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Effect of Ill Health on Labour Market Earnings in Tanzania: Empirical Evidence

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Abstract

Evidence shows the presence of many ill health cases in Tanzania, which in other countries have been identified as among key factors affecting labour market outcomes. This study examines the effect of ill health on labour market earnings in Tanzania using panel methods and data extracted from the National Panel Survey datasets. The fixed effect models of labour market earnings with chronic and acute ill health conditions were estimated one at a time, and the results suggest that chronic ill health is significant and negative on labour market earnings, while acute ill health is statistically insignificant. The study recommends policies that intensify efforts to improve the health status of the population to increase labour earnings. It also recommends mainstream employment policy actions to support those with partial work capacity from incurable ill health conditions to take up jobs and earn income.

Keywords: *ill health, chronic illness, acute illness, labour market outcomes, labour earnings.*
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1. Introduction

Better health plays a vital role as human capital by improving the strength, endurance, and skills of workers. This leads to higher participation in the labour force, increased productivity and higher earnings (Adhvaryu & Nyshadham, 2011; Bloom & Canning, 2005; Byaro et al., 2023; Ghatak, 2010; Kinyondo & Byaro, 2020). On the other hand, poor health decreases human capital, affecting earnings by causing higher rates of work absenteeism and reduced capacity (Antczak & Miszczyńska, 2021; Corbière et al., 2020; Machio, 2014). Health issues that restrict a worker's job performance negatively impact productivity and income (Rodriguez-Alvarez & Rodriguez-Gutierrez, 2018). Ill health can result in frequent sick leave, extended absences from work, and a higher likelihood of leaving the workforce prematurely (Bryan et al. 2021). The goal of this paper is to study the impact of health problems on wages within this framework.

Several studies have conflicting findings regarding the impact of ill health on labour market earnings. Some studies—including those by Gambin (2005), Mduma and Wobst (2005), Machio (2014), and Lenhart (2019)—suggest a negative relationship between chronic ill health and earnings. Similarly, a study by Rodriguez-Alvarez

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and Rodriguez-Gutierrez (2018) found that workers with ill health earn 6.1% less than their healthier counterparts. Other studies, such as by Matovu et al. (2012), found no significant impact of ill health on wage earnings; while researchers like Machio (2014) and Jones et al. (2016) also reported that acute ill health had an insignificant effect on labour market earnings. However, Jäckle and Himmler (2010) found no statistically significant relationship between health and wages for women, but suggested that healthy men could earn between 1.3% and 7.8% more than those in poor health. On the contrary, Swaminathan and Lillard (2000) found a positive correlation between ill health and wages.

Available evidence shows that developing countries like Tanzania encounter a high burden of ill health cases that cause deaths, injuries, reduced life expectancy and causes disabilities to many people, consequently affecting national labour force participation, and labour market earnings in particular (WHO, 2017; Antczak & Miszczyńska, 2021; MoCDGWSG, 2021). However, only a few studies have examined the linkage between health and labour market earnings in developing countries. In Tanzania, there is only one such study by Mduma and Wobst (2005). However, this study has a narrow coverage as it is limited to rural labour markets only. Also, the study utilized cross-sectional data and methods of estimation. Thus, with this research gap, more empirical studies are required to provide more robust evidence of the effect of ill health status on labour market earnings. In this paper, we analyse the effect of both chronic and acute ill health on labour market earnings in Tanzania using panel methods; with data extracted from three waves of the National Panel Surveys of 2010/11, 2012/13, and the extended panel of 2019/20.

The rest of this paper is organised as follows. Section two provides a general overview of ill health and labour market earnings in Tanzania; section three presents the methodology and empirical strategy; section four presents data and its descriptive statistics; and section five presents results and discussion. Finally, section six presents the conclusion and policy implications.

2. Overview of Ill Health and Labour Market Earnings in Tanzania

2.1 Status of Ill Health in Tanzania

Both chronic and acute illnesses have been among the core problems to development in Tanzania since independence. The Arusha Declaration (1967) advocated three compounding enemies of development; among them included disease, which is a component of ill health. Since then, the government has been making efforts to achieve better health to its people as one of the ways to alleviate poverty. This has been implemented through the provision of education on disease prevention, sanitation and nutrition (MoCDGWSG, 2021). Also, it has been done through the improvement of road safety, prevention of drug abuse and trafficking cases, as well as ensuring that enough resources are directed and effectively utilized towards the provision of better health services (ibid.).

