

Tundui, Charles S.; Tundui, Hawa P.

**Article**

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# Examining the effect of child labour in the profitability of women owned enterprises: a case of microcredit supported enterprises in Tanzania

Charles S. Tundui<sup>1\*</sup>  and Hawa P. Tundui<sup>2</sup>

\* Correspondence: [cstundui@mzumbe.ac.tz](mailto:cstundui@mzumbe.ac.tz); [csechambo@yahoo.com](mailto:csechambo@yahoo.com)

<sup>1</sup>Faculty of Social Sciences, Mzumbe University, P.O. Box 5, Mzumbe, Morogoro, Tanzania  
Full list of author information is available at the end of the article

## Abstract

This paper examines the effect of child labour in the profitability of women owned enterprises. The study covered 429 women respondents who had access to microcredit in Morogoro and Iringa towns. We used the Ordered Probit to model the relationship between the predictors and the outcome variable. The findings show that the use of child labour plays a more significant role in the profitability of women businesses than any variable included in the analysis. Results have also shown that owners who possess business skills, who have access to markets and those who do not separate business resources from household resources are more likely to experience a profit increase in their enterprises than otherwise. On the other hand, access to loans doesn't seem to translate into increases in enterprise profit. From these results, we gather that as a poverty alleviation strategy, microcredit access and micro enterprising are not a panacea, but will require other supporting policies and services to enable women to find their way out of poverty. It is also important that job creation and employment patterns of microcredit supported enterprises are studied and valued accordingly.

**Keywords:** Child labour, Profitability, Women-owned enterprises, Microcredit supported

## Background

The ILO (2013) estimates that a total of 168 million children aged 5 to 14 are working around the globe. The statistics also show that the problem of child labour is widespread in the Sub-Saharan Africa, where about 59 (25%) million children are working. In Tanzania, 29% of children are employed as child labour, which is above the Sub-Saharan Africa average (DANIDA 2016). Of these, 93% is employed as unpaid family workers, mainly in the agricultural sector (92%). In the urban areas, children work as shopkeepers, street vendors and domestic workers (DANIDA 2016).

The literature suggests that the major reasons for child labour are numerous, however, the major cause is household income poverty (Togunde & Carter 2006; Blume & Breyer, 2011; Smith 2014). Because of poverty, children in poor families may be forced to work with a view to generating an extra income to augment family income, alleviating income

and expenditure shocks or meet other household requirements (Togunde & Carter 2006; Blume & Breyer 2011; Smith 2014).

Policy makers, development practitioners and researchers are of the view that the best approach to combat and mitigate the incidence of child labour is to combat household poverty by raising household incomes. In particular, the proponents of microcredit propose that raising household incomes through microcredit and microenterprising could be an important strategy to a reduction of child labour (Blume & Breyer 2011). Arguably, with improved access to microcredit, the poor and low income families will be able to create productive enterprises, thereby increasing household incomes, find their way out of poverty and reduce the odds for children to engage in child labour (ILO 2009). The observed expansion of the microfinance industry during the last three decades in the developing world is among the measures that aimed at easing limited access to financial resources by micro and small business operators, mostly women (Lock & Smith, 2015; Chichester, Pluess, Lee, & Taylor 2017).

Evidence also shows that there is an increasing participation of women in micro and small business ownership in low-income countries than in high-income countries (Shah & Saurabh, 2015; Lock & Smith 2015). For example, in 2012, women-owned about 1.7 million businesses in Tanzania, making up 54.3% of the operators in the micro, small and medium enterprises (MSMEs) sector. The majority (about 99%) is, however, over-represented in informal and micro activities (Mori 2014).

Despite the assumed benefits, conflicting views and findings emerging from the field are suggesting that the impact of microcredit on women economic empowerment, poverty alleviation and improvement in the overall household welfare are mixed and somewhat anecdotal (Bateman 2011; Roy 2010; Van Rooyen, Stewart, & De Wet 2012). It has also been noted that access to microcredit not only enhances an expansion in microenterprising activities, but also unwanted increases in a workload in member households. With increasing business workload, children are being forced to take on additional responsibilities in the home while their parents are undertaking business activities (CIDA (Canadian International Development Agency) 2007; Richter & de Coninck 2015). Hence, children in countries with several microfinance programmes are working (Hazarika & Sarangi 2008; Blume & Breyer 2011; Islam & Choe 2013; Smith 2014). Children are employed in microcredit supported enterprises through active participation in family and non-family businesses. Studies also suggest that owners of micro and small businesses, especially women are unable to hire paid workers, hence are more likely to use unpaid family workers, mostly children (Lehmann & Hirata 2010; Bharadwaj 2014). On the other hand, while research has established that businesses owned by women are generally smaller, less successful and more likely to fail than businesses owned by their male counterparts (Coleman 2007), evidence from microfinance impact evaluation studies shows that women microcredit borrowers have higher repayment rates than men (Armendáriz & Morduch 2010; D'Espallier, Guérin, & Mersland 2011). This could imply that higher rates demonstrated by women borrowers may not necessarily be attributed to successful business performance, but possibly to some other reasons. de Mel, McKenzie, and Woodruff (2008) contend that the use of unpaid family labour constitutes the explanation for high returns to micro and small enterprises that are supported by microcredit. Smith (2014) is also of the view that although numerous studies have examined the impact of microcredit on child labour, they have failed to sufficiently capture the contribution

