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Examining Quality, Value, Satisfaction and Trust Dimensions: An Empirical Lens to Understand Health Insurance Systems Actual Usage

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Abstract

Health insurance policies have become key social policy interventions incepted to extend healthcare to vulnerable populations. In this vein, Ghana devised a health insurance scheme in the year 2003. However, there have been concerns about quality, value, satisfaction and trust regarding healthcare and insurance usage. Using data drawn from 345 participants, our study investigates these dimensions to empirically test their predictive effects on the actual usage of health insurance. Data analysis results using the Structural Equation Modelling technique confirmed these dimensions as predictors of intention and actual usage. Our study delineates the practical, theoretical and policy implications of the study findings.

Keywords Health insurance · Healthcare quality · Value · Trust and satisfaction · Health insurance use intention · Actual usage

Introduction

The growing efforts exerted towards the pursuit of universal health coverage goals has imposed huge responsibilities on state and non-state actors to device sustainable

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mechanism targeted at dispensing comprehensive healthcare to populations. Essentially, among other things, the institution of these mechanisms aimed at advancing life devoid of treatable ailments and premature morbidity, whiles ensuring freedom and reducing deprivation. The realization of these goals, primarily calls for an elevation in healthcare by stakeholders. And as much as issues of healthcare remain a fundamental human right, developing governments in developing countries are challenges in administering essential health services (Sulemana and Dinye 2014), thereby entrenching inequity in healthcare (Arkorful et al. 2018). Given the centrality of Primary Health Care (PHC) services as a sustainable pathway to reducing healthcare inequities, part of the resolve to devise proactive polices to advance healthcare in an efficient and effective environment has guided the implementation of various forms of health policies in various countries. Advanced countries like Canada and Australia have made phenomenal inroads in healthcare by implementing a hybrid public-private insurance scheme (Dalinjong and Laar 2012).

The passage of the National Social Security System for health, under the universal health insurance scheme (Law 100) approved in 1993 has helped extend health coverage to a population of approximately 95% (Escobar et al. 2010). And whereas the 2011 implementation of Thailand's universal coverage scheme enhanced a 95% population coverage in 2012, (Health Insurance System Research Office 2012), the passage of the National Health Insurance in Taiwan in 1995 ensured a population coverage of 97% by 2001 (Hsiao and Cheng 2013). Though the history of these schemes has been a success, same cannot be said for similar schemes in other countries. The National Health Insurance Scheme in Nigeria for instance has enhanced a population-wide coverage of less than 5% (Kumi-Kyereme et al. 2017). In Kenya, the National Health Insurance Fund (NHIF) of 1966 and the National Social Security Fund (NSSF) of 1965 has enhanced a 10% population coverage (Abuya et al. 2015). Furthermore, schemes like the NHIF, Social Health Insurance benefit, Community Health Fund (CHF), Tiba Kwa Kadi (TIKA) and other private ones like the National Insurance Corporation, MEDEX (T), AAR4 Health Insurance and Strategies Insurance in Tanzania have enhanced 16% population-wide coverage (Dutta 2015).

Over the years in Ghana, one of the most utilized conduits to reducing poverty has been the reduction in healthcare inequality levels. Precisely, health insurance has actually been a fulcrum around which health governance has revolved. The tone for the state's commitment to healthcare and access policy reforms was set through the promulgation of the National Health Insurance Law, Act 650 of parliament of Ghana, in the year 2003. The mandatory insurance policy had a legal backing in the year 2004 when the national health insurance regulation (legislative instrument-1809) was enacted (Government of Ghana. National health insurance regulations 2004). Ghana's insurance policy seeks to extend healthcare to all people living in Ghana. The scheme which covers about 95% of disease burdens (Amu and Dickson 2016) is financed from 2.5% Value Added Tax (VAT) on goods and services, 2.5 deductions from social security pension contributions of formal sector workers and annual premium payments by persons aged 18 years and above. Other sources include; grants, donations, investments, gifts, voluntary contributions and other fund allocations from the health insurance fund by the parliament of Ghana.