Despite these efforts, Tanzania is still facing a high burden in the health sector due the presence of many diseases, high mortality, malnutrition, harmful use of alcohol, drug abuse, and road traffic accidents (ibid.). For example, 3.8 percent (897 individuals) and 5.4 percent (879 individuals) of the total population studied in the Tanzania National Panel Survey of 2014/15 and 2020/21, respectively, reported to have suffered from both acute and chronic illnesses (URT, 2022). This results in ill health and deaths among the population, which consequently have detrimental effects on the economy, and labour market earnings in particular. Likewise, there was an increase in the burden of non-communicable diseases (NCDs); such as cardiovascular diseases, diabetes, cancer, chronic respiratory diseases, injuries and mental health. These contribute to about a third of all deaths in the country, and are a source of increasing disability in Tanzania (URT, 2021). It was noted that there was an increase in NCD deaths from 27 percent in 2010 to 33 percent in 2016 (URT, 2021). The Tanzania Health Sector Strategic Plans (THSSPs) of 2021 showed that there was a significant increase in TB case notification rates from 128 per 100,000 population in 2015, to 144 per 100,000 population in 2019. However, the proportion of HIV-positive TB cases among the notified declined from 36% in 2015 to 24% in 2019. On the other hand, it was estimated that 1,600,000 people lived with HIV in 2019 (URT, 2021).

2.2 Status of Labour Market Earnings in Tanzania

The labour market earnings in Tanzania have been increasing over time; and vary with the type of occupation, sex, location, and education level. As presented in Table 1, paid employees have the highest mean monthly incomes compared to self-employed all over the years. This can be explained by the fact that paid employees are normally employed in formal sectors which pay higher wages, contrary to self-employed people; where the majority in Tanzania perform elementary activities, operate small enterprises and engage in agriculture which generate low earnings usually for livelihood. Also, in many cases, they do not have good records of their incomes and regular cash flow as those in formal employment.

Table 1: **The Mean Monthly Income by Type of Employment**

Occupation Type	2000/01	2006	2014/15	2020/21
Paid employees	49,954	97,307	308,075	391,471
Self-employed	36,005	75,693	215,541	327,623
Agriculture			131,992	169,375

Sources: (URT, 2015, 2021)

Table 2 illustrates that the mean monthly income in Tanzania is higher for males from all kinds of employment compared to females; and in urban compared to rural areas. This is attributed to the persisting labour market and gender disadvantage between rural and urban areas; where paid employees in urban private sectors are paid higher nominal wages compared to rural areas. On the other hand, women

are paid low wages in informal employment, and spend most of their time performing unpaid domestic activities compared to men (Kabeer, 2021).

Table 2: Average Wage and Salary for Paid Employees by Sex and Location

Area	2014/15			2020/21		
	M	F	T	M	F	T
Rural	231,475	251,484	236,344	327,905	298,066	319,545
Other Urban	331,673	237,990	296,584	416,347	386,405	405,800
DSM	472,623	321,635	418,392	580,004	528,062	560,434
Total	**328,741**	**264,927**	**307,872**	**396,885**	**378,469**	**390,992**

Source: URT (2021)

With education level, those with a university education have the highest mean monthly incomes of TZS1,245,245, TZS821,036 and TZS563,360 for paid-employed job, self-employed, and agriculture, respectively. Those who never attended school marked the lowest mean monthly income of TZS301,487 for paid employees, TZS244,210 for self-employed, and TZS 152,741 from the agricultural sector (URT, 2021).

Therefore, as stated explicitly earlier, there is a presence of many chronic and acute ill health conditions in Tanzania that may prevent many people from participating in the labour market, subsequently affecting their incomes. Also, there is a high variation in the labour market earnings across sectors, localities, education levels, and periods in the country. It is this that inspired us to investigate the impact of poor health on earnings within Tanzania's labour market, aiming to formulate more effective policy measures that can help reduce instances of ill health and foster increased earnings among the workforce in the country.

