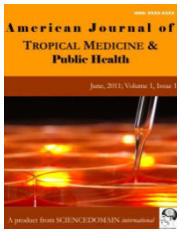

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Preferences and Selection of Health Plans by Members of an Employer Based Medical Scheme

Michael Mncedisi Willie[1*]

[1]*Research and Monitoring, Council for Medical Schemes, Private Bag X34, Hatfield 0028, South Africa.*

Research Article

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ABSTRACT

Aims: The aim of the current study was to explore employee preferences for health plans offered by members of an employer based medical scheme.
Study design: The study was a cross section survey on a restricted scheme or an employer based medical scheme. Multinomial logistic regression model were employed on the outcome variable, which was the attributes of choosing a health plan.
Results: The study revealed that affordability access to benefits, and health care needs as most prevalent attributes for choosing health plans and the response rates were 28.1 %, 22.0% and 21.2%, respectively. Multinomial logistic regression model results revealed demographic characteristics such as gender (p=0.005), age (p<0.0001), income (p=0.0129), ethnicity (p=0.0062), and health plan characteristic (p<0.001) as significant effects of choosing a health plan.
Conclusion: Comprehensive and affordable health care remains a problem for many, even in insured groups of individuals on employer sponsored health plans. Access to benefits, healthcare needs and convenient access a service provider remain second key attributes to choosing health plans.
Originality/value: The study is original research work on medical schemes members and provides insightful and meaningful results on preference by purchasers of private health insurance plans.

Keywords: Multinomial logistic regression; health plans; contribution premiums; restricted schemes; open schemes; adverse selection;

**Corresponding author: Email: m.willie@medicalschemes.com;*

1. INTRODUCTION

Uncertainty with regards to individual's health status imposes a number of risks. The most trivial is the loss of health itself as well as the risk of incurring large financial costs associated with medical treatments aimed at restoring ones health (Cutler and Zeckhauser, 2000). When individuals face such risks they are typically willing to buy health insurance from the private health sector (Glied, 2000; Rabin, 2000). Literature shows that allowing consumer's greater choice of health plans as key to high quality low costs in social health insurance (Kerssens and Groenewegen, 2005). However, consumers do not act alone in making these decisions and the choices available to them for health plans and providers are sometimes limited. For example, employers affect the choice of health plan (Rein, 2007). Employers vary in health insurance they offer their employees, the number and types of plans they offer, and their premium contribution policies (Gabel, 1999). In South Africa for instance, there are two types of private health insurance vehicles. The two types are open schemes (that freely admits everyone) and restricted schemes (employer based schemes). Willie (2011) noted that open schemes offer on average more health plans than restricted or employer based schemes, average of 5 and 2 health plans respectively. Thus there is a wider choice of health plans in open schemes compared to employer based schemes. Literature also revealed that consumers are offered two or more employer-sponsored health plans; competition among health plans for subscribers is promoted as a mechanism for balancing costs and quality (McLaughlin, 1999; Kolstad et al., 2009). Rein (2007) confirmed that employers have the ability to affect the choice of health plan, associated costs, access to provider and these may be limited if the demand for their services exceeds their capacity.

Consumers often do not receive the information necessary to make informed health plan choices (McLaughlin, 1999; Abraham et al., 2006). In some instances consumers remain unaware of publicly available quality information (Robinson and Brodie, 1997; Kolstad et al., 2009). Lake (2005) stated that awareness on published quality information for consumer and purchaser decision-making appears to be growing and consumers react positively to it. Employers persuade consumers to thoroughly assess exactly what their healthcare needs are to ensure that the health plan they choose addresses those needs (Maxwell et al. 1998). There are numerous factors that consumer take into account when they choose plans. Factors such as cost, price, benefits, and availability and quality of providers are considered most essential when comparing health plans (Tumilnson et al., 1997; Kolstad et al., 2009). Coverage and price has been the most prevalent significant feature of health plan attributes (Scanon et al., 1997; Bridget et al., 1999). However, there are other decisive characteristics for health plan preferences such as dental benefits, zero deductibles and free choice of provider; these were noted by Kerssens and Groenewegen (2005). A study conducted by Tumilnson (1997) confirmed attributes such as income, gender and out of pocket payments as essential for health plan selection.