of child labour to business growth and household incomes. Further, the focus of previous studies has been on the effect of microcredit on child labour, school enrolment and attendance (Islam & Choe 2013; Tarozzi, Desai, & Johnson 2015). Evidence also shows that only one study has examined the effect of microcredit on child labour in Tanzania (CIDA 2007). To the best of our knowledge, there are no scholarly studies on the impact of child labour on the performance of microcredit supported businesses in the country.

Failure to account and control for the use of child labour in microcredit supported enterprises may overestimate or underestimate the impact of microcredit interventions. The assumption is that profitability levels displayed by women businesses may give a false picture of performance, particularly when the use of child labour is not correctly assessed and valued. Therefore, the objective of our study is to examine the effect of child labour on the profitability of women owned microcredit supported enterprises using the ordered probit method. Our study is unique in a sense that it goes beyond the effect of microcredit on child labour to examine the effect of child labour on the profitability of women owned microcredit supported enterprises. Accurate assessment of the various types of labour use; and performance of women owned microcredit supported businesses is critical for better understanding of the dynamics of child labour; microcredit, women empowerment and poverty alleviation. Hence, our study adds to the literature by providing an additional evidence of the effect of microcredit access on child labour, women empowerment and poverty reduction.

### **Literature review**

While research shows that the causes of child labour are multifaceted, it is generally agreed that the major cause is household income poverty (Blume & Breyer 2011; Richter & de Coninck 2015; Togunde & Carter 2006). For households with no access to productive economic resources, child labour is considered the appropriate response to increasing household incomes and family survival (Blume & Breyer 2011; Smith 2014). It is therefore presumed that when households are assisted to increase their incomes, and hence a reduction in household poverty, this would eventually lead to a decline in the incidence of children engaging in child labour (Lehmann & Hirata, 2010; Blume & Breyer, 2011).

### **The essence of microcredit and the use of child labour**

Microcredit is the provision of small size loans to poor borrowers, particularly women who lack access to conventional finance. As already noted, the essence of microcredit is to enable the poor to access financial services to support their entrepreneurial activities with a view to increasing their household incomes, cope with their day-to-day activities and emergencies; as well as increasing their chances of accumulating assets and escaping poverty (CIDA 2007; ILO 2009; Smith 2014). Microcredit is viewed by its proponents as an important strategy and a more sustainable way of achieving women empowerment. It is also assumed to reduce unemployment as well as opening up avenues for increased female labour force participation (Pitt and Khandker 1998; ILO 2009). A well-designed, targeted and delivered microcredit is not only capable of

combating child labour, but also increasing the odds for a child's school attendance and attainment (ILO 2009; Blume & Breyer 2011; Sherratt 2016).

Regarding the use of child labour in a business, business owners may use child labour if they perceive that the opportunity cost of child labour is relatively lower compared to using an adult labour. For a family business, children provide a source of easily accessible cheap labour (CIDA 2007; Richter & de Coninck 2015). In addition, children may not require immediate monetary payments and other indirect costs (Blume & Breyer 2011; Richter & de Coninck 2015).

Business owners may also use child labour if their enterprises cannot generate sufficient levels of surplus (profits) to cover both operational and expansion needs of the enterprise, including wage bills. In most cases, owners of microcredit supported businesses may use child labour to avoid cost and unnecessary loan repayment pressures (Gonzalez 1999).

Literature also considers social norms and culture to be another cause for child labour. According to the social learning theory, child labour is a product of a learned behaviour, socialisation and parent's occupation (Togunde & Carter 2006). Hence, a child is more likely to engage in child labour as a way of learning alongside the parent. Parents may prefer to use child labour with a view to transferring business and family skills, thereby building appropriate stocks of household's human capital for future generations (Togunde & Carter 2006; CIDA 2007; Richter & de Coninck 2015).

Further, in certain instances, business owners may be reluctant to hire an adult labour if they perceive that this step would be risky to the business operations (Blume & Breyer 2011). This is especially the case when labour market imperfections are prevalent and owners do not have enough information about the skills and moral integrity of the potential employee (Bharadwaj 2014).