3. Methodology and Empirical Strategy

3.1 Theoretical Framework

The study adopted the human capital earning model by Mincer and Polachek (1974) as the guiding theoretical framework in the analysis of the effect of ill health on labour market earnings in Tanzania. The model is generally used as the fundamental tool for research in areas of income, earnings and wages both in developed and developing countries (Polachek, 2008; Machio, 2014). To make it relevant to this study, the earning model was modified by the inclusion of health as another form of investment in human capital. Basically, the model relates individual earnings and human capital accumulation such as education in terms of schooling, post-schooling experience, and health. The model is derived as follows:

$$E_t = E_{t-1} + rC_{t-1} \qquad (1)$$

Where, E_t and E_{t-1} denote earnings at time t and $t-1$; r is the average returns of one's investment in human capital, which is assumed to be fixed for each period; and C_{t-1} is the dollar amount of net investment at period $t-11$.

Since it is difficult to get the actual amount of dollar investment in human capital (C_{t-1}), it is then expressed as a ratio of investment in human capital to earnings at time t, such that $K_t = C_t/E_t$. Thus $C_t = K_t\, E_t$, implying that if $t = 0$, then $C_0 = K_0\, E_0$; and if $t = 1$, then $C_1 = K_1\, E_1$.

Then equation (1) can be written as:

$$E_t = E_{t-1}(1 + rk_{t-1}) \qquad (2)$$

For period 1, 2, 3 and $t-1$, equation (2) will be:

$$E_t = E_0(1 + rk_0)\,(1 + rk_1)\,(1 + rk_2)\,\ldots\ldots\,(1 + rk_{t-1}) \qquad (3)$$

As rk is a small fraction, $ln(1 + rk)$ is approximately equals rk. Therefore, by applying natural logarithm to equation (3) yields:

$$lnE_t = lnE_0 + r\sum_{i=0}^{t-1} k_i \qquad (4)$$

If investment occurs in terms of schooling (k_i) and post-schooling (k_j), then k terms can be separated into twofolds as:

$$lnE_t = lnE_0 + r\sum_{i=0}^{s-1} k_i + r\sum_{s=j}^{t-1} k_j \qquad (5)$$

Since investment in health is one of the forms of human capital accumulations, then k_h is added to k terms to include health as in equation (6):

$$lnE_t = lnE_0 + r\sum_{i=0}^{s-1} k_i + r\sum_{s=j}^{t-1} k_j + r\sum_{h=n}^{t-1} k_h \qquad (6)$$

Therefore equation (6) can be generally written as:

$$lnE_t = lnE_0 + r_s S + r_p \int_0^t k_j\, d_j + r_h \int_0^t k_h\, d_n \qquad (7)$$

Where r_s, r_p and r_h stand for the rate of returns to schooling, post-school experience, and investment in health, respectively.

The return on health is expressed as ongoing lifetime process, whereas experience is expressed as a post-schooling ongoing process. Equations (6) or (7) indicates that

investing in human capital through schooling, developing work experience after school, and better health: all result into increased earnings. This indicates that increasing stock of better health increases one's earnings; while ill health or decreased stock of health lowers it. Therefore, in relation to this study, it is expected that ill health status will negatively affects labour market earnings in Tanzania.

3.2 Empirical Strategy and Model Specification

The effects of ill health on wages were estimated using a wage model based on Mincer (1974). However, we estimate the model in a panel framework. Therefore, the Hausman specification test was performed to check the presence of a non-zero correlation between regressors and unobserved effects to select the appropriate panel methods for estimating earning models. In doing so, the results confirmed the presence of non-zero correlation, thus the fixed effect method was selected as the appropriate estimator for this study. In relation to the underlying theoretical framework, the fixed effect model of earnings is specified in log-linear as:

$$lnE_{it} = \beta_0 + \beta_1 Ih_{it} + \beta_2 A_{it} + \beta_3 A^2{}_{it} + \beta_4 Lh_{it} + \beta_5 L_{it} + \beta_6 Educ_{it} + \beta_7 Ln_{it} + \beta_8 SE_{it} + \beta_9 Hs_{it} + \beta_{10} Ms_{it} + \mu_{it} \quad (9)$$

Where E is the outcome variable labour market earnings in natural logarithm; Ih is ill health status, both chronic and acute; A is age and A^2 age squared; Lh denotes labour hours; L is location; $Educ$ is education levels, Ln is amount of loan borrowed; SE is sector of employment; Hs is household size; Ms is marital status; and μ is the error term for individual i all at time t.