Traditional economic theory suggests that workers also consider future expected spending when choosing a health insurance plan (Cutler and Zeckhauser, 2000; Rabin, 2000; Rice et al., 2002). Literature further shows a direct link between utilization of health care services and health plan choice (Brand, 2005). The consumer is viewed as a decision-maker who must choose among risky alternatives over a finite set of outcomes (Lubalin et al, 1999; Scanlon et al., 1997). Similar to the consumer theory, expected utility theory argues that people purchase health insurance to protect themselves from the financial risk of illness. Consumers generally receive tables for available plans that list plan characteristics such as premium, deductible, copayments, benefit limits, stop-loss provisions, and rules for out-of-network coverage (Schoenbaun et al., 2001). Consumers sometimes have difficulty

integrating these and other health plan characteristics in a way that facilitates meaningful comparisons across plans (Gibbs et al., 1996; Lubalin et al, 1999). Health plans characteristics at times restrict consumers' ability to assess health plan value (Mechanic 1989). Bundorf (2002) stated that an employer act as an intermediary between consumers and health plans characteristics, thus it is critical that the employers understand consumer preference on health plans. The aim of the current study was to examine the relationship between employee preferences for health plans offered by the employer.

2. DATA AND METHODS

The current study was a cross sectional survey on members of an employer based medical scheme. The scheme considered is one of the top five largest restricted schemes in South Africa. The analytical time horizon was members who were enrolled with scheme in December, 2010 and the survey was completed from December, 2010 to March, 2011. A two paged survey questionnaire was sent to the principal members of the scheme. An email with the link to the survey was forwarded to eligible members and they were required to complete the survey online. Eligibility for respondents was principal member older than 15 years and defined as the person responsible for paying the premium to the scheme. The respondents were asked to respond to a total of 11 survey questions including demographic characteristics of respondents and the option that they enrolled in at the time of the survey. Respondents were also asked to respond to a question which asked them to indicate why they chose a particular health plan. Attributes for choosing a specific health plan were adapted from literature including items that have been tested in previous similar types of surveys (Fowles et al., 2004).

Table 1: Outcome variable and explanatory variables under investigation

Outcome variable : Attributes for choosing health plans (Cat=1,2,3,4 and 5)	
Outcome	**Description**
Accessibility of benefits (Cat=1),	This included benefits such preventative care, dental benefits,
Affordability (Cat=2)	This was the ability for enrolees to afford premiums as well as co-payments considerations
Healthcare needs (cat=3)	This is expected future healthcare utilisation
Not restricted by service provider (Cat=4)	This was convenience to access healthcare service provider
Other (Cat=5)	This is also unobserved attributes that influence health plan choice
Explanatory variables	**Description**
Gender	Female, Male
Ethnicity	Black, Coloured, Andian/Asian, White, Other
Health plan classification	PlanA, PlanB, PlanC, PlanD, and PlanE: These are health plans that respondents enrolled to, they ranged from traditional, comprehensive and major medical hospital benefits.
Age category (years)	15-24, 25-34,35-44, 45-54,55-64, 65-74, =>75
Income category (RAND)* (*RAND/US$=6.92)*	0-5000; 5001-7000; 7001-10000; 1001-15000; >15000

Multinomial logistic regression analysis methods were employed to assess the effects of demographic characteristics and attributes of choosing health plans (Hosmer and Lemeshow, 2000; Abraham et al., 2006). A multinomial logit model, also known as multinomial logistic regression is a regression model which generalizes logistic regression by allowing more than two discrete outcomes (Long, 1997). The outcome variable for the current study was four discrete categories for choosing health plan, independent variables were demographic characteristics reflected in table 1. We conducted all the analysis using SAS software, version 9.2 (SAS Institute Inc. Cary, NC). Statistical significance tests were conducted at $\alpha = 0.05$ level ($p < 0.05$), odds ratio (OR) and the 95% confidence intervals (CIs) were also reported. Table 1 depicts variables that were considered in the study.