It is also argued that controlling hired adult labour from outside the family may be more challenging than children. Similarly, labour from outside the household may be lacking commitment and personal attachment to the business operations including costs (Blume & Breyer 2011). Therefore, to increase efficiency while minimizing operational and other transaction costs, business owners may prefer to use child labour rather than paid adult labour. Concerning the effect of microcredit on child labour, empirical studies have produced mixed results. For example, in a multi country study that investigated the impacts of microfinance initiatives on children in Bolivia, Tanzania, India, and Egypt, CIDA (2007) found that children were extensively engaged in microcredit supported enterprises both in family and non-family businesses. Likewise, Hazarika and Sarangi (2008) found that children in Malawi were more likely to work in households that had access to microcredit. In Bangladesh, 13.7% of children, mostly girls are engaged in child labour, partly because of expansion of micro enterprising that is supported by microcredit (Islam & Choe 2009).

Further, Wydick (1999) observed a positive relationship between access to credit and propensity of working as a child labour in member households; however, the odds of working as a child in a household's business are higher when the borrowed fund is used for purchasing capital equipment instead of supporting operational activities. In contrast, in a study that examined the effect of micro insurance on combating child labour in Pakistan, Landmanna and Frölich (2015) report that microfinance is capable of combating child labour if it is combined with micro insurance services. A similar study

in Pakistan also came to the same conclusion that among the poorest households, microcredit is more likely to reduce child labour if it is leveraged with microinsurance (Chakrabarty 2015). However, Chakrabarty noted that for the moderately poor and households above the poverty line, microcredit plus micro insurance did not seem to have any effect on child labour.

In the quest for labour productivity, firm-size and gender among informal firms in Latin America, Amin (2011) observed that about 18% of the labour force among women -owned businesses was comprised of family members, mostly children. The study also noted that the proportion of paid workers in the total labour force was very small (3%) and about 75% of the businesses were run by the owners without any additional employees. In their study, Islam and Choe (2013) report that girls are more likely to be negatively affected than boys, and less likely to attend school as their parents take out microcredit.

### **Determinants of micro and small business performance**

Studies on micro and small business performance show that business performance is determined by myriads of factors. Among these include the characteristics of business owners (Lerner & Almor 2002; Shah, Nazir, Zaman, & Shabir 2013). Owners are the ones who identify entrepreneurial opportunities, make all the strategic and operational decisions and implement the decisions (Lerner & Almor 2002). Lerner & Almor also contend that business owners' skills are the most important asset of the firm, suggesting that when the skill set is stronger, the performance of the business will be higher. Among the socio-demographic factors that influence business performance include age, marital status and human capital attributes of business owners, such as education level and business skills (Shah et al. 2013). The effect of these variables on business performance has been assessed in previous studies (see for example Coleman 2007).

Another important factor that explains business performance is the family of the business owner. A family is an important source of micro and small business support and growth. It also provides the avenue to a business for initiation and transition (Edelman, Manolova, Shirokova, & Tsukanova 2016). Likewise, a family is a centre for the emergence, recognition and exploitation of entrepreneurial opportunities (Aldrich and Cliff 2003). A family may also be a good source of cheap or unpaid labour and other support services (Edelman et al. 2016). The attributes of a family that are likely to affect enterprise performance include family or parental responsibilities and the number of household members who depend on the business owner or enterprise for their livelihood. Usually, big families have more problems to resolve which leave business owners with insufficient or less capital to reinvest. Parental responsibilities may also hamper owners' efforts and commitment to their businesses.

Business performance is also influenced by its own characteristics, including whether the business is small or big, informal or formal. Business characteristics that influence enterprise performance reported in the literature include, among other factors, business age and size. Just like owners' age, business age can serve as a proxy for business survival and growth experiences (Coleman 2007).

Studies have also established that the lack of access to markets or market demand is a serious problem, particularly among women entrepreneurs. This is because of their



inability to create markets and quickly adapt to the ever-changing needs of their consumers. Women business owners are also presumed to experience a limited access to international markets, as well as the lack of selling and negotiation skills (Richardson, Howarth, & Finnegan 2004).

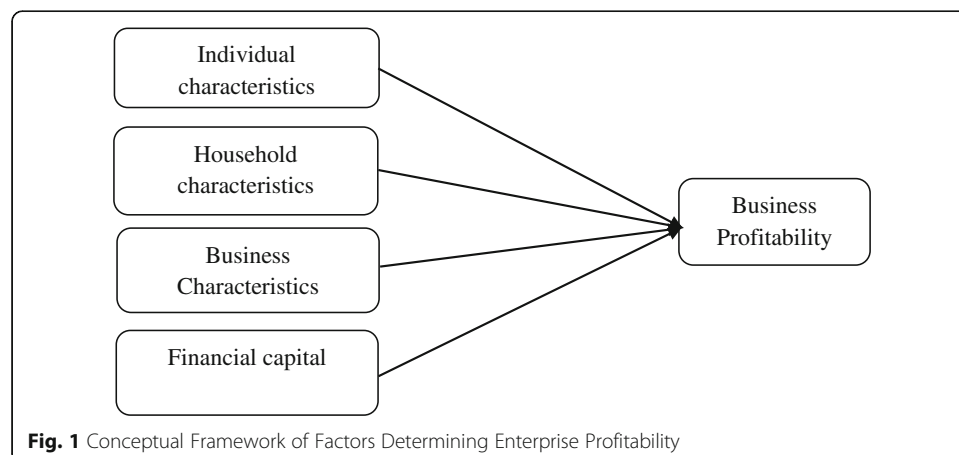
Small business performance is also influenced by access to sufficient levels of capital. Capital enables the business to innovate, grow and create jobs (Coleman 2007). Continued access to sufficient levels of funding also enables owners to take advantage of the changing market conditions and needs. Microcredit impact assessment studies report that the impact of credit on businesses varies with loan size (Ferdousi 2015). Hence, borrowers who have access to big loans are able to expand faster and take advantage of any emerging entrepreneurial opportunities better than borrowers with smaller loans. Given that the respondents sampled were microcredit clients, we included in the study the loan amount (size) as our financial variable.

