Financing employee healthcare: fusing the preferences of employees in decision-making

George Ouma Ochieng'a and Maurice Ogada
Taita Taveta University, Voi, Kenya

Received 11 January 2021
Revised 20 April 2021
Accepted 2 June 2021

Abstract

Purpose – Good health is important for the happiness and productivity of employees of any organization and a nation. With the declining government funding for public Universities in Kenya, providing health cover for employees is a real challenge. Thus, the universities have to explore widely acceptable and sustainable options. This study aims to explore the correlations of employee preferences for health care schemes and evaluated the cost implications of each of the available Schemes.

Design/methodology/approach – The study applied a multinomial probit analysis on cross-sectional data from Taita Taveta University (TTU) in Kenya's coastal region. Cost-benefit analysis was used to rank alternative healthcare schemes. For triangulation of information, individual interviews were supplemented with key informant interviews.

Findings – Two sets of factors, personal attributes of employees and the attributes of the health care provider, were found to drive employee preferences for health care schemes. Thus, the universities need to consider these attributes in their choice sets of health care schemes to gain employee support.

Research limitations/implications – The study was based on a cross-sectional survey that may not capture the dynamic elements in institutional management. Thus, future research may build panel data on the current one for further analysis.

Practical implications – The study found that household characteristics and the perceived attributes of the healthcare providers are key drivers of the preferences. Thus, it is important to consider the characteristics of the employees (for example, age, family sizes, etc.) and attributes of healthcare providers before selecting a healthcare scheme for the workers

Originality/value – This is a pioneer study on the choice of healthcare scheme for institutions of higher learning in Kenya. Universities are made aware of what informs employee's preferences for health schemes. This is important for tailoring health care schemes to match employee preferences for greater satisfaction.

Keywords Healthcare schemes, Employees preference, Cost-benefit analysis, Decision-making, Kenya

Paper type Research paper

Introduction

Quality of healthcare is correlated with the quality of life of the people (Kuunibe and Dary, 2012). A healthy population is more productive (Gaddah *et al.*, 2015). Thus, access to quality healthcare must be facilitated by countries and organisations that desire to improve their productivity (Kouadio *et al.*, 2008; Kamgnia, 2008). Thus, a good healthcare system should be developed gradually in line with the growing health needs of the nation (Weizhen, 2003). Healthcare system must ensure greater access, effective coverage, quality and safety of services for the people (WHO, 2007).

The strategic focus of the health sector in Kenya is premised on Vision 2030, which aims at transforming the country into a globally competitive and prosperous country, where citizens enjoy a high quality of life by the year 2030. The actions of the sector are grounded in the 2010 Constitution, which provides for the right to health and devolution of health services management. The Kenya Health Policy (2012–2030) has a goal of attaining the highest possible health standards in a manner responsive to the needs of the population through support to provision of equitable, affordable and quality health and related services at the highest achievable standards for all Kenyans. This is in recognition of the fact that a healthy population is pivotal for increasing productivity and enhancing faster economic growth (Gaddah *et al.*, 2015).

International Journal of Workplace Health Management

1753-8351
DOI 10.1108/IJWHM-01-2021-0010

Health in Kenya is funded by three main sources: government allocation through the budget, which constitutes about 30% of the annual expenditure in healthcare and is the main source of funding for about 80% of the population that relies on services from the public sector; private expenditure funded mainly through a company or employee insurance schemes, which constitutes about 36% of the annual healthcare expenditure and covers 20% of the population and donor funding, which is mainly directed towards fighting malaria, HIV and tuberculosis. This directly supplements public sector funds and constitutes 30% of annual healthcare expenditure (Barasa *et al.*, 2018). The purchase of healthcare in the country has been through either supply-side subsidies to public facilities by national or county governments, the National Hospital Insurance Fund (NHIF), which contracts public or private health service providers and pays for services delivered to registered members or private health insurance companies which contract private health care providers and pay for services provided to their policyholders.

For organisations, the provision of health benefits goes beyond meeting national aspirations. It is seen as a critical component of employee satisfaction, which is at the core of the corporate objective (Alfes *et al.*, 2013). Every organisation wants to have the best human resource to gain a competitive advantage, and this is only possible with a satisfied workforce (Fuchs *et al.*, 2016). Such a workforce is happy and able to exert effort towards achieving the objectives of the organisation. Among the critical factors that lead to employee dissatisfaction are poor benefits, salaries and failure to engage the employees in decisions that affect them (Ashkanasy and Dorris, 2017). With the increasing disease burden, the medical scheme is perhaps the most important employee benefit and ingredient of employee satisfaction in Kenya today. Without a good medical scheme, an organisation is more likely to lose its best staff to its competitors. Even if the staff are not lost, they could be too demotivated to be effective in pursuing the organisational objectives.

Institutions of higher learning are aligning their programs with Kenya Vision 2030, the Sustainable Development Goals and the Big Four Agenda. As such, they are not left out of this pressure of ensuring quality healthcare to their employees. However, they have varied medical policies for their staff.

Universities have traditionally had four types of healthcare schemes for their staff.