The type and benefits in each plan is also a driving factor for individuals to choose a health plan. The current study considered five plans that members were enrolled into were distinguished by the types of benefit offerings (given on table 1). These ranged from day-to-day benefits initially funded through the use of a Medical Saving Account ("MSA"), comprehensive in-hospital cover, limited out-of-hospital healthcare expenses through a MSA unlimited provider network of GPs, and dentists and optometrists.

3. RESULTS

3.1 Demographic Characteristics

Primary data for the current study consisted of 8512 survey respondents on an employer based medical scheme. The proportion of female respondents was significantly higher than male respondents with 59.6% (5070/8512) and 40.4% (3442/8512) respectively. There were five types of health plans that respondents enrolled to and these ranged from traditional to major medical health plans. More than fifty percent of respondents were enrolled in the comprehensive option. We adjusted for gender and found out that nearly thirty percent of the females were compared to the 22% of the male respondents were enrolled in comprehensive plans. The second largest number of enrolees was in traditional health plans, and there were nearly as twice females than males in traditional options.

The data predominantly consisted of White respondents, with 52.0% (4385/8463) response rate, followed by 25.4% (2147/8463) Black respondents and Coloured respondents represented 13.3% (1129/8463). The remaining 9.3% (783/8463) was the category 'other', this category included unobserved attributes like employer and other sources that could influence a decision to choose a health plan. There were more White male 25.2% respondents compared to the female respondents, the responses rate for females was of 6.9%.This trend was reversed in Black respondents where female respondents were as twice as the male respondents, 16.9% compared to 8.4% female Black respondents, the same phenomenon seen in Black respondents was noted in Coloured respondents, 10.2% of the Coloured respondents were females compared to the 3.1% male respondents. There were no significant differences between Indian/Asian male and female response rates.

A significant amount of female respondents were in age bands 25-34, 35-44 and 45-55 with proportions of 17.9%, 15.6% and 11.9% respectively. Slightly more than half of respondents indicated that they were married and the response rate for the married controlling for gender was 23.1% of the female respondents compared to the 28.9% male respondents.

Table 2: Demographic characteristics (Attributes for choosing health plans)

Description		Cat=1 N (%)	Cat=2 N (%)	Cat=3 N (%)	Cat=4 N (%)	Cat=5 N (%)
Gender	Female	1129 (13.3)	1485 (17.5)	957 (11.2)	611 (7.2)	888 (10.4)
	Male	747 (8.8)	910 (10.7)	848 (9.9)	355 (4.2)	582 (6.8)
Ethnicity	Black	402 (4.8)	770 (9.1)	314 (39.7)	227 (6.7)	434 (5.1)
	Coloured	237 (2.8)	379 (4.5)	280 (2.5)	118 (1.4)	187 (2.2)
	Indian/Asian	174 (2.1)	204 (2.4)	151 (1.8)	78 (0.9)	130 (1.5)
	Other	5 (0.1)	13 (0.2)	6 (0.1)	7 (0.1)	15 (0.2)
	White	1058 (12.5)	1017 (12.0)	1116 (13.2)	532 (6.3)	681 (8.1)
Health plan classification	PlanA	23 (0.3)	672 (7.9)	43 (0.5)	2 (0.0)	150 (1.8)
	PlanB	1202 (14.2)	731 (8.6)	1064 (12.5)	653 (7.7)	723 (8.5)
	PlanC	41 (0.5)	439 (5.2)	55 (0.7)	27 (0.3)	131 (1.5)
	PlanD	228 (2.7)	16 (0.2)	277 (3.3)	87 (1.0)	138 (1.6)
	PlanE	375 (4.4)	537 (6.3)	364 (4.3)	195 (2.3)	315 (3.7)
Age category (years)	15-24	62 (0.7)	112 (1.3)	39 (0.5)	18 (0.2)	74 (0.9)
	25-34	447 (5.2)	768 (9.0)	329 (3.9)	255 (2.9)	456 (5.3)
	35-44	440 (5.2)	585 (6.9)	372 (4.4)	235 (2.8)	356 (4.2)
	45-54	408 (4.8)	393 (4.6)	346 (4.1)	209 (2.5)	262 (3.1)
	55-64	327 (3.8)	354 (4.2)	405 (4.7)	167 (1.9)	175 (2.1)
	65-74	151 (1.8)	167 (1.9)	240 (2.8)	68 (0.8)	106 (1.2)
	>75	49 (0.6)	25 (0.3)	80 (0.9)	14 (0.2)	43 (0.5)
Income category (RAND)*	0-5000	55 (0.7)	152 (1.8)	102 (1.2)	29 (0.4)	75 (0.9)
	5001-7000	146 (1.7)	380 (4.5)	147 (1.8)	66 (0.8)	185 (2.2)
	7001-10000	265 (3.2)	472 (5.6)	258 (3.1)	145 (1.7)	251 (2.9)
	10001-15000	414 (4.9)	515 (6.1)	375 (4.5)	210 (2.5)	288 (3.4)
	>15001	976 (11.6)	839 (10.0)	904 (10.8)	505 (6.0)	631 (7.5)