Building on the literature, our study variables are summarised in the following conceptual framework. That is, the performance of women owned microcredit supported businesses is determined by demographic characteristics of the owner, household characteristics, business's characteristics; financial capital, including the loan size and physical capital (child and adult labour) (Fig. 1).

## Methods

The study surveyed a total of 429 µ and small women business owners in Morogoro and Iringa towns in Tanzania. The respondents were members of a microfinance programme.

One of the methodological difficulties experienced in microcredit impact assessment studies include the fungibility of loans. Fungibility results from failure to separate the use of the loan money, business income and other resources from household resources (de Mel, McKenzie, & Woodruff 2009). It also involves the use of loan fund for a purpose other than the one for which the loan was sanctioned; or use of loan fund by someone other than the borrower (Bali Swain 2004). Failure to control the fungibility may overstate or understate the impact of microcredit interventions. Moreover, the impact may be overestimated when households or borrowers have access to other sources of credit or income (Khalily 2004).



Therefore, to address the methodological difficulties above, clients were clustered based on their loan size and then randomly selected from the programme's list of clients. The assumption behind the clustering is that any observed change in enterprise profits could partly be attributed to the size of the client's loan. We also disaggregated our respondents in terms of clients by access to microcredit only and clients with microcredit and other sources of credit (Khalily 2004). Similarly, we paid attention to the use of loan money and non-separation of business resources from household resources.

We used questionnaires to solicit information from respondents. The questionnaire was first pre-tested to ensure its clarity and the reliability of study results. Data collection exercise was aided by enumerators. The study involved the use of a cross-sectional design. All those who were involved in the survey were owners of the enterprises.

### **Study variables**

#### ***Dependent variable***

For the purpose of this study, we use profitability to measure enterprise performance. Enterprise profitability is usually measured by an increase or a change in a business net revenue over time. However, studies report that more often owners of micro and small businesses, particularly in developing countries do not keep records of their business transactions and are also more likely not to separate business assets and incomes from household assets and incomes (Wolff & Pett 2007). In view of this lacuna it is recommended that information on profits must be derived from memory and the simplest method to estimate profits is to ask the business owner about sales of last month (de Mel et al. 2009).

To estimate business profits, we requested business owners to estimate their monthly production costs during the last loan cycle in terms of inputs, transportation, taxes; rents, water, electricity, etc. They were also asked to estimate the amount of their monthly total sales (cash and credit). Having estimated both sales revenue and costs, respondents were asked to estimate their enterprise profits and state whether profits had increased, remained unchanged or decreased.

Moreover, to capture information on job creation, size and labour utilization patterns, business owners were asked a number of questions. Firstly, they were asked to state whether or not during the last loan cycle their daily/weekly business workload had increased and how they managed to cope with the increased business workload. In case of increased workload, they were asked to state whether they used children (girls and boys - under 17 years of age) to assist with enterprise activities or not, including their number. They were also asked to state if they used adult workers and their number both paid and unpaid from the family and from outside the family. Lastly, they were asked whether they paid themselves a wage for working in their enterprises or not.

#### ***Independent variables***

As indicated above, our independent variables include the variables determining the impact of labour on enterprise performance. These include the use of child labour (children - boys and girls), adult members in the household and the business owner and paid employees from outside the family. Demographic characteristics of the business



owners (marital status, age, education, business skills and experience) (Barbieri and Mshenga 2008); business characteristics (business age) and financial capital (loan) were included as control variables (Table 1).