3.3 Key Variables

3.3.1 Ill Health Status

Ill health status in this study entails the presence of illness or other health limitations, both chronic and acute, that could affect labour market outcomes. Chronic ill health is assigned to individuals who reported long-term health problems, including disabilities and diseases such as lungs and heart diseases, TB, broken bones, HIV/AIDs, cancer and others. Acute ill health is assigned to individuals who reported injuries, headache, fever, diarrhoea, malaria, stomach-aches, maternity diseases for women, and other short-term ill health conditions. Two dummies were created to capture chronic and acute ill health; with a value of '1' if reported chronic or acute ill health, and '0' otherwise. The negative effect of ill health on labour earnings is expected as it reduces work capacity, makes an ill person unfit for job conditions and/or less competitive in the labour market. Also, ill health affects work preference and time horizon (Bloom & Canning, 2005; Dwyer & Mitchell, 1999; Machio, 2014), which reduces the likelihood of participating in the labour market, and may in turn results into low earnings.

3.3.2 Labour Market Earnings

Earnings in this study include wages and other forms of earnings in Tanzanian shillings received from various paid activities and self-employments performed

during the last 12 months expressed in log-linear ($\ln E_{it}$). It is a continuous variable that reports the amount a respondent earned in a year that is calculated by multiplying the amount received by the payment intervals; which are hourly, daily, weekly, monthly, half-yearly, and yearly. The year products of each source earnings were added together to obtain the overall labour market earnings of each individual.

4. Data and Its Descriptive Statistics

4.1 Data Descriptions

The study used panel data extracted from the Tanzania National Panel Surveys (NPSs) wave two (2010/11), three (2012/13), and the extended national panel of 2019/2020 capturing the latest information on health and labour markets in the country. The NPSs are conducted by the National Bureau of Statistics (NBS) to collect essential information on various topics, including many health and labour market outcome indicators. The data are collected for tracking welfare transitions in Tanzania; as well as for use in planning, policy formulation processes and assessment of the progress and achievement of various national policies and initiatives.

In this study, we targeted an economically active population who are individuals aged between 15 and 64 years. The sample size for this study was drawn from the original NPS datasets, which used stratified and clustered random sampling techniques to obtain the overall sample size proportional to the cluster size across Tanzania. After appending all three waves of national panel survey datasets, we obtained balanced panel data with a total of 3,120 observations for this analysis. Also, the study utilised only three out of five waves of the National Panel Surveys due to inconsistency in National Panel Surveys and the data itself: for example, the fourth wave of 2014/2015 is an independent version which traced different individuals and thus cannot be merged with other waves. Also, the first wave of 2008/09 is missing some relevant information on health and labour status, making it unsuitable for this study.

4.2 Descriptive Statistics

Table 3 jointly presents the summary statistics for the panel and each wave of the longitudinal data used in the study. The summary statistics in the Table indicate that individuals suffered more from chronic ill health compared to acute ill health; of which the prevalence of chronic ill health condition on average was 9.13%, and that of acute ill health was 5.96%. These percentages of the prevalence of both chronic and acute ill health in Tanzania explain or determine the effect of ill health on labour earnings in the country.

The average labour market earning in Tanzania was TZS1,830,000 per year, and those who actively engaged in the labour market worked for an average of 1,435 hours per year. The labour participation rate with the main occupation indicates that the majority in Tanzania were engaged in agricultural activities (52.9%), followed by elementary activities (25.2%). Additionally, the smallest rate of labour

participation by activity was observed in the government sector (4.3%) and private sector (12.6%); with increasing participation in the private sector, and decreasing in the government sector all over time. This can reflect the current situation in the country where the government does not employ as many people as in the previous years; and that now the majority of graduates who are not absorbed in the public and private sector employment decide to join elementary activities.

Table 3: Descriptive Statistics

VARIABLES	PANEL SUMMARY				
	Obs	*Mean*	*Sd*	*Max*	*Min*
Chronic ill health	3,120	0.0913	0.288	1	0
Acute ill health	3,120	0.0596	0.237	1	0
Earnings (TZS "000")	3,120	1,830	10,680	336,500	0
Age	3,120	36.02	11.59	64	15
Sex (male=1)	3,119	0.459	0.498	1	0
Location (rural=1)	3,120	0.622	0.485	1	0
Marital status (married=1)	3,120	0.679	0.467	1	0
Household size	3,120	6.111	3.411	33	1
Labour supply (hours)	3,120	1,435	1,363	8064	0
Employment sector					
Agriculture	3,120	0.529	0.499	1	0
Government	3,120	0.043	0.203	1	0
Private	3,120	0.126	0.332	1	0
Elementary	3,120	0.252	0.434	1	0
Education levels					
No education	3,120	0.142	0.349	1	0
Primary	3,120	0.664	0.472	1	0
Secondary	3,120	0.173	0.379	1	0
Tertiary	3,120	0.021	0.143	1	0