(1) A university health unit to treat staff and their dependants.

(2) A referral system to private hospitals with which the universities have contracts.

(3) A medical insurance scheme.

(4) And, a combination of (1) and (2).

Previously, universities have taken administrative decisions on the kind of medical schemes to provide to their members. This is no longer tenable with shrinking funding from government and alternative funding sources. More importantly, the constitution of Kenya 2010 demands that stakeholders be involved in all decisions that affect them. Thus, it is imperative that universities consider what would inform their employees' preferences for alternative healthcare schemes. Elsewhere, such preferences have been found to influenced by characteristics of the service/scheme provider such as perceived competence, the effectiveness of therapy, quality of care, access to a provider and cost (Dey and Mishra, 2014; Abiodun and Olu-Abiodun, 2014), and employee characteristics such age, household size, income, education and residence (Kiplagat *et al.*, 2013).

Because the universities are operating within binding financial constraints, it is important to balance employee preference with the costs and benefits of the alternative healthcare schemes. This is what the study explored using data from Taita Taveta University, a young

university whose budget on staff medical scheme has been rapidly burgeoning, as illustrated in the table below (see Table 1).

Budgets to universities have been decreasing in recent years. These budget cuts have had negative ramifications for universities in the region (Mutula, 2001), making it a serious cause of concern to the public, students and academics. These cuts hinder the universities from meeting their obligations including paying for healthcare services (Obwogi, 2019). It is, therefore, important to focus on healthcare policy formulation and implementation and to determine factors affecting such decisions.

The findings of this research are important in a number of ways. Foremost, universities are made aware of what informs the preferences of the employees for healthcare schemes. This is important for tailoring health care schemes to match employee preferences for greater satisfaction. For the unions, the findings are important for collective bargaining agreement (CBA) negotiations. The scheme providers, on their part, may use these findings to structure their products for wider acceptability among university employees.

Literature review

In general, the health of a country and that of employees have a financial impact on everyone (Marshall, 2020). A decrease in employees' absenteeism due to sickness will result in a financial saving for the organization. In recent years, there has been a renewed focus on healthcare management for corporations, for employees and their families (Smith *et al.*, 2017). This has been caused by an unhealthy lifestyle and chronic illnesses in the USA and many other countries in the world. According to Marshall (2020), an employee's overall mindset increases by staying healthy, leading to greater job satisfaction.

Organizations stand to benefit from increased productivity, improved working environment, savings due to reduced absenteeism and compensations by providing healthcare to their employees (Rickards and Putnam, 2012). Healthcare usage by employees is determined by ease of access to care, availability of service provider and treatment options (Moehrle, 2015). The usage normally covers regular check-ups, inpatient and outpatient visits and the cost of medicines.

The participatory theory developed by Sherry Arnstein in 1969 encourages the participation of employees in decision-making on matters affecting them. Due to escalating healthcare costs, management and unions have to be involved in making decisions on employees' healthcare (Marshall, 2020). The participation by unions in workplace healthcare through collective bargaining agreements ensures that employees access generous healthcare plans, improve healthcare management and also curb the rising healthcare costs (Rickards and Putnam, 2012: Marshall, 2020).

Hooda (2015) observed that lack of health insurance increased the financial burden on employees and the country. In India, 80% of individual savings was used on healthcare. Individuals also used borrowings as a means to finance healthcare costs. Lack of health insurance was characterized by a weak delivery system, lack of drugs and poor healthcare quality. This has led to exploitation in the health market by the private sector (Hooda, 2015). The uninsured are at risk of a poverty trap should they become sick (Ying and Du, 2012), exposing them to both health and financial risks.

Financial year	Expenditure name	Budgeted amount	Actual expenditure
2015/2016	Medical Exp. In-patient/Out-patience	7,500,000.00	8,820,639.00
2016/2017	Medical Exp. In-patient/Out-patient	7,500,000.00	9,652,386.00
2017/2018	Medical Exp. In-patient/Out-patient	8,800,000.00	10,416,456.00

Table 1.
Budgeted vs actual healthcare expenditure

Previous studies have found that the choice of a healthcare provider may be driven by the season and severity of illnesses, which tend to drive both direct and indirect costs (Su and Flessa, 2013). Elsewhere, the quality of service and price charged on the services influenced patient satisfaction and the choice of a healthcare provider (Pantouvakis and Bouranta, 2014). Other factors that may be important in determining the choice of health care provider are lifestyle, environment, income, age, education and genetic (Henderson, 2005).

Perception of quality of service, promptness of services, the effectiveness of therapy and the perception of competence of health staff significantly determined the choice of healthcare (Abodunrin *et al.*, 2010). According to Ha *et al.* (2002), income, age and the number of sick individuals within the household affected the choice of a household healthcare facility. Rising healthcare costs have forced researchers and policymakers to focus on reasonable and effective methods of costs control on healthcare budget allocations (Baltussen and Niessen, 2006). The consequences of healthcare budget shortfall include staff shortages, poor maintenance of equipment, transport and other amenities (Muga *et al.*, 2005).