### Descriptive results

The results show that following access to microcredit, 25.6% and 51.3% of business owners reported significant and moderate increases in their business workload respectively. The remaining respondents (23.1%) did not notice any change in their business workload. Of those who experienced significant and moderate increases in business workload, 36.9% used their daughters to alleviate the increased business workload, whereas 22.2% used their sons to help with the increased workload. Moreover, 35.0% of business owners used other household members to help with the increased business workload. Only 5.9% of business owners were able to hire paid employees from outside the household. In addition, 51.0% of business owners were not paying themselves wages for working in the enterprise. From these results, we also noted that 94.1% of workers in women businesses were mainly family members. Of these, only 33.7% (of 94.1%)

**Table 1** Variable Description and Measurement

|    | Variable Description  | Variable measurement/Coding   |
|----|---|---|
| 1  | Enterprise profitability  | 3 = If enterprise profits increased, 2 = remained Unchanged, 1 = decreased              |
| 2  | Amount of last loan   | Loan amount transformed into natural logarithm  |
| 3  | Owner's age in years  | Age in years transformed into natural logarithm   |
| 4  | Owner's age square in years   | Age in years transformed into natural logarithm   |
| 5  | Owner's education   | 1 = if the highest level of education completed is secondary, 0 = otherwise             |
| 6  | Marital status  | 1 = if married or living with a partner, 0 = otherwise                                  |
| 7  | Business age (in months)  | Business age in months transformed into natural logarithm                               |
| 8  | Number of household members   | Number of members transformed into natural logarithm                                    |
| 9  | Access to product markets   | 1 = owner has improved access to markets, 0 = otherwise                                 |
| 10 | Possession of businesses skills and experience                          | 1 = If owners possess business experience, 0 = otherwise                                |
| 11 | Use of own labour to support business operations                        | 1 = if owners use own labour, 0 = otherwise   |
| 12 | Payment for owners' work in the enterprise                              | 1 = If owners are paying themselves a wage for working in the enterprise, 0 = otherwise |
| 13 | Use of sons labour to support business operations                       | 1 = if owners use child labour (boys), 0 = otherwise                                    |
| 14 | Use of daughters labour to support business operations                  | 1 = if owners use child labour (girls), 0 = otherwise                                   |
| 15 | Use of other adults to support business operations                      | 1 = if owners use other adults, 0 = otherwise.  |
| 16 | Income and credit sources   | 1 = Only microcredit, 0 = Microcredit and other sources                                 |
| 17 | Separation of business assets and money from household assets and money | 1 = Separation, 0 = None separation   |

were paid family members. This suggests that despite the assumed benefits of microcredit access that accrued to women entrepreneurs, microcredit access had a negative effect in terms of increased workload on household members, particularly daughters compared to their sons. These results also agree fairly well with those of Wasihun and Paul (2011) who observed that 74.2% of the labour force in women micro and small owned enterprises in Ethiopia was family members. The study also found that only 25.8% of the employees in those businesses were hired labour from outside the family.

### **Multivariate analysis**

#### ***Model specification***

or the purpose of this article, we measure enterprise profitability using three scales: business profits decreased, remained unchanged or increased. We used the Ordered Probit Model to evaluate the effect of the explanatory variables on the enterprise profitability status, but also to determine the impact of each explanatory variable on the probability of each level of enterprise profitability status. This is because our dependent variable is polychotomous in nature (Borooah 2002). Modelling polychotomous dependent variables may use the ordered logit or ordered probit methods. In principal, the two approaches arrive at the same results and conclusions. While there are no theoretical reasons for preferring one method to the other, the majority of analysts tend to use the ordered probit, possibly because of its assumption of normal distribution of the error term. In the ordered logit model the error term is assumed to be logistically distributed, whereas in the ordered probit model the error term is normally distributed. The two approaches also differ in terms of interpretation of their coefficients. The other advantage of the ordered probit analysis over the ordered logit is that it allows for random test variation, correlated error terms and unequal error variances, but also can capture any substitution pattern (Borooah 2002).

#### **Empirical results**

In examining the impact of child labour on enterprise performance, we also studied other factors likely to have an impact on the performance of women owned businesses. In Table 2 we present results for our ordered probit model where the dependent variable is an ordered categorical model with three responses; with a value of 1 indicating a decrease in enterprise profits, 2 indicating no change in profits, and 3 representing an increase in enterprise profits. Moreover, to measure the effect of explanatory variables on our dependent variable, we calculated the marginal effects. Marginal effects indicate a change in the dependent variable when an independent variable changes by one unit. The marginal effects in our estimations are presented for the highest value only, which is “enterprise profits increased”. Marginal effect results are shown in Table 3. We estimated two models: one with the basic variables, including family labour (child and adult members) and hired labour from outside the household as explanatory variables and the second one without labour explanatory variables. The Ordered Probit results are shown in the following tables.