Source: Author's computation based on data extracted from NPS

The average—as well as the minimum and maximum ages—of the study population was 36, 15, and 64 years, respectively. This justifies that all respondents were economically active, and thus relevant respondents had been selected for this study. Regarding the sex structure, there were more females in the study population than males: on average females accounted for 54.1% of the total observation, while males accounted for 45.9%. With locality, the majority were living in rural areas (62.2%), and had primary education (66.4%). The marital status indicates that the majority were married (67.9%). On average, the household size of the study population was 6 members; where the largest household had a maximum of 33 members, and the lowest had 1 member.

5. Empirical Results and Discussion

Prior to the estimation of causal effects of ill health on labour market earnings in Tanzania, the Hausman specification test was performed; and result suggested for the fixed effect estimation as the appropriate method for the study. This is because

the p-values for both models with chronic and acute ill health were less than 0.05 significance levels. Thus the null hypothesis was rejected, and it was the justification against random effects. Thereafter, the two fixed effects models of earnings with control variables were estimated separately: first, with chronic ill health; and then later with acute ill health. The results are presented in Table 4, where the coefficients of fixed effects regression results of earning models with chronic and acute ill health are in columns 1 and 2, respectively.

Table 4: **The Fixed Effects Regression Results for Earnings Model**

Independent Variables	**(1)**	**(2)**
Chronic ill health	-0.312*	
	(0.177)	
Acute ill health		0.0308
		(0.161)
Age	-0.00784	-0.00523
	(0.0568)	(0.0566)
Age^2	-0.00257	-0.00250
	(0.00444)	(0.00447)
Labour supplied (hours)	0.0209***	0.0211***
	(0.00441)	(0.00442)
Location (rural=1)	0.125	0.119
	(0.139)	(0.138)
Loan amount (TZS)	0.000569***	0.000551***
	(0.00214)	(0.00212)
Household size	-0.0200	-0.0183
	(0.0178)	(0.0178)
Marital status (married=1)	0.164	0.156
	(0.115)	(0.115)
Occupation		
Agriculture	-0.502***	-0.492***
	(0.142)	(0.142)
Government	1.302***	1.306***
	(0.286)	(0.287)
Private	0.459***	0.465***
	(0.126)	(0.126)
Education levels		
Primary	-0.218	-0.186
	(0.276)	(0.277)
Secondary	-0.333	-0.301
	(0.341)	(0.342)
Tertiary	0.103	-0.0675
	(0.421)	(0.430)
Time fixed effects		
2012	0.244**	0.236**
	(0.111)	(0.111)
2019	0.637*	0.623*
	(0.358)	(0.357)
_cons	12.92***	12.75***

	(1.591)	(1.587)
N	2464	2464

Note: Standard errors in parentheses *** p<0.10, ** p<0.050, *** p<0.010**

Source: Author's computation based on data extracted from NPS

The results suggest that acute ill health status is statistically insignificant in determining labour market earnings in Tanzania. However, chronic ill health is found to be significant and negative at a 10% level; implying that being chronically ill in Tanzania results in a reduction in labour market earnings by 31.2%. The difference in the effects between chronic and acute ill health conditions on labour market earnings can be explained by the fact that chronic ill health lasts for a long time, which puts chronically ill persons off work for a long period, hence strongly affecting their earnings compared to acutely ill persons who recover relatively in a short period (Machio, 2014; Mwabu, 2007).

The findings of this study support the underlying theory, initial expectations, and the findings of other comparable studies, despite variations observed in a few control variables. They are in line with the study by Mduma and Wobst (2005), who found that sickness affects casual labour wages in Tanzania at a 10% significance level. Also, the findings support the results of Gambin (2005), Lenhart (2019) and Machio (2014). Gambin (2005) found that chronic illnesses have a more significant negative effect on wage earnings of both men and women in Europe; and Machio (2014) found that chronic ill health has a significant negative effect on wage earnings in Kenya, while acute ill health was statistically insignificant. On the other hand, Lenhart (2019) found that severe ill health results into a significant and persistent negative effect on earnings in the UK. Moreover, the study findings also support those of Jones et al. (2016), who found that acute illnesses have no significant effect on hourly earnings in the UK.