The formulation of healthcare policies must, therefore, encourage savings and generate income for the institutions (Mutula, 2001). Decision-makers use three main economic models to determine the viability of healthcare schemes. These are cost-benefit, cost-effectiveness and cost-utility analyses (Powers and Faden, 2006). They enable ranking of the potential alternatives by evaluation to produce a favourable policy. The degree of incorporation of economics into resource allocation decision is dependent on the transparency and clarity of both the economic evidence and the decision-making process (Niessen *et al.*, 2012).

In these previous studies, the focus was on government interventions rather than organizations. Hence, the cost-benefit analysis of a single unit will give a clear picture of the effectiveness of each health care intervention/policy. Most researchers analysed how individuals and/or households make healthcare decisions (Su and Flessa, 2013: Pantouvakis and Bouranta, 2014: Abodunrin *et al.*, 2010). Little literature was available on how employees' preference of healthcare providers and how these preferences impacted the choice of healthcare scheme for the Institutions.

In the rest of the paper, we discuss the methodology used (Section 2), data and the summary statistics (Section 3), results and discussion (Section 4) and recommendations and policy implications (Section 5).

Methodology

According to Grossman (1972), healthcare and other activities compete for financing by an individual's limited resources. It implies, therefore, that human beings desire health since it generates utilities. Hence, health has a direct and positive utility function of employee welfare. The theory also suggests that health is human capital (Zheng and Lu, 2020). With good health, employees will have more sick free days, therefore, available for work. Thus, given alternative schemes, an employee will choose a scheme that yields the highest utility in terms of better service provision, access and affordability.

For the university staff, three healthcare scheme options are available: Health insurance, referral system and university health unit. The ideal approach to analyse such outcomes would be multinomial logit (MNL), subject to IIA assumption being met. In our case, the IIA test failed. Therefore, MNL could not be applicable. To overcome the problem, we used multinomial probit (MNP). The model is expressed as follows: $y_{ij}^{*} = X_i'\beta_i + e_{ij}$, where e_{ij} follows a multivariate normal distribution and are correlated across choices. Because employees are rational and maximizing their gains from the health care schemes, category j is chosen when and only when y_{ij}^{*} is highest for j. That is:

$$y_i = j \text{ if } y_{ij}^* = \begin{cases} j \text{ if } y_{ij}^* = \text{Max}\left(y_{i1}^*, y_{i2}^*, \ldots y_{iM}^*\right) \\ 0 \text{ otherwise} \end{cases}$$

Coefficients of MNP cannot be interpreted directly. Thus, we computed marginal effects as follows:

$$P(y_i = j|x_i) = P\left(y_{ij}^* > y_{i1}^*, \ \ldots, \ y_{ij}^* > y_{i(j-1)}^*, y_{ij}^* > y_{i(j+1)}^*, \ \ldots, y_{ij}^* > y_{iM}^*\right)$$

In the second step, we undertake the CBA of the alternative healthcare schemes. When the net benefits of a healthcare scheme outweigh costs, then it is considered worthwhile. The benefit-cost ratio (BCR) is computed as follows:

$$\text{BCR} = \frac{\text{Benefits}_{\text{Netdiscounted}}}{\text{Costs}_{\text{Netdiscounted}}}$$

The BCR enable ranking of the alternative healthcare schemes. The use of the CBA is advantageous due to the use of monetary value as the unit of analysis. The monetary value is acceptable to all decision-makers, policymakers and the stakeholders.

Data and summary statistics

The stratified random sampling technique was used to collect data from a sample of 146 employees of Taita Taveta University. This technique was used because the population at TTU consists of staff in different cadres and departments and unions, which are similar in public and private institutions of higher learning in Kenya. Stratified sampling divided the population into subgroups, defined the number of subgroups using the sample size and then combined the results to obtain the required sample.

The formula for computing the sample size is as follows:

$$n = \frac{\left(Z^2.P.q\right) + \ \alpha^2}{\alpha^2 + \frac{\left(Z^2.P.q\right)}{N}}$$

where Z is Z score (1.96)

P is the estimated variance (0.5)

q is $1 - P$ (0.5)

α is the margin of error (0.05%)

n is the sample size

N is the total population

Table 2 shows how the sample size was derived; it breaks down the population, sample size and respondents at TTU per department.

Semi-structured questionnaires were used to collect data. The questionnaires were validated by two external experts within the healthcare sector and got a concurrence. A pilot test and test-retest reliability were done on four employees in different departments, union affiliation and management levels who did not form part of the actual interview. Qualitative questionnaires were preferred because they provided room for respondents to openly and freely express their views without limitations.

Summary statistics is shown in Table 3. These are the demographic characteristics of the respondents summarized in percentages and include gender, marital status, job category, other incomes, residence and job grade.

Results and Discussion

Personal attributes affecting the choice of a healthcare scheme

Taking health insurance as the base category, we analysed the personal attributes of employees using the multinomial probit as per the results in Table 4. The regression results show the attributes that significantly affect the choice of healthcare schemes by the employee. These attributes are denoted by * and **, indicating significance levels at 10% and 5%, respectively. To compute the marginal effects, we ran the regression test, as shown in Table 5, since the coefficients of the results in Table 4 could not be interpreted directly.