**Table 2** Ordered Probit Results for Enterprise Profits as a Dependent Variable

|    | Variables                   | Model 1               |       | Model 2                  |       |
|----|-----------------------------|-----------------------|-------|--------------------------|-------|
|    |                             | With labour Variables |       | Without Labour Variables |       |
|    |                             | Z                     | P > z | Z                        | P > z |
| 1  | Loan size                   | 0.31                  | 0.757 | 0.92                     | 0.355 |
| 2  | Education level             | -0.93                 | 0.352 | -1.4                     | 0.16  |
| 3  | Owner's age                 | 1.27                  | 0.205 | 1.04                     | 0.299 |
| 4  | Owner's age squared         | -1.26                 | 0.209 | -1.18                    | 0.236 |
| 5  | Marital status              | 2.36                  | 0.018 | 2.52                     | 0.012 |
| 6  | Number of household members | -1.19                 | 0.232 | -1.89                    | 0.059 |
| 7  | Business age                | -1.25                 | 0.211 | -1.32                    | 0.185 |
| 8  | Separation of assets        | -2.97                 | 0.003 | -3.08                    | 0.002 |
| 9  | Business skills             | 4.91                  | 0.000 | 6.42                     | 0.000 |
| 11 | Market access               | 4.20                  | 0.000 | 7.37                     | 0.000 |
| 12 | Income sources              | 2.64                  | 0.008 | 1.61                     | 0.108 |
| 13 | Own labour                  | 2.45                  | 0.014 |                          |       |
| 14 | Wage payment                | -6.51                 | 0.000 |                          |       |
| 15 | Girls labour                | 3.55                  | 0.000 |                          |       |
| 16 | Boys labour                 | 3.06                  | 0.002 |                          |       |
| 17 | Adult labour in a household | 2.00                  | 0.045 |                          |       |
| 18 | Hired labour                | 2.34                  | 0.019 |                          |       |
|    | Cut 1                       | -7.59                 | 9.335 | -7.665                   | 7.739 |
|    | Cut 2                       | 7.057                 | 9.868 | 7.244                    | 8.160 |
|    | Number of observations      | 429                   |       | 429                      |       |
|    | LR chi <sup>2</sup> (18)    | 245.4 (18)            |       | 172.9 (11)               |       |
|    | Prob > chi <sup>2</sup>     | 0.000                 |       | 0.000                    |       |
|    | Log likelihood              | -180.6                |       | -216.9                   |       |
|    | Pseudo R <sup>2</sup>       | 0.4045                |       | 0.2885                   |       |

**Model fit**

To test the model fit and adequacy, the pseudo  $R^2$ , also known as McFadden's likelihood ratio was used. It should, however, be noted that the pseudo  $R^2$  cannot be interpreted in the same way a conventional  $R^2$  is interpreted which describes the proportion of variation explained; second, the value of the pseudo  $R^2$  increases when the model increases in size. The value of the pseudo  $R^2$  varies between 0 and 1.0. However, studies have established that it is quite common to have a low  $R^2$  in the ordered probit analysis. For example, Gerlach (2007) reports some values of pseudo  $R^2$  as low as 0.26 in his estimation. Accordingly, our  $R^2$  is 0.404 for unconstrained model and 0.288 for the constrained model.

An alternative measure of model fit involves the use of the log likelihood ratio of the intercept model. The ratio shows the level of improvement over the intercept model offered by the full model. A likelihood falls between 0 and 1. If a model has a very low likelihood, then the log of the likelihood will have a larger magnitude than the log of a more likely model. Therefore, a small ratio of log likelihood indicates that the full model is a far better fit than the intercept model. Our results are reported in terms of Z-scores and  $p$  values.

**Table 3** Marginal Effects

| Variable                    | Model 1               |       |       | Model 2                  |       |       |
|-----------------------------|-----------------------|-------|-------|--------------------------|-------|-------|
|                             | With Labour Variables |       |       | Without Labour Variables |       |       |
|                             | Marginal Effects      | Z     | P > z | Marginal Effects         | Z     | P > z |
| Loan size                   | 0.007                 | 0.31  | 0.757 | 0.022                    | 0.92  | 0.356 |
| Education level             | -0.035                | -0.85 | 0.394 | -0.065                   | -1.57 | 0.117 |
| Owner's age                 | 0.439                 | 1.25  | 0.210 | 0.396                    | 1.04  | 0.299 |
| Owner's age squared         | -0.061                | -1.24 | 0.216 | -0.064                   | -1.19 | 0.234 |
| Marital status              | 0.053                 | 2.24  | 0.025 | 0.064                    | 2.63  | 0.009 |
| Number of household members | -0.049                | -1.17 | 0.242 | -0.086                   | -1.94 | 0.052 |
| Business age                | -0.019                | -1.22 | 0.221 | -0.023                   | -1.35 | 0.178 |
| Business skills             | 0.171                 | 4.73  | 0.000 | 0.232                    | 6.45  | 0.000 |
| Separation of assets        | -0.084                | -2.72 | 0.007 | -0.101                   | -3.28 | 0.001 |
| Market access               | 0.172                 | 5.18  | 0.000 | 0.234                    | 5.29  | 0.000 |
| Income or credit sources    | -0.094                | -2.3  | 0.021 | -0.061                   | -1.74 | 0.082 |
| Own labour                  | 0.094                 | 1.88  | 0.061 |                          |       |       |
| Wage pay                    | -0.230                | 5.17  | 0.000 |                          |       |       |
| Child labour (girls)        | 0.243                 | 2.68  | 0.007 |                          |       |       |
| Child labour (sons)         | 0.304                 | 2.24  | 0.025 |                          |       |       |
| Adult labour in a household | 0.145                 | 1.57  | 0.117 |                          |       |       |
| Hired labour                | 0.294                 | 1.69  | 0.092 |                          |       |       |

