistics for the variables used for the study. Table 4 presents the regression results for Equation (1).

4.1. Summary statistics for the variables used for the study

Among the teachers who responded to the survey 15.1% are male and 84.9% are female teachers. With regard to age, 34.9% are under 35 years, 36.9% are between 35 and 44 years of age and 28.2% are aged above 45 years. Average age of the respondents is 42 years. The sample comprises 10.6% single teachers, 80.6 married teachers and 8.7% other marital statuses. The number of years of working experience of the respondent comprised 21.2% with less than 5 years, 34.3% with 5–9 years working experience, 34.4% with 10–14 working experience, 7.7% with 15–19 years of working experience.

Table 1. Moonlighting practice among primary school teachers in Ilala Municipality

| S. No. | Type of practice                        | Frequency | Percent |
|--------|----------------------------------------|-----------|---------|
| 1.     | Micro- and small-scale trade           | 56        | 45.2    |
| 2.     | Animal rearing                         | 27        | 21.8    |
| 3.     | Crop farming                           | 12        | 9.7     |
| 4.     | Motorcycle taxi service                | 9         | 7.3     |
| 5.     | Hair dressing salon                    | 3         | 2.4     |
| 6.     | Public minibus (dala-dala) services    | 3         | 2.4     |
| 7.     | Mobile money agency services           | 2         | 1.6     |
| 8.     | Private tutoring                       | 2         | 1.6     |
| 9.     | Other                                  | 10        | 8.1     |
|        |                                        | 124       | 100.0   |

Table 2. Percentage of teachers on negative effect of moonlighting on teacher performance

| Effect                                                        | Agree | Disagree |
|---------------------------------------------------------------|-------|----------|
| Poor lesson preparation by the teacher                       | 30.9  | 69.1     |
| Poor attendance (unexcused absence or tardiness; misuse sick leave) | 15.2  | 84.8     |
experience, 12.8% with 20–24 years working experience, 9.3% with 25–29 years working experience, 4.2% with 30–34 years working experience, 4.8% with more than 35 years working experience. Average number of years of working experience was 15 years.

The household size of the sampled teachers was as follows. 3.8% had 1 member household, 11.9% had between 2 and 3 member household, 51.9% had between 4 and 6 member household and 30.9% had 7 or more members of household. Average household size was 5.4 members.

The teachers who responded to the survey they reported monthly basic income earning from their primary job as follows. 30.9% earn less than Tanzania Shilling (TZS) 600,000; 40.3% earn between TZS 600,000 and TZS 999,999; 57.9% earn between TZS 1,000,000 and TZS 1,599,999 and 0.1% earn more than TZS 1,600,000. The reported minimum monthly earning from moonlighting was TZS 58,000 and maximum of TZS 5,000,000 and standard deviation of 873,656. Average monthly income earned from moonlighting was TZS 696,465.

| Table 3. Characteristics of the variables used for the study (percentage in bracket) |
|-----------------------------------------------|----------------|----------------|----------------|
| Sex                                           | Male           | 29 (61.7)      | 18 (38.3)      | 47 (15.1)      |
|                                               | Female         | 94 (35.5)      | 171 (64.5)     | 265 (84.9)     |
| Age                                           | Under 35       | 29 (26.6)      | 80 (73.4)      | 109 (34.9)     |
|                                               | 35-44          | 51 (44.3)      | 64 (55.7)      | 115 (36.9)     |
|                                               | 45 and above    | 43 (48.9)      | 45 (51.1)      | 88 (28.2)      |
| Marital status                                | Single         | 10 (30.3)      | 23 (69.7)      | 33 (10.6)      |
|                                               | Married        | 100 (39.7)     | 152 (60.3)     | 252 (80.8)     |
|                                               | Other          | 13 (48.1)      | 14 (51.9)      | 27 (8.7)       |
| Years of working experience on the primary job| Under 5 years  | 4 (22.2)       | 14 (77.8)      | 18 (5.8)       |
|                                               | 5–9 years      | 20 (30.3)      | 46 (69.7)      | 66 (21.2)      |
|                                               | 10–14 years    | 39 (36.4)      | 68 (63.6)      | 107 (34.3)     |
|                                               | 15–19 years    | 11 (45.8)      | 13 (54.2)      | 24 (7.7)       |
|                                               | 20–24 years    | 19 (47.5)      | 21 (52.5)      | 40 (12.8)      |
|                                               | 25–29 years    | 15 (51.7)      | 14 (48.3)      | 29 (9.3)       |
|                                               | 30–34 years    | 6 (46.2)       | 7 (53.8)       | 13 (4.2)       |
|                                               | 35 years and above | 9 (60.0) | 6 (40.0) | 15 (4.8)       |
| Household size                                | 1 members      | 0 (0.0)        | 12 (100)       | 12 (3.8)       |
|                                               | 2–3 members    | 16 (43.2)      | 21 (56.8)      | 37 (11.9)      |
|                                               | 4–6 members    | 68 (42.0)      | 94 (58)        | 162 (51.9)     |
|                                               | 7 and above members | 36 (37.9) | 59 (62.1) | 95 (30.4)      |
| Monthly basic salary on primary job (in Shillings) | 300,000–599,999 | 30 (30.9) | 67 (69.1) | 97 (31.1)      |
|                                               | 600,000–1,000,000 | 71 (40.3) | 105 (59.7) | 176 (56.6)     |
|                                               | 1,000,001–1,599,999 | 22 (57.9) | 16 (42.1) | 38 (12.2)      |
|                                               | Above 1600,000  | 0 (0.1)        | 1 (100)        | 1 (0.3)        |
| Monthly extra income earned from moonlighting activities | Minimum (TZS) | 58,000 | 5,000,000 | 696,465 | 873,656 | 312 (100) |
4.2. Regression results