The results in the regression Table 5 show that employees' alternative income sources significantly affect their preferences for a healthcare scheme. Those without other sources of

Table 2. Population and sample size

Department	Target population	Sample size	No. of employees interviewed
Central services	46	28	28
Administration	61	38	37
Academics	80	50	48
Student affairs	55	33	33
Total	*242*	*149*	*146*

Table 3. Demographic characteristics of respondents ($N = 146$)

Variable	Percentage (%)
Gender	
Female	46.58
Male	53.42
Marital status	
Single	23.29
Married	73.29
Divorced	0.68
Widowed	1.37
Never Married	1.37
Job Category	
Academic	27.40
Non-academic	72.60
Other incomes	
Crop farming	27.40
Animal Husbandry	7.53
Business	50.00
None	15.07
Residence	
Voi	76.71
Others	23.29
Job grade	
1–4	34.93
5–10	39.73
11–15	25.34

Preferred medical scheme		Coefficient	St.err	Sig
Health insurance	*(Base category)*			
Referral hospitals				
Gender	Female	0.000		
	Male	−0.427	0.414	
Marital status	Single	0.000		
	Married	−0.779	0.535	
Other incomes	Crop farming	0.000		
	Animal husbandry	−0.737	0.821	
	Business	−0.359	0.476	
	None	−1.420	0.665	**
Age		0.065	0.034	*
Family size		−0.010	0.125	
Job category	Academic	0.000		
	Non-Academic	−0.364	1.026	
No. of years at work		−0.146	0.081	*
Department	Central Services	0.000		
	Administration	0.976	0.634	
	Academics	0.651	0.802	
	Student Affairs	0.260	0.612	
Job grade	1–4	0.000		
	5–10	0.226	0.445	
	11–14	−2.074	1.015	**
Service rating	Poor	0.000		
	Fair	1.056	0.713	
	Good	0.806	0.666	
	Do not know	0.757	0.783	
Duration of refunds	One month	0.000		
	Over one month	−1.119	0.447	**
Out of pocket medical expenditure		0.000	0.000	**
No. of visits to hospital		0.122	0.067	*
Choice freedom	No choice	0.000		
	Little choice	−1.301	0.674	*
	Some choice	−1.108	0.715	
	Great deal	−0.362	0.819	
Constant		0.577	1.904	
Enhanced university health unit				
Gender	Female	0.000		
	Male	−0.353	0.503	
Marital status	Single	0.000		
	Married	0.080	0.675	
Other incomes	Crop Farming	0.000		
	Animal Husbandry	0.067	0.901	
	Business	0.315	0.588	
	None	−0.394	0.800	
Age		0.071	0.044	
Family size		0.154	0.147	
Job category	Academic	0.000		
	Non-academic	−0.800	1.216	
No. of years at work		−0.109	0.091	
Department	Central services	0.000		
	Administration	−0.469	0.736	
	Academics	−0.238	0.973	
	Student affairs	−1.086	0.748	

(*continued*)

Table 4.
Multinomial probit regression results

Preferred medical scheme		Coefficient	St.err	Sig
Job grade	1–4	0.000		
	5–10	1.371	0.568	**
	11–14	−1.785	1.192	
Service rating	Poor	0.000		
	Fair	1.678	0.870	*
	Good	1.557	0.843	*
	Don't know	1.467	0.948	
Duration of refunds	One month	0.000		
	Over one month	−0.101	0.580	
Out of pocket medical expenditure		0.000	0.000	
No. of visits to hospital		−0.094	0.097	
Choice freedom	No choice	0.000		
	Little choice	−1.353	0.762	*
	Some choice	−1.742	0.859	**
	Great deal	−1.017	0.948	
Constant		−2.490	2.266	
Mean dependent variables	0.712			
Number of jobs		146.000		
Prob > χ^2		0.534		

Table 4.

Note(s): Standard errors in parentheses; *, ** significant at 10% and 5%, respectively

incomes were 23.7% more likely to choose health insurance as opposed to any other alternative than those in crop farming. Those doing animal husbandry and business were 10.3% and 3% more likely to choose health insurance, respectively, than those doing crop farming. Health insurance was ranked highest, followed by referral hospital and finally the improved university health unit. This is in concurrence with studies done by Dey and Mishra (2014) and Gaddah *et al.* (2015).

Employee age was also an important factor in explaining the preferences for healthcare policies. The study found out that a unit increase in age resulted in a 1.5% less likelihood of choosing health insurance; the elderly employees preferring the referral hospitals to health insurance and university health unit. Kiplagat *et al.* (2013) and Dey and Mishra (2014) also found that age was a determinant of a choice for a healthcare provider. A unit increase in the number of years an employee has taken in the organization resulted in a 3% more likelihood of choosing health insurance over referrals and university health units.