## Results

### The effect of child labour on enterprise profitability

Taken together, the results in Table 3 above show that child labour has an important effect on the profitability of microcredit supported businesses. We find that, business owners who used their daughters to support business operations were 24.3% points more likely to report an increase in enterprise profits than otherwise. The same observation is reported for the use of sons. Business owners who used their sons to support business operations were seemingly to experience enterprise profits increase by 30.4% points ( $p < .05$ ). This is also realised at 5% level of significance. Similarly, owners who used own labour to support their business operations ( $p < .01$ ) were 9.4% points more likely to report profits increase than those who were not ( $p < .01$ ). On the other hand, when business owners paid themselves wages for working in the enterprise were 23.0% points less likely to report an increase in enterprise profits ( $p < .01$ ). However, the use of both adult labour and hired labour from outside the household had no significant effect on enterprise profits. An interesting observation is that although the loan size is positively related to enterprise profitability, did not seem to suggest predicting enterprise profitability.

Findings have also demonstrated that business owners who possessed skills related to their business operations were likely to report profits increase by 17.1% points ( $p < .001$ ). Nonetheless, the owner's education level did not seem to have a significant impact on enterprise profits ( $p > .05$ ). We also find that the impact of improved access to markets on

enterprise profitability is significant ( $p < .001$ ). Owners who were able to access markets for their enterprises' produce were 17.2% points more likely to attain profits increase ( $p < .001$ ). In contrast, business owners who did not have access to other sources of credit and income, and those who separated business resources from the household's resources were less likely to experience an increase in their enterprise profits ( $p < .001$ ) by 9.4% and 8.4% points respectively.

Among the respondents surveyed, married life had a positive effect on the probability of reporting profits increase ( $p < .05$ ). The age of the business owner is positively related to enterprise profit. This suggests that as the age of the business owner increases, enterprise profits also increase; however, its effect is insignificant ( $p > .05$ ). Furthermore, to determine the effect of age on enterprise profits, we estimated the equation using age-squared. Results have shown that enterprise profits increased at a decreasing rate; yet the variable age squared is not a significant predictor of enterprise profits ( $p > .05$ ). Similarly, we have noted that although younger businesses were more likely to experience an increase in profits than older and established businesses, business age is not a significant predictor of enterprise profitability. In addition, while the number of members in a household had a negative effect on enterprise profitability, its marginal effect is insignificant ( $p > .05$ ).

Marginal effects show that in the absence of possibilities to use child labour, enterprises were more likely to experience an increase in profits only when the owners had improved access to markets (17.2 to 23.4% points), when business owners possessed skills and experience related to their business operations (17.1 to 23.0% points). Business owners were also more likely to report an increase in profits when they do not separate business resources (assets) from household resources (8.4 to 10.1% points).

## Discussion

As we have indicated above, the objective of this study was to examine the impact of the use of child labour on the profitability of women owned microcredit supported businesses. Overall, our results certainly suggest that the profitability of women businesses is influenced and determined by the various categories of labour used in the business. We also find that of all the variables studied, a unit change in labour use had the greatest effect on enterprise profits than any other independent variables operationalized in the model. In other words, profitability of women owned business was more sensitive to the type and changes in labour use, than any other variable included in the analysis. Specifically, the impact of child labour ranged from 24.3% to 30.4% points. From these results, we gather that child labour played a very significant role in the profitability, possibly the growth and survival of women owned microcredit supported businesses. An interesting observation is that while more girls relative to boys were used to support business operations, the impact of boys' labour on enterprise profitability exceeded that of girls (30.4% points for boys as opposed to 24.3% points for girls). This could be explained by the fact that girls just like other women in our societies shoulder multiple roles and responsibilities. Girls are more likely to participate in household chores than boys thereby limiting their effectiveness in the activities they are undertaking (Marcucci 2001). In a study that examined the influence of microcredit on school attendance in Pakistan, Menon (2005) also observed that as opposed to boys, girls appeared to spend more of their time on household responsibilities and less time

in school when parents had access to microloans or owned a microcredit assisted enterprise. From these results, we also support the notion that children are more likely to be affected by access to microcredit, but also more girls compared to boys are affected negatively (Islam & Choe 2013; Richter & de Coninck 2015). This presupposes that prudent measures are needed to make microcredit access a tool of poverty alleviation rather than a tool of child exploitation.