Labour supply is found significant and positive on earnings in Tanzania, whereby working more by an hour results in an increase in earnings by 2.1%. This finding supports Bhattarai and Wisniewski (2017), who found that working more hours results in a significant increase in earnings. This can be explained by the fact that, in activities like own-business, agriculture, casual labour, employment with overtime, as well as other activities in which their payment is per piece of work completed, people earn more with an extra amount of labour supplied.

Furthermore, borrowing is found positive and statistically significant in influencing earnings, whereby an increase in borrowing by TZS1 results in an increase in earnings by 0.0569% in Tanzania. This is consistent with the findings by Mduma and Wobst (2005), who found that credit borrowed from banks resulted in increased labour earnings in Tanzania. This result can be due to the fact that access to loans enables an individual or firm to expand investment or start a new business, which may result in increased production and/or sales, and in turn a significant increase in earnings.

Occupation is found to have a significant effect on labour market earnings in Tanzania as found by Islam et al. (2015). Agriculture is significant and negative on earnings: those engaged in agriculture as their main economic activity earn 50.2 percent less than those engaged in elementary activities. This may imply that many people do agriculture mainly for subsistence, and less for commercial purposes; while elementary activities are typically commercial ones. Also, on the other hand, it may reflect the low prices of agricultural products in the country. These two factors make farmers receive, on average, little or no cash flows at all from agriculture compared to elementary activities. Furthermore, the study finds that those working in the government and private sector earn 130.2% and 45.9%, respectively, relatively more than those engaged in elementary activities.

Education level is insignificant in influencing labour earnings in Tanzania. This is against the theory and expectations as those with higher education were expected to have higher earnings. However, this finding can be because the study included earnings from various activities performed in the labour market, such as paid employment from public and private sectors, own businesses, paid family activities, agriculture, politics and elementary activities. Thus, earning higher in this context does not necessarily require higher education because even those with low education can join the labour market similar as those with higher education; and those with high innate ability can generate earnings even higher than the educated. This result supports the findings by Baffour (2013), who found that while education in Tanzania plays a vital role in accessing employment in formal sectors, it has no direct effect on earnings.

6. Conclusion and Policy Implication

This study examined the effect of ill health status on labour market earnings in Tanzania by utilising panel methods and data extracted from three waves of the national panel surveys of 2010/11, 2012/13, and the extended panel of 2019/2020. The fixed effect models of earnings were estimated: first with chronic ill health, and then second with acute ill health, to analyse the causal effect of ill health status on labour market earnings in the country. The results revealed that chronic ill health has a significant negative effect on labour market earnings in Tanzania at a 10% level, whereas acute illnesses were found statistically insignificant.

The significant negative effect of chronic ill health found on labour market earnings in Tanzania implies that diseases and other health challenges that are long-lasting negatively affect labour market earnings. Since the majority of Tanzanians rely on labour market earnings, reduced earnings have implications for the poverty levels of those in chronic ill health. For example, an ill-health person with low income may face the challenge of meeting costs associated with health care, and it may worsen one's standard of living. Hence, the government's effort towards the achievement of sustainable economic growth will not be realized if health problems and factors associated with illness are not addressed. Therefore, the government of Tanzania needs to intensify its efforts to improve the health status of the population. This can be achieved mainly by investing in the management of chronic illnesses through the

provision of subsidized medication and awareness creation on the availability of such medication. Also, the study recommends mainstream employment policy actions such as enabling a work environment to support those with partial work capacity caused by incurable ill health conditions to take up jobs and earn income.

Moreover, the current study observed only the effect of ill health status on labour market earnings in Tanzania, but it has not addressed labour productivity. Also, the study did not cover the effects of disaggregated components of ill health like specific diseases and disabilities. Therefore, future studies can examine the effect of ill health status on labour outcomes considering disaggregated components of ill health such as specific types of diseases and illnesses like HIV/AIDS, disabilities and diabetes. Also, future studies should focus on analysing the effect of ill health status on labour productivity.

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