‡ *p-value <0.05, *RAND/US$=6.92*

There were more single female respondents compared to males, with 22.4% and 0.8% response rates, respectively. Overall the data represented 23.2% response rate of respondents who were single. Approximately eleven percent of respondents indicated that they were divorced, with significantly more female than male respondents. More than a third of respondents completed grade 12 and 26.6% completed tertiary and this was followed by the 16.8% of respondents who did not complete tertiary level. Fifteen percent of respondents had a post graduate qualification compared to less than a percent that had no formal education or only completed up to grade seven.

The data also showed characteristics differences in income distributions among respondents, 56.0% (3828/8317) respondents earned more that R15000 per month. There were nearly as four times females than males in administrative position, with 21.3% and 5.8% response rates respectively. There were no significant differences between female and male respondents who held a managerial position. Slightly over fifteen percent skilled/professional were females compared to the 10.8% male respondents. Approximately forty six percent of respondents earned more than R15000 per month, there were no significant differences between male and female respondents who earned more than fifteen thousand rand per month. There were as twice females than males in the income band R10001-R15000. Similarly to the income band R0-R5000, female respondents earned three times higher than their male counterparts. A notable difference was seen in the income band R7001-R1000, where female respondents earned nearly as three times as the male respondents.

Controlling for ethnicity, the data showed 29.2 % (2432/8317) of White respondents had an income of more than fifteen thousand rand per month, this was significantly higher than the 7.3% of Black respondents earned more than R15000 per month. There were more Indian/ Asian respondents than Coloured who earned more than R15000, 5.1% (Indian respondents) and 4.3% (Coloured respondents). Similarly to the income band R10001-R15000 strata, 10.4% of White respondents earned between ten thousand and fifteen thousand a month compared to the 5.6% of Black respondents. There were 3.4% of the Coloured respondents who earned between R10001-R15000 compared to the 1.9% of Indian/Asian respondents. There was somewhat a reverse trend in the number of respondents for the R5001-R7000 income bands, 5.0% of Black respondents were in this category compared to the 3.1% White respondents and the 2.3% of the Coloured population.

3.2 Attributes of Choosing a Benefit Option/Health Plan

The survey results revealed that members choose a health plan based on the affordability, with response rate of 28.1% (2395/8512). There were no significant differences between respondents who selected a health plan based on accessibility to benefits and healthcare needs, response rates was 22.2% (1805/8512) and 21.0% (1876/8512), respectively. Only 11.4 % (966/8512) of respondents cited convenient access to service provider as essential factor when choosing a health plans. There were significant differences in reasons provided for plan selection by the respondents. Controlling ethnicity, we found out that thirteen percent of White respondents found healthcare needs essential when choosing a health plan, 13% found that accessibility of benefits an important factor, twelve percent of the same population group found that affordability was an important consideration when choosing an option. Nearly ten percent of Black respondents favoured affordability as key when choosing an option. A comparison figure on affordability of health plans for Coloured, Indian/Asian respondents was 4.5% and 2.4% respectively. Only 5% of Black respondents favoured

accessibility of benefits essential to choosing an option; a comparison figure for Coloured, Asian/Indian was 2.8% and 2.1% respectively. Convenient access to a service provider was also essential for plan selection this varied among the ethnic groups. Six percent of White respondents cited convenient access to a service provider as essential; a comparison figure for Black, Coloured, and Indian/Asian respondents was 2.7%, 1.4%, 0.9% and 0.1% respectively.