Job grades also affected employee preference for healthcare schemes. Employees in job grades 11–14 were 40% more likely to choose health insurance over the other two than those in grade 1–4. Those in grades 5–10 were 12% less likely to choose health insurance as compared to referral hospitals and health units than those in grade 1–4. Halasal and Nandakumar (2009) found that social status and class was a major determinant on the choice of healthcare providers in Jordan. A similar observation was made by Dey and Mishra (2014) in determining healthcare service utilization in India.

The duration of out-of pocket medical expenditure refund to employees also affected their preferences with those who felt that the refunds that took over one month had a 17.4% likelihood preference for health insurance compared to the other alternatives than those who felt the refunds took less than a month. The longer the period for a refund, the higher the likelyhood to choose health insurance.

In analyzing the determinants of healthcare choices, Dey and Mishra (2014) and Abiodun and Olu-Abiodun (2014) found out that quality of service was a major determinate for individual preferences. The results of this study supported their assertion. The quality of service affected employees' preference. Health insurance was negatively affected by the

	dy/dx	Std. err	Delta-method t	$p > t$
Gender				
Male	0.091	0.083	1.090	0.276
Marital status				
Married	0.110	0.103	1.060	0.288
Other incomes				
Animal Husbandry	0.103	0.162	0.640	0.525
Business	0.029	0.094	0.310	0.757
None	0.237	0.126	1.870	0.061
Age	−0.015	0.007	−2.200	0.028
Number of people in family	−0.011	0.025	−0.450	0.650
Job category				
Non-academic	0.115	0.195	0.590	0.554
Years at work	0.030	0.016	1.900	0.058
Department				
Administration	−0.086	0.126	−0.680	0.496
Academics	−0.055	0.163	−0.340	0.736
Student affairs	0.065	0.124	0.530	0.599
Job grade				
5–10	−0.124	0.081	−1.530	0.126
11–14	0.401	0.134	2.990	0.003
Service rating				
Fair	−0.274	0.129	−2.130	0.033
Good	−0.229	0.124	−1.850	0.065
Don't know	−0.214	0.150	−1.430	0.152
Duration of refund				
Over one month	0.174	0.083	2.100	0.036
UOP medical expenditure	0.000	0.000	2.050	0.040
No of visits to hospital	−0.010	0.014	−0.700	0.486
Hospital preference				
Approved referral hospitals	0.032	0.122	0.260	0.793
NHIF approved hospital	−0.165	0.086	−1.910	0.056
Private clinic	0.095	0.144	0.660	0.510
Community health centre	0.502	0.066	7.660	0.000
Freedom of a choice				
Little choice	0.277	0.107	2.590	0.009
Some choice	0.278	0.118	2.350	0.019
Great deal of choice	0.116	0.142	0.810	0.417

Note(s): dy/dx for factor levels is the discrete change from the base level

Table 5.
Regression results (marginal effects)

service quality rating as opposed to referral hospitals and university H/Unit. With fair, good and do not know rating for hospitals having 27.4%, 22.9% and 21.4% less likelihood of choosing health insurance, respectively.

The study also sought to determine the kind of facility employees first sought medical care whenever they fell sick. The facilities were categorized as university health unit, referral hospitals, NHIF selected hospitals, private clinics and community health centres. This would help in determining the effect of NHIF cover on the preference of the healthcare scheme. It was

found out that those who went to university referral hospitals, private clinics and community health centres were more likely to choose health insurance over referral hospital and university health centre at 3.2% and 9.5% and 50%, respectively. While those who went to NHIF selected hospitals were 16.5% less likely to choose health insurance over referral hospitals and University Health Unit. These factors were broadly classified by Dey and Mishra (2014) and Hooda (2015) as socio-economics status that largely determined consumer preference for a healthcare choice.

The freedom to choose a health facility had a positive correlation to the choice of health insurance as the preferred option. Those who felt there was little choice, some choice and a great deal of choice, having 27.7%, 27.8% and 11.6% more likelihood of choosing health insurance over referral hospitals and the university health unit. Those who felt that they had no freedom in choosing the health facility to attend to other than what is authorized by the university were indifferent in preference of health insurance and the referral hospitals.

Hospital attributes affecting the choice of a healthcare scheme

Table 6 shows the attributes of healthcare providers and reasons for preference by the employees.

Health insurance was the most preferred with 45.89%, followed by referral hospitals with 36.99%, while improved university health units were the least preferred with 17.12%. According to Hooda (2015), insurance coverage greatly influenced the choice of a healthcare provider. Hence the majority of employees also chose the health insurance option.

Of those who chose health insurance, accessibility (34.33%), cost-effectiveness (20.9%) and quality services (19.4%) were the main reasons. On the other hand, specialized services (42.59%), quality services (31.48%) and cost-effectiveness (20.37%) were the main reasons for those who chose referral hospitals. However, the majority of respondents who chose improved university health units cited an easy follow-up (60%) as the main reason. The quality of healthcare and waiting time were found to be significant factors in determining consumer healthcare satisfaction in Ghana (Nketiah-Amponsah and Hiemenz, 2009).