The national health insurance authority is the regulatory body in charge of the health insurance scheme. As much as the history of the scheme has been chequered, reforms,

including; the inception of a clinical audit, free maternal health care, claims processing outfits, biometric identification cards, call centers, consolidated premium account in 2011 (Amu and Dickson 2016; National Health Insurance Authority 2012) and self-renewal options have been introduced to promote efficiency and effectiveness of service delivery. These reforms have resulted into significant improvement in healthcare accessibility. For instance, the policy has influenced ante natal service and supervised delivery (Dzakpasu et al. 2012). In view of this, insured pregnant enrollees stand 85.7% chance of accessing prenatal care, whiles the uninsured stand a chance of 72% (Mensah et al. 2010). Generally, the introduction of the policy in 2005 increased health service utilization by over forty-fold from 0.6 million in 2005–25.5 million in 2011, making up 33% coverage of Ghana's population (National Health Insurance Scheme in Ghana 2011).

Although easing financial burden generated by the cost recovery policy (especially on the poor), was one of the proximate reasons for the introduction of the health insurance policy (Blanchet et al. 2012), whiles there exist a substantial evidence of the inability of the poor to utilize the policy, there are also pervasive reports of subscriber discontentment with the policy and services rendered by service providers including, but not limited to; health institutions and health personnel, health insurance registration outfits and personnel, health insurance accredited pharmacies, amongst others. These challenges have the potential to erode the gains made over the years. They could also impair the effectiveness and sustainability of the policy (Arkorful et al. 2018).

Prior studies have revealed poor quality services to health service seekers. And the fear of receiving inferior services has generated dissatisfaction, further making both the enrolled and prospective enrollees reluctant to utilize the scheme. In the year 2008 for instance, a stakeholder assessment underscored poor service quality of the scheme, and its affiliate service providers. Specific issues at the heart of the study findings centred on perceptions of poor-quality medications, unprofessional attitude of service providers. With regard to medications, another study by the National Development Planning Commission recounts the challenges of subscribers and revealed that 80% of enrollees complained of non-availability of medications (National Development Planning Commission 2009).

Moreover, another report by the Ghana Heath Service recounts of the negligible quality healthcare (Ghana Health Service 2011). And as much as the implementation of the health insurance scheme has placed enormous pressure on health systems, it has also created a germane space for the festering of malpractices like bribery and corruption among service providers. To this end, service providers extort sums from service seekers before delivering service. This has taken a toll on not only service seekers overall perception, but also, their usage of health insurance (Arkorful et al. 2018). In view of the confluence of factors disparately identified by prior studies, vis avis the global pursuit of universal health coverage goals, our study sets to empirically investigate the amalgam of quality, value, satisfaction and trust dimensions relative to individual's intention to use, and actual usage of health insurance. A comprehensive investigation of these dimensions would be of immense significance to a broad spectrum of global health stakeholders, as well the pursuit of universal health coverage goals. The remaining part of the paper is segmented as follows: the theoretical development and hypothesis discourses on theory and study hypothesis; study methods are presented under methodology; results of the study, present

outcomes. The final segment presents the discussion, conclusion, practical and theoretical implications of the study.

Theoretical Development and Hypothesis Formulation

The pertinent nature of health and have over the years gained enormous attention (Lee 2017). For this reason, concerns of quality and general reforms have subsequently increased. The service quality model has been extensively used to measure quality in various service areas because of its suitability and usability. Actually, healthcare quality discourse has evolved over the years. Myers (1969) conceptualised quality to include access, effectiveness, care improvement and continuity. Donabedian (1980) also defined quality to include efficacy, effectiveness, efficiency, legitimacy, optimality, acceptability and equity. Whereas Myers (1969) and Donabedian (1980) commonly agreed on efficiency and effectiveness. Donabedian (1980) introduced the dimension of efficacy to patient care. Parasuraman et al. (1988) delineated dimensions which among other things include; responsiveness (i.e. the attitude of service providers who nurse, care, and provide immediate service, and assurance (i.e. patients trust and faith regarding service providers attitude). Doran and Smith (2004) classified healthcare service quality measurement items to include reliability, responsiveness, assurance and elevation in care. Lee (2017) suggested health quality based on service providers and seekers perspective regarding efficiency, safety, quality. The foregoing discussion indicates the evolving nature of the discourse of health quality. Healthcare quality should be evaluated based on service seekers perceptions (Jun and Arendt 2016). Integrating these disparate perspectives, our study puts forward an empirical study to investigate service quality, value, trust and satisfaction dimensions. The integration of trust is based on the observation that, Ghanaians have strong bond of trust with social protection policies initiated by government. For that matter, it could be considered that, health insurance sustainability, in terms of enrolment, renewal, and retention could be augmented by trust. The integration of use intention and actual usage as widely used constructs within behavioral and psychological science-related studies hinged on the Theory of Planned Behavior (Ajzen 1991) and the theory of Reasoned Action (Fishbein and Ajzen 1980) will further help deepen understanding. Therefore, our study integrates quality, value, satisfaction and trust dimension within the theoretical framework of TRA to enhance an understanding and further prediction of intention to use, and actual usage of health insurance.