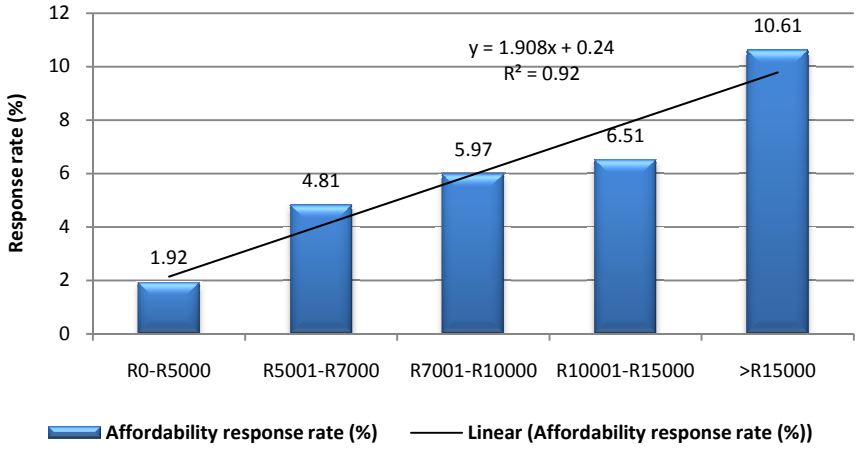

Figure 1: Linear relationship between affordability and income bands

Respondents who earned more than R15000 per month found access to benefits essential when choosing a health plan, 11.6 % of respondents compared to the 10.8% who chose a health plan based on health care needs. Ten percent respondents in the income band >R15000 found affordability essential. Six percent of respondents found convenient access to a wide variety of quality health care providers essential. Respondents who earned less that R15000 per month found the affordability (18.0% of the respondents) essential to selecting plans followed by access to benefits (10.5%) and health care needs (10.5%). Fourteen percent of respondents enrolled in the comprehensive plans found access to benefits essential compared to the 12.5% and 8.6% for health care needs and affordability. Respondents in the traditional option found affordability, access to benefits and healthcare needs essential, with response rates 6.3, 4.4, and 4.3% respectively. Figure 1 depicts affordability response rate and the income categories, a linear trend is noted, and this illustrates a trivial relationship of affordability in higher income categories.

3.3 Modelling Attributes for Choosing Health Plans

Multinomial logistic regression model presented in table 3 identified gender, age, income, health plan characteristics as significant effects for choosing a health plan. Male respondents were less likely to choose health plans based convenient access to health care service provider (OR=0.81, 95% CI: 0.68-.97). There were no significant differences between the unobserved attributes relative to the reference group when adjusting for gender. Age of respondents was also a significantly effect to plan selection. There were no significant differences between health care needs and the reference group when adjusting for age.

Respondents in age bands 45-54 versus the reference (35-44) found unobserved attributes less essential to affordability, OR=0.78; 95% CI: (0.62-0.98).

Table 3: Multinomial Logistic Regression for modelling attributes for choosing a health plans (reference is Cat=2, Affordability, N=2299)