Table 6.
Determinants of a healthcare choice

Key
Frequency
Row percentage
Column percentage

Preferred medical scheme	Reason for preference							
	Quality services	Confidentiality	Cost effective	Specialized services	Accessibility	Convenient	Easy follow-ups	Total
Health insurance	13	8	14	0	23	9	0	67
	19.4	11.94	20.9	0	34.33	13.43	0	100
	36.11	53.33	56	0	100	100	0	45.89
Referral hospitals	17	3	11	23	0	0	0	54
	31.48	5.56	20.37	42.59	0	0	0	100
	47.22	20	44	100	0	0	0	36.99
Improved university health unit	6	4	0	0	0	0	15	25
	24	16	0	0	0	0	60	100
	16.67	26.67	0	0	0	0	100	17.12
Total	36	15	25	23	23	9	15	146
	24.66	10.27	17.12	15.75	15.75	6.16	10.27	100
	100	100	100	100	100	100	100	100

Cost-effectiveness and access to healthcare were major determinants in India (Dey and Mishra, 2014). While in determining the choice of health facilities in Nigeria, Abiodun and Olu-Abiodun (2014) found that quality and perception of care, competency of healthcare personnel and effectiveness of treatment were the main determinants.

In choosing a preferred healthcare scheme, quality services ranked first with 24.66%, followed by cost-effectiveness at 17.12%, specialized services and accessibility at 15.75%, confidentiality and an easy follow-up at 10.27% and finally convenience at 6.16%.

Cost of the alternative healthcare schemes

The data on the cost of the different healthcare alternative were obtained from key informants. On healthcare insurance, the cost was based on quotations from three different insurance firms operating in Voi and Mombasa. While the cost of referral hospitals and improved university health units were obtained using the secondary data available and interviews by university management.

In this case, a worker's value equals earnings because a fair-market workplace will not pay a worker more than the additional value he/she contributes (CDC, 2017). Therefore, the benefits are the same as the output. Hence it is assumed employees earnings are the same as the output, hence the benefits. Earnings 463,983,187.00 (TTU FY, 2017/2018). To compute the benefit to cost ratio, we, therefore, divide the value of net benefits stated above by the cost of each healthcare alternative in Tables 7–9. An economic evaluation of any healthcare choice plays a significant role in determining its productivity (Rickards and Putnam, 2012). They emphasized the fact that any return on healthcare investment must incorporate improvements into healthcare.

Tables 7–9 show the summary of costs of the three healthcare alternatives. The costs for health insurance, referral hospitals and improved university health units are Kshs. 18,216,000.00, Kshs. 12,937,280.00 and Kshs. 13,425,000.00, respectively.

The researcher computed the cost benefits of the three alternatives as below:

Under health insurance B/C ratio	= 463,983,187.00/18,216,000.00	= 25.47
Under referral hospitals B/C ratio	= 463,983,187.00/12,937,280.00	= 35.86
Under improved H/unit B/C ratio	= 463,983,187.00/13,425,000.00	= 34.56

From the above summary and computations, referral hospitals gave the highest B/C ratio of 35.86, followed by improved university health unit with a B/C ratio of 34.56 and finally health insurance with B/C ratio of 25.47.

This means that the referral hospitals options offers the highest benefits and are optimal choice in terms of cost management. This is supported by studies done by Powers and Faden (2006) while analyzing costs verses benefit of healthcare interventions. The importance of the cost-benefit analysis was highly emphasized in the decision-making process (Niessen *et al.*, 2012).

Table 7. Cost of health insurance

Insurance company	Per person	No. of staff	Health insurance Months	Gross	Administration fees	Total
A	4,500	240	12	12,960,000.00	1,944,000.00	*14,904,000.00*
U	5,000	240	12	14,400,000.00	2,160,000.00	*16,560,000.00*
B	5,500	240	12	15,840,000.00	2,376,000.00	*18,216,000.00*

Conclusion and policy implications

A healthy employee is more likely to be more productive and more supportive of the organization for which he or she works. Thus, many organisations strive to provide the best healthcare scheme for the staff as an incentive to enhance productivity and to attract and retain the best staff possible. But a good healthcare scheme comes at a cost and, if not handled properly, it could be one of the causes of losses to an organization. The golden rule, therefore, is to balance the employee preferences for particular schemes and the costs so that the scheme meets the expectations of the employees without compromising the financial position of the organization. That is, the scheme should be effective in delivering good health, as expected by the employees, in the most efficient way. The best way to achieve this is to objectively analyze the employee preferences for the available schemes and conduct a cost-benefit analysis of the alternative schemes. This is what this study sought to do for universities in Kenya, using the case of Taita Taveta University.

Using a blend of quantitative and qualitative approaches, the study found that employee preferences for healthcare schemes are shaped by household characteristics and perceived attributes of healthcare providers. In terms of cost-benefit analysis, the alternative schemes varied, the referral system being the most beneficial, followed by the university-managed hospital system and health insurance, respectively. The policy implication for this is that the cost of healthcare schemes may be at variance with employee preferences. Thus, it is important for an employer to engage employees in the selection of healthcare scheme by explaining the attributes of healthcare providers clearly and the range of services covered, the costs involved in each scheme and what is affordable within the prevailing financial position of the employer. That way, the employees would remain motivated even if their most preferred service provider is not selected. It would even be much better to select an independent team including different cadres of employees in the healthcare provider selection process with well-defined selection criteria agreeable to a wider cross-section of employees.