Furthermore, our results have shown that women business owners were more likely to report an increase in enterprise profits when owners possessed skills that are relevant to their business operations. In other words, although microcredit access in our case does not seem to predict enterprise profitability, business owners who approached business ownership with sufficient stocks of business skills and experience seemed to experience increases in enterprise profits. Earlier research has also established that businesses operated by owners with business skills and experience are more likely to do better than owners without such skills and experience (Kuzilwa 2005). This implies that microfinance programmes could have a significant impact on economic empowerment and poverty alleviation among women borrowers if they target women business owners who possess some business skills that are requisite for the successful business creation and operation. Alternatively, microfinance programmes could introduce training modules in business skills to help their clientele create and operate profitable businesses. On the other hand, education level of the owner was not a significant predictor of enterprise profitability, possibly because the majority of the respondents (75%) had attained only primary education level. This could mean that the education level of the business owner did not matter in determining profitability of their enterprises. This could also suggest that women business owners require more specialised business skills rather than just a formal education. Likewise, owners' age did not seem to translate into increases in business profits.

The findings have also established that business owners who had access to markets were more likely to report an increase in enterprise profit than those who had no access to markets. From these findings, we gather that for the greatest impact on clientele and households, microfinance programmes should facilitate their clientele to access a broader market for their products. This could be realised if microfinance programmes help their clients enter markets with profit potentials or establish businesses that target emerging markets. Moreover, microfinance programmes could offer a tailor-made training that could help prepare their clients to properly manage their businesses with a view to enhancing enterprise growth and profitability.

### **Implications of the study**

The findings of this study suggest that while microcredit is able to support entrepreneurial activities among the women, it is imperative that donors and microfinance programmes explore the impact of microcredit access on labour demands for the supported businesses. This is particularly important for the children of participating households. Our overall results suggest that whereas women's access to microcredit is likely to have important implications for enterprises' performance, it is important to emphasize that the use of child labour, plays a very significant role in enterprise profitability. In particular, the results show that while women's access to microcredit is likely



to have a positive effect on enterprise performance, it is also capable of producing unintended negative effects on children if the measures addressing the issues of microenterprise and child labour are not properly designed and put in place. Therefore, evaluating the impact of microcredit on enterprise profitability will obviously provide an incomplete assessment and significantly play down the true impact of microcredit on enterprise performance if issues of child labour are not accurately assessed and accounted for. Likewise, access to microcredit cannot result into poverty alleviation and economic empowerment if other supportive measures and services are not availed to the entrepreneurs. Pollin and Feffer (2007:2) argues that *“microenterprises run by poor people cannot be broadly successful simply because they have increased opportunities to borrow money.....”*. Similar views are shared by the microcredit pioneer and Nobel Laureate Professor Mohammed Yunus (2003:171) who contends that *“microcredit is not a miracle cure that can eliminate poverty in one fell swoop. But it can end poverty for many and reduce its severity for others. Combined with other innovative programmes that unleash people’s potential, microcredit is an essential tool in our search for a poverty-free world”*. This implies that for microcredit to attain the intended results, women business owners need improved access to markets, business skills, information networks and business infrastructure; and institutional support services including favourable tax regimes and licensing procedures among other things.

### **Summary and conclusions**

The objective of this study was to assess the impact of child labour on profitability of women owned microcredit supported enterprises. Our findings showed that indeed the use of child labour had a significant impact on the profitability of women businesses. The results also showed that enterprises that were owned by owners who possessed business skills, who had access to markets and, those who did not separate business resources from household resources were more likely to experience a profit increase in their enterprises than others. Moreover, the results have demonstrated that access to loans did not translate into an enterprise profits increase. From these results, we construe that as a poverty alleviation strategy, microcredit access is not an antidote, but will require other supporting policies and services to help women and the poor to find their way out of poverty in a more sustainable manner. It is also important that employment patterns of microcredit supported enterprises are studied and evaluated accordingly for effective welfare analysis. Also, while poverty is one of the factors for child labour, it is evident that there are other factors contributing to child labour. It is therefore important that careful assessment of the factors causing child labour is undertaken with a view to designing and implementing appropriate microfinance poverty interventions. This also implies that microcredit provision accompanied by other services, such as savings and insurance is more likely to increase the household’s ability to manage risks and other economic shocks.

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**Authors' contributions**

HT reviewed the literature. Data collection was done by Mr. Willian Dossa, whereas data analysis for the study was done by CT. Finally, the authors read, edited and approved the final manuscript.

**Competing interests**

The authors declare that they have no competing interests.

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**Author details**

<sup>1</sup>Faculty of Social Sciences, Mzumbe University, P.O. Box 5, Mzumbe, Morogoro, Tanzania. <sup>2</sup>School of Business, Mzumbe University, P.O. Box 6, Mzumbe, Morogoro, Tanzania.

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