Effect	Cat=1 :OR (95% CI) N=1793	Cat=3: OR (95% CI) N=1734	Cat=4: OR (95% CI) N=931	Cat=5: OR (95% CI) N=1382
Gender				
Male vs. Female	0.89 (0.76-1.03)	1.10 (0.50-1.28)	0.81 (0.68-.97)‡	0.97 (0.83-1.13)
Age of members (years)				
15-24 vs. 35-44	1.60 (1.07-2.40)‡	1.04 (0.67-1.62)	0.967 (0.55-1.71)	1.69 (1.18-2.41)‡
25-34 vs. 35-44	1.44 (1.17-1.77)‡	1.18 (0.95-1.46)	1.58 (1.24-2.01)‡	1.41 (1.15-1.72)‡
45-54 vs. 35-44	0.87 (0.69-1.07)	0.89 (0.71-1.11)	0.86 (0.67-1.11)	0.78 (0.622-0.98)‡
55-64 vs. 35-44	0.72 (0.57-0.91)‡	1.02 (0.81-1.29)	.071 (0.54-0.94)‡	0.055 (0.42-0.71)‡
65-74 vs. 35-44	0.63 (0.46-0.86)‡	1.09 (0.82-1.47)	0.58 (0.39-0.85)‡	0.59 (0.43-0.83)‡
>75 vs. 35-44	0.88 (0.51-1.51)	1.56 (0.94-2.60)	0.55 (.27-1.10)	1.13 (0.65-1.96)
Income (RAND)*				
0-5000 vs. >15000	0.81 (0.55-1.18)	1.56 (1.13-2.19)‡	0.88 (0.55-1.39)	1.24 (0.88-1.73)
5001-7000 vs. >15000	1.89 (0.84-1.42)	1.31 (1.01-1.70)‡	0.95 (0.68-1.32)	1.32 (1.04-1.69)‡
10001-15000 vs. >15000	0.99 (0.83-1.9)	1.0 (0.84-1.22)	0.96 (0.77-1.19)	0.96 (0.79-1.16)
7001-10000 vs. >15000	1.19 (0.965-1.49)	1.33 (1.07-1.64)‡	1.23 (0.95-1.59)	1.27 (1.02-1.58)‡
Ethnic Group				
Coloured vs. White	1.01 (0.80-1.27)	1.12 (0.89-1.42)	0.93 (0.70-1.23)	0.927 (0.73-1.18)
Indian/Asian vs. White	0.93 (0.71-1.21)	1.07 (0.82-1.39)	0.79 (0.57-1.09)	0.98 (0.75-1.29)
Other vs. White	1.16 (0.36-3.74)	1.50 (0.50-4.53)	3.04 (1.02-9.02)‡	3.24 (1.38-7.60)‡
Black vs. White	1.31 (1.06-1.62)‡	1.26 (1.01-1.57)‡	1.39 (1.09-1.79)‡	1.34 (1.08-1.67)‡
Option/ Health plan				
PlanA vs. PlanB	0.3 (0.02-0.05)‡	0.07 (0.05-0.10)‡	0.04 (0.03-0.06)‡	0.17 (0.13-0.22)‡
PlanE vs. PlanB	0.01 (0.00-0.02)‡	0.03 (0.02-0.05)‡	0.002(0.00-0.01)‡	0.12 (0.9-0.15)‡
PlanC vs. PlanB	0.8 (0.32-0.45)‡	0.44 (0.37-.52)‡	0.35 0(.29-0.43)‡	0.51 (0.42-0.61)‡
PlanD vs. PlanB	12.06 (6.81-21.34)‡	14.72 (8.34-25.97)‡	8.67 (4.76-15.79)‡	12.79 (7.14-22.92)‡

‡ *p-value <0.05, CI= Confidence Interval, *RAND/US$=6.92*

Also noted was that respondents in age band 15-24 compared to 35-44 were more likely to choose a health plan based on access to benefits and other unobserved attributes than on affordability, OR=1.60; 95 % CI: (1.07-2.40) and OR=1.69; 95 % CI: (1.18-2.41) respectively. Respondents in age bands 25-34 versus the reference group (35-44) were less likely to favour attributes such as access to benefits and access to a service provider, and other unobserved attributes than affordability, OR=1.44; 95% CI: (1.17-1.77), OR=1.58; 95% CI: (1.24-2.01) and OR=1.41; 95% CI: (1.15-1.72) respectively.