Table 4 presents the regression results for Equation (1). Consistent with Winters (2010), the study results find that male teachers have a higher proportion of moonlighters than their female counterparts (p-value < 0.05). The result suggests that male teachers are about twice more likely to moonlight than female teachers. Almost 62% of the male teachers moonlight, while about 35% of female teachers moonlight. The gender differences in incidence of moonlighting are comparable to studies conducted in developed countries. For example, Betts finds that male teachers are 1.6 times more likely to moonlight than female teachers in the US. Thus, in view of their relatively high proportion of female teachers in urban primary schools, male teachers are inordinately over-represented among moonlighters.

With respect to age, the study finds that older teachers are more likely to participate in moonlighting than younger teachers (p-value < 0.05). The proportion of moonlighters is 26.6% in the age group of under 35; 44.3% in the age group of 35–44 years and 48.9% in the age group of 45–60 years (Tanzania’s retirement age is 60). These findings contrast previous studies (Kimmel & Conway, 2001; Parham, 2006) which have indicated that younger teachers are more likely to moonlight than older workers. With regard to number of years of working experience, the current study results mirrors the results on the analysis by age, i.e. the proportion of teacher moonlighting increases with increase in number of years of working experience on the teaching job. The finding contradicts Bobbitt (1988) who found an inverse relationship between incidence of teacher moonlighting and number of years of teaching experience. These findings confirm an earlier study conducted in Tanzania by Theisen (2006), who suggest that multiple job holding in Tanzania increases with age as an indication for increasing number of workers who prepare to transit into self-employment after retirement.

The study, further, finds that size of teacher’s household size and marital status were not associated with reported moonlighting practice. These findings contradict Abdukadir (1992) who found the probability of moonlighting to increase with the increase in number of dependents a family has. The findings also contradict Henderson and Schlesinger (1988) and Baah-Boateng et al. (2013) who found that married men were more likely to moonlight than single men and that married women are less likely to work at more than one job than single women.

4.3. Motives for moonlighting

The survey also asked respondents why they engaged in moonlighting. The study finds that majority (94.3%) needed to make money to cover the gap between salary income and income needed to be on the desired living standard, 4.9% needed to broaden their work experience and 0.8% needed to reduce monotony as shown in Table 5.

Table 4. Probability of teacher moonlighting

|                        | B     | S.E.  | Wald  | df | Sig. | Exp (B) | 95% C.I. for EXP (B) |
|------------------------|-------|-------|-------|----|------|---------|----------------------|
| Sex of respondent      | 1.069 | 0.335 | 10.185| 1  | 0.001| 2.913   | 1.511 5.619          |
| Age of respondent      | 0.048 | 0.015 | 10.483| 1  | 0.001| 1.050   | 1.019 1.081          |
| Household members      | 0.029 | 0.059 | 0.234 | 1  | 0.629| 1.029   | 0.916 1.156          |
| Marital status         | -0.090| 0.135 | 0.449 | 1  | 0.503| 0.913   | 0.701 1.190          |
| Constant               | -2.478| 0.613 | 16.352| 1  | 0.000| 0.084   |                      |

Table 5. Motives for moonlighting

| Frequency                                              | Number | Percent |
|--------------------------------------------------------|--------|---------|
| Increasing income to cover the gap between salary income| 116    | 94.3    |
| and income needed to be on the desired living standard  |        |         |
| Broader work experience                                 | 6      | 4.9     |
| Reducing boredom                                       | 1      | 0.8     |
| Total                                                  | 123    | 100     |
These findings are consistent with previous studies, for example, Wisniewski and Kleine (1984) and Dickey, Watson, and Zangelidis (2011) who have suggested that majority of moonlighters do so in order to cover the gap between salary income and income needed to be on the desired living standard. The findings provide little support for the non-pecuniary motive. The findings suggest that moonlighting motive is mostly driven by uncertainty in the in income stream after retirement.

5. Conclusions
The analysis of moonlighting in the current study show that the incidence of moonlighting among urban primary school teachers in Tanzania is generally high but similar to other developed and developing countries. As in other African countries, the preferred secondary activities of urban teachers include trading and urban agriculture. Two factors have been empirically identified to significantly influence moonlighting among urban primary school teachers, these are sex and age of the teacher. Specifically, male teachers are about twice more likely to moonlight than their female counterparts and the probability to moonlight increases by about 5% with each increase in teacher’s age by 1 year.

The results confirms an earlier study conducted in Tanzania by Theisen (2006) who suggests that multiple job holding in Tanzania increases with age is an indication for increasing number of workers who prepare to transit into self-employment after retirement.

Whether such a high rate of moonlighting actually hurts the performance of those teachers who hold extra jobs is not clear. The current study was not designed to answer that question. However, the results provide some indication that moonlighting affects a teacher’s ability to prepare lessons adequately. Further research is needed to investigate on whether and how teacher moonlighting affects teaching quality.

Funding
The authors received no direct funding for this research.

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Citation information
Cite this article as: Moonlighting among teachers in urban Tanzania: A survey of public primary schools in Ilala District, Vedastus L. Timothy & Skeeter Nkwama, Cogent Education (2017), 4: 1334434.

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