Table 8. Costing for referral hospitals

Referral hospitals			
Year	Description	Cost head	Amount
FY 2017/2018	Actual amount	Out-patients	1,781,293.00
		In-patients	7,784,429.00
		Medical drugs	1,371,558.00
	Down payment to introduce a new service provider		2,000,000.00
	Total		*12,937,280.00*

Table 9. Costing for improved university health unit

Improved university health unit			
Cost centre	Description	Monthly	Gross amount
Personnel		480000.00	5760000.00
Equipment/Servicing		400000.00	4800000.00
Reagents		100000.00	1200000.00
Chemicals		50000.00	600000.00
Food		5000.00	5000.00
Bedding		5000.00	5000.00
Pharmacy		1000000.00	1000000.00
Licenses/certification (Permits, professional bodies, compliance)	Pharmacy (Pharmacy & poisons board)	20000.00	20000.00
	Laboratory (Kenya medical laboratory technicians and technologists board)	15000.00	15000.00
	Clinic (PPB)	20000.00	20000.00
Total			*13,425,000.00*

Limitations and threats to the validity of the study

The study was based on cross-sectional survey that limited the generalization of the findings. The model should, therefore, be tested in a different sector or country. Future research on longitudinal data can be undertaken to provide better understanding of the phenomenon under study. The major threat to validity of this study would be a policy shift on employees' healthcare by either the university (Employer) or a government directive on provision of healthcare.

References

Abiodun, O.A. and Olu-Abiodun, O.O. (2014), "The determinants of choice of health facility in Sagamu, South-West Nigeria", *Scholars Journal of Applied Medical Sciences*, Vol. 2 No. 1C, pp. 274-282.

Abodunrin, O.L., Bamidele, J.O., Olugbenga-Bello, A.I. and Parakoyi, D.B. (2010), "Preferred choice of health facilities for healthcare among adult residents in Ilorin Metropolis, Kwara State, Nigeria", *International Journal of Health Research*, Vol. 3 No. 2, pp. 79-86.

Alfes, K., Shantz, A.D., Truss, C. and Soane, E.C. (2013), "The link between perceived human resource management practices, engagement and employee behaviour: a moderated mediation model", *International Journal of Human Resource Management*, Vol. 24 No. 2, pp. 330-351.

Ashkanasy, N. and Dorris, A. (2017), "Emotions in the workplace", *Annual Review of Organizational Psychology and Organizational Behaviour*, Vol. 4 No. 1, pp. 67-90.

Baltussen, R. and Niessen, L. (2006), "Priority setting of health interventions: the need for multi-criteria decision analysis", *Cost Effectiveness and Resource Allocation*, Vol. 4, p. 14.

Barasa, E., Rogo, K., Mwaura, N. and Chuma, J. (2018), "Kenya national hospital insurance fund reforms: implications and lessons for universal health coverage", *Health Systems and Reform*, Vol. 4 No. 4, pp. 346-361.

Centre for Disease Control (CDC) (2017), "Benefit-cost analysis, outcomes quantified in dollars: heart disease and stroke prevention", The Fourth of a Five-Part Series, available at: https://www.cdc.gov/dhdsp/programs/spha/economic_evaluation/docs/podcast_iv.pdf.

Dey, K.D. and Mishra, V. (2014), "Determinants of choice of healthcare services utilization: empirical evidence from India", *Indian Journal of Community Health*, Vol. 26 No. 04, pp. 356-363.

Fuchs, M., Kronenberg, K., Kühne, S. and Rieder, B. (2016), "Human Resource Management as driver behind employee satisfaction and organisational performance: a causal analysis from the Tyrolean hotel sector", *FALF Forum for Arbeitslivs for Skning*, available at: http://www.diva-portal.

Gaddah, M., Munro, A. and Quartey, P. (2015), "The demand for public health care and the progressivity of health care services in Ghana", *African Development Review*, Vol. 27 No. 2, pp. 79-91.

Grossman, M. (1972), "On the concept of health capital and the demand for health", *Journal of Political Economy*, Vol. 80 No. 2, pp. 223-255.

Ha, N.T., Berman, P. and Larsen, U. (2002), "Household utilization and expenditure on private and public health services in Vietnam", *Health Policy and Planning*, Vol. 17 No. 1, pp. 61-70, doi: 10.1093/heapol/17.1.61.

Halasa, Y. and Nandakumar, A.K. (2009), "Factors determining choice of health care provider in Jordan", *Eastern Mediterranean Health Journal*, Vol. 15 No. 4, pp. 959-968, available at: https://apps.who.int/iris/handle/10665/117720.

Hooda, S.K. (2015), "Health insurance, health access and financial risk protection", *Economic and Political Weekly*, Vol. 50 No. 50, pp. 63-72.