When adjusting for income, there were significant differences in the income bands R5001-R7000 and >R15000 relative to unobserved attributes and affordability. Respondents in the second lowest income band compared to the highest income band were more likely to choose a health plan based on unobserved attributes than affordability (OR=1.32; 95% CI: 1.04-1.69). Also noted was that respondents in income bands R0-R5000, R5001-R7000, and R7001-R1000 compared to the reference >R15000 found healthcare needs essential than on affordability, with OR =1.56; 95% CI: (1.13-2.19); OR =1.31; 95% CI: (1.01-1.70); OR =1.33; 95% CI: (1.07-11.64) respectively. Respondents in most income bands found convenient access to a service provider more essential than affordability, except in the two highest income bands. There were no significant differences between healthcare needs and affordability attributes for respondents in the income band R10001-R15000 and >R15000, OR=1.0; 95% CI (0.84-1.22). The model also revealed no significant effect on the attributes following attributes for plan selection; access to benefits, access to a health care service provider and affordability when adjusting for income.

As noted earlier, the data consisted mainly consisted mainly of White respondents than other ethnic groups, the regression model revealed significant association between Black and White respondents. Black respondents were more likely to choose a health plan based on all the other attributes than affordability, for instance Access to benefits, Healthcare needs, convenient access to the service provider, and other unobserved attributes were more essential compared to affordability, OR=1.31 ;95% CI: 1.06-1.62 , OR=1.26 ;95% CI: 1.01-1.57 , OR=1.39 ;95% CI: 1.09-1.79 , OR=1.34 ;95% CI: 1.08-1.67, respectively.

4. DISCUSSION

Literature reveals that females have greater utilization of health care resources, specific and unique reproductive and medical services than men throughout their lives and have higher annual health care expenses (Sered, 2009; Lawbrew, 2010). As a result females are more likely to be enrolled in health plans than males, and the quality of the plan in terms of benefit offerings would be more essential females than males (Tumlinson, 1997). The current study is consistent with literature in that more female respondents seek health care than their male counterparts; nearly sixty percent females compared to forty percentages male respondents. Rein (2007) noted that demographics and other characteristics might affect a consumer's choice of health plan. Our results also confirmed this phenomenon, the multinomial logistic regression model results revealed demographic characteristics such as gender ($p=0.005$), age ($p<0.0001$), income ($p=0.0129$), ethnicity ($p=0.0062$), and health plan characteristic ($p<0.001$) as significant effects of plan selection. Several studies have also showed that race, ethnicity, gender, geography and socioeconomic status all affect consumer response to health plan information (Scanlon et al., 1997; Abraham et al., 2006; Barringer and Mitchell 1994; Marquis and Long, 1995).

The current study further confirmed healthcare needs or expected utilisation of benefits as a significant effect to health plan choice, this is also confirmed in literature that if individuals

are aware of their future health care utilization they opt for health plans that offer expected benefits (Rabin, 2000). Individuals who expect high health care costs differentially prefer more generous and expensive insurance plans; those who expect low costs choose more moderate plans. This phenomenon is called adverse selection and is a major theoretical concern in health insurance markets (Cutler, 1996, Cutler and Zeckhauser., 1998). When adverse selection occurs, the average expected cost of people in a plan potentially increases in excess of the budget. As a result the medical schemes make losses and become unsustainable.

Research studies have revealed that consumers consistently rank cost or affordability, most consumers feel that it is important to know the cost healthcare services and prescription medications before they use them (Tumlinson, 1997). As a result this is the most important attribute for to selecting health plans. The current study revealed a linear positive relationship between income bands and affordability, nearly 80% of respondents enrolled in comprehensive and Traditional plans earned more than R10000 per month. The comprehensive plan is slightly more expensive than the industry average, but it offers generous benefits. This is consistent with the some of the literature in that prefers more generous plans (Grossman, 1972). A more noteworthy feature in the current study is forty two percent of the respondents in the lowest income band also preferred found comprehensive plan essential. These results indicate that consumers prefer higher quality, more flexible and more comprehensive coverage and this is consistent with comprehensive literature (Scanlon et al., 1997; Kolstad et al., 2009).