Kamgnia, D.B. (2008), "Distribution impact of public Spending in Cameroon: the case of healthcare", Africa Economic Research Consortium (AERC) Research Paper 179, available at: publications.aercafricalibrary.org.

Kiplagat, I., Muriithi, M. and Kioko, U. (2013), "Determinants of health insurance choice in Kenya", *European Scientific Journal*, Vol. 9 No. 13, pp. 452-468.

Kouadio, A., Monsan, V. and Gbongue, M. (2008), "Social Welfare and demand for healthcare in the urban areas of Côte d'Ivoire", Africa Economic Research Consortium (AERC) Research Paper 181, Nairobi 2008, available at: publications.aercafricalibrary.org.

Kuunibe, N. and Dary, S.K. (2012), "Choice of healthcare providers among insured persons in Ghana", *International Journal of Business, Humanities and Technology*, Vol. 2 No. 6, pp. 81-88.

Marshall, C. (2020), "Analysis of a comprehensive wellness program's impact on job satisfaction in the workplace", *International Hospitality Review*, Vol. 32 No. 2, pp. 221-241.

Moehrle, T.G. (2015), "Measuring the generosity of employer-sponsored health plans: an actuarial-value approach", *Monthly Labor Review*, available at: https://www.jstor/stable/10.2307/monthlylaborrev.2016.06.002.

Muga, R., Kizito, P., Mbayah, M. and Terry, G. (2005), "Overview of the health system in Kenya", *Demographic and Health Surveys*, pp. 13-26, available at: http://www.measuredhs.com/pubs/pdf/SPA8/02Chapter2.pdf.

Mutula, S.M. (2001), "Financing public universities in eastern and Southern Africa: implications for information services", *The Bottom Line*, MCB University Press, Vol, 14 No. 3, pp. 116-131.

Niessen, L.W., Bridges, J., Lau, B.D., Wilson, R.F., Sharma, R., Walker, D.G., Frick, K.D. and Bass, E.B. (2012), "Assessing the impact of economic evidence on policymakers in health care—a systematic review", *AHRQ Publication No. 12(13)-EHC133-EF*, Agency for Healthcare Research and Quality, Rockville, MD, available at: www.effectivehealthcare.ahrq.gov/reports/final.cfm.

Nketiah-Amponsah, E. and Hiemenz, U. (2009), "Determinants of consumer satisfaction of health care in Ghana: does choice of health care provider matter?", *Global Journal of Health Science*, Vol. 1 No. 2, pp. 50-61, available at: http://www.ccsenet.org/gjhs.

Obwogi, J. (2019), "Effect of human resource practices on the quality of teaching staff at universities in Kenya", *International Journal of Social Sciences and Information Technology*, Vol. V No. VI, pp. 74-89.

Pantouvakis, A. and Bouranta, N. (2014), "Quality and price: impact on patient satisfaction", *International Journal of Health Care Quality Assurance*, Emerald Group Publishing, Vol. 27 No. 8, pp. 684-696.

Powers, M. and Faden, R.R. (2006), *Social Justice: The Moral Foundations of Public Health and Health Policy*, Oxford University Press, New York.

Rickards, J. and Putnam, C. (2012), "Pre-intervention benefit-cost methodology to justify investments in workplace health", *International Journal of Workplace Health Management*, Vol. 5 No. 3, pp. 210-219.

Smith, A.D., Damron, T. and Melton, A. (2017), "Aspects of corporate wellness programs: comparison of customer satisfaction", *Benchmarking: An International Journal*, Vol. 24 No. 6, pp. 1523-1551.

Su, T.T. and Flessa, S. (2013), "Determinants of household direct and indirect costs: an insight for health-seeking behaviour in Burkina Faso", *The European Journal of Health Economics*, Vol. 14, pp. 75-84.

Weizhen, D. (2003), "Healthcare-financing reforms in transitional society: a Shanghai experience", *Journal of Health, Population and Nutrition*, Vol. 21 No. 3, pp. 223-234.

World Health Organization (2007), *A Safer Future: Global Public Health Security in the 21st Century*, The world health report, 2007, Geneva.

Ying, M. and Du, Z. (2012), "The effects of medical insurance on durables consumption in rural China", *China Agricultural Economic Review*, Vol. 4 No. 2, pp. 176-187, doi: 10.1108/17561371211224764.

Zheng, L. and Lu, Y. (2020), "Health human capital investment and economic growth", *Technium Social Sciences Journal*, Vol. 8, pp. 229-248.

Further reading

Kibui, A., Mugo, R., Nyaga, G., Ngesu, L., Mwaniki, N. and Mwaniki, A. (2015), "Health policies in Kenya and the new constitution for vision 2030", *International Journal of Scientific Research and Innovative Technology*, Vol. 2 No. 1, p. 2015.

Republic of Kenya (2014), *Transforming Health: Accelerating Attainment of Universal Health Coverage*, KHSSP July 2014 – June 2018, Ministry of Health, Republic of Kenya, Nairobi.

Corresponding author
George Ouma Ochieng'a can be contacted at: mcochienga@gmail.com