A key consistent feature in choosing health plans is preference for providers and this also includes access and location (Rein, 2007). Our research findings are consistent with this notion as this attribute was significantly associated to choosing health plan. Another key factor consistent with literature is that choice or provider varied by age and ethnicity. Respondents in age groups 25-34, were more likely to choose an option that would allow them convenient access to the service provider, OR =1.58; 95% CI: (1.24-2.01). Much older respondent's in age bands 55-64, 65-74 were less likely to choose an option that would allow them access to the service provider, OR =0.07; 95% CI: (0.54-0.94) and OR =0.58; 95% CI: (0.39-0.85) respectively. Strombom (2002) illustrated that older members in schemes tend to have established relationship with private providers. Similar observations were noted with regards to ethnicity, Black respondents found convenient access to a service provider essential than their White counter parts, were more likely OR =1.39; 95% CI: (1.09-1.79).

Anticipated health care utilization, relationship with the providers and perceived importance of various plan characteristics influences plan choice (Scalon et al., 1997). The current study revealed health plan characteristics as a significant effect when choosing health plans, for instance respondents in Plan A, E, and C compared to PlanB were less likely to select a health plan access to benefits, OR =0.30 ; 95% CI: (0.2-0.05); OR =0.01; 95% CI: (0.00-0.02); OR =0.8; 95% CI: (0.32-0.45) respectively. However, respondents in PlanD compared to Plan B were more likely to choose an option based on access to benefits than affordability than access to benefits. A general pattern noted from the regression results was that characteristic of respondents in PlanD compared to PlanB was more influenced by other attributes than affordability. PlanD is mostly aimed at high-income families and provides top-level benefits and complete freedom of choice of provider, with little or no copayments offer comprehensive in-hospital benefits. Older members in schemes who are often in worse health than the young are likely to place a higher value on the broader provider network of the network plan. This would give them greater freedom in choosing among providers (Cutler

and Zeckhauser, 2000). Thus the findings of the study are consistent with the literature on the structure of a benefit design and benefits thereof.

5. CONCLUSION

The study revealed that attributes for choosing health plans differ by demographic characteristics like gender, age, income and ethnicity. Adjusting for ethnicity, plan selection based on affordability was more skewed towards White respondents compared to the other ethnic groups. Affordability of premiums still remains the key barrier to accessing care even in the insured population. Choosing health plans based on health care needs or expected future spending was similar across all age bands. Access to benefits, healthcare needs and convenience accessing the service provider remains second prevalent attributes to choosing health plans. When selecting health plans, members should thoroughly assess exactly what their healthcare needs are to ensure that the health plan they choose addresses those needs. Employers can also play a pivotal role in educating members about their health benefit offerings. Medical schemes should price their products appropriately, take into account members have limited choices in terms of health plans and preference on service providers as noted earlier in this document.

The results of this study should be interpreted with caution and should not in any how be generalized to health plans of other employer based medical schemes in the industry. This is due to demographic characteristics and sector that some of the restricted schemes cater for. The current study looked at five health plans of a restricted scheme operating in a specific sector. Due to externalities like demographic profile of the scheme, sector that some of the restricted schemes operate and other factors, the results obtained here may be dissimilar to other schemes. For example results of another restricted scheme that has only one health plan may not yield the same result as another restricted scheme that has three health plans. Furthermore, open schemes data may also not be directly comparable, open schemes differ to restricted schemes in terms of demographic profile and other characteristic differences like the number of health plans they offer. Some employer based schemes offer subsidies on their plans and some do not and these could potentially have an effect and essential to employees when choosing plans.

The current study provided useful and insightful information about the health plan needs of the employees and what they deem to be important when they choose or select health plans. The sample considered for this research work considered members who had access to emails and further work is needed on experiences of members who do not have access to emails and internet. Finally, the importance of the attributes and utilities associated with various levels of the attributes may vary markedly from those found in this study. However, the basic methodology is general and can be readily applied in other markets. The results obtained in this study have important implications for researchers and policy makers using data on observed attributes of individuals purchasing coverage. In the current study we did not consider if whether employers choose health benefits for the welfare of workers based on employer preferences attributes, thus many important questions remain unanswered in this regard.

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COMPETING INTERESTS

Author has declared that no competing interests exist.

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