Hypotheses

Service Quality

Service quality is conceptualised as the standard degree of health system to provide the needed care support for service seekers (Lee 2017). Essentially, service quality has been an important driver of policy patronage, including social protection policy (i.e. health insurance policy). In this regard, the study posits that, intention to use, and actual usage of health insurance could be driven by service seekers perception of the support that the policy provides. In a situation whereby the enrolled perceive of

inferior service quality, they are likely not to renew. In the case of prospective enrollees, they are also not likely to enroll. These perceptions may constrain health insurance use, thereby posing policy sustainability threats. Therefore, service quality could be overarching to health insurance use. Precisely, perceptions of assurance to services like medication, timely access to health service providers, amongst others, will enhance intention to use. Thus, it is projected that, service quality regarding health insurance related services can inform intention to use. From the foregoing, we hypothesize that:

> H1: Service quality has a significant positive relationship with intention to use health insurance

Value

Value constitutes an essential underpinning element of consumers intention to transact (Holbrook 1994). Consumers satisfaction with a service or a product informs the formation of a better value expectation. Essentially, whiles value considerations inform loyalty to a service or product, it also drives a positive reaction (Anderson and Srinivasan 2003). Value considerations are largely utility based, stemming from a positive evaluation of the service or product in question. Relating this logic to health insurance, it could be said that, enrollees' perception regarding the likelihood to maximize utility benefits, is likely to inform intention to use and actual usage. Moreover, when individuals consider health insurance to offer superior benefits than other alternatives (e.g. out-of- pocket payment health-based services), and as such guarantee's satisfaction, benefits and overall excellence (i.e. medications, access to healthcare etc), they are likely to be motivated to use. Greater values are likely to result in greater intention to use health insurance. From the foregoing discussions, this study proposes the following hypotheses:

> H2: Value has a significant positive relationship with intention to use health insurance

Satisfaction

Satisfaction with an object, in this case health insurance is informed by the degree of interaction between users/service seekers and service providers (Zineldin 2006). In this respect, satisfaction borders on a positive user experience with health insurance, and healthcare service in general. Within the context of this study, we predict satisfaction as a determinant and/or predictor of intention to use health insurance. On this premise, it could be said that, as much as the satisfaction of enrollees could inform enrollment, renewal, retention and usage, through service seekers experience, it could also inform the decision of prospective enrollees to get themselves enrolled. The non-satisfaction of enrollees may affect intention to use. Satisfied enrollees are likely to exert efforts towards use. Most importantly, health insurance user's satisfaction will be enhanced

by their general experience with service providers and health systems. As such we propose that:

H3: Satisfaction has a significant positive relationship with intention to use health insurance

Trust

Issues of trust has in recent times dominated social science discourses. Trust is a psychological construct bordering on the judgements of individuals or group of individuals regarding the fact that, systems or individuals within a system would be effective and results oriented towards their needs (Rousseau et al. 1998). Trust in this study is premised on service seekers reliance and confidence on the health insurance scheme to provide them the expected health protection. Actually, health insurance in one way or the other constitutes a shock absorber that saves individuals from health-related uncertainties. Moreover, given the pro-poor nature of the policy intervention, and the general poverty situation in Ghana, this policy has provided some form of safety net, as it protects vulnerable households with unsustainable income streams from outrageous health expenditure. Given the situation of the vulnerable in the society, it becomes more obvious that, the potency of the health insurance scheme to render efficient and effective services (e.g. providing the requisite drugs and services, not been exploited), has the tendency to increase individual trust in the scheme. Enhanced trust will further increase intention to use. As such trust stands as an important construct to boost intention to use among health insurance enrollees and prospective enrollees. In view of this, we hypothesize that:

H4: Trust has a significant positive relationship with intention to use health insurance

Intention to Use and Actual Usage

In view of the fact that enrolment, renewal and retention contribute to ensuring health insurance sustainability, it is instructive to state that, as much as it is imperative to attract potential enrollees, it is equally important to retain already enrolled. Retaining the already enrolled, whiles attracting the non-enrolled is premised on their belief in health insurance, as it encapsulates their cycle of experience with the health care system and the service providers as well. Behavioral studies corroborate the positive relationship between intention to use and actual usage (Fishbein and Ajzen 1980). By extending same logic in our study of health insurance, we posit that, intention to use, could have a contagious effect on actual usage. The intention to use, within th context of the study model will be influenced by quality, value and trust dimensions, which would further, finally determine actual usage. In the regard, we hypothesize that:

H6: Intention to use has a significant positive relationship with actual usage of health insurance

Research Methodology

Research Participants and Data Collection

A questionnaire survey was utilized to draw data (from 1 st November 2019 to 20 th February, 2020) to test the study hypotheses. To ensure timely, useful and scientific data collection, questionnaires were self-distributed to participants (composed of users and prior users of health insurance) seeking health care at selected health facilities. Given the general difficulty of conducting facility-based data collection in Ghana, the research team established contacts with a health regulatory institution to help sample health facilities, and also introduce the research team to the targeted population. This led to the selection of two hospitals each from three regions (i.e. Northern, Upper-West and Upper East Regions) selected on the basis of poverty prevalence (Ghana Statistical Service 2015). Prior to data collection, to enhance the protection of the rights and privacy of study participants, an ethical approval was obtained from the institutions.

Thereafter, data collection commenced. Participants were briefed on the study purpose and their right to drop out at any stage. Completing a questionnaire took a maximum of 30 min. During data collection, all participants who had reading challenges were ably assisted by the research team which was adequately composed to meet the communication needs of the targeted population. In total, 370 questionnaires were distributed. At the end of data collection, 350 questionnaires were returned. After sorting uncompleted questionnaires with missing data, 345 useful questionnaires remained. Overall, the study recorded a 95% response rate. The details of study participants are presented in Table 1.

Measures

The questionnaires used presented questions seeking to capture participants' sociodemographic details such as gender, age and education. The questions were structured to capture constructs (with 18 items) adapted from past studies which had confirmed their validity and reliability. Items for service quality were adapted from Urbach et al. (2010). Value items were adapted from Sweeney and Soutar (2001). Trust items were adapted from (Boateng et al. 2016). System quality items were adapted from Urbach et al. (2010). Furthermore, items for "Intention" were adapted from Bagozzi et al. (2003). Items for measuring satisfaction were adapted from (Wu and Wang 2006). And finally, "actual usage" items were adapted from Moon and Kim (2001). These items were refined the suit the context of our study. A 5-point Likert scale starting from Strongly Disagree to Strongly Agree were used to measure items. Sentence structures of adapted items were significantly refined to suit the study context (Tables 2, 3 and 4).

Data Analysis and Results

In view of the theoretical framework, and the study hypothesis, the Structural Equation Modeling (SME) technique, complemented with Analysis of Moments of Structures (AMOS) software version 24 was employed for data analysis and establishing the proposed model. SEM helps to; (a) examine series of dependent variables at the same time, especially in a situation where there exist direct and indirect effects among

Table 1 Descriptive Characteristics of the Sample

Measures	Frequency *(n)*	Percentage *(%)*
Gender		
Male	157	46
Female	188	54
Age		
<25	111	32
26–30	105	30
>30	129	38
Education		
Junior high school	97	28
Senior High school	79	23
Tertiary and above	93	27
No formal education	76	22
Income		
>$50	222	64
$50–$100	95	28
$101–$150	15	4
$151–200	8	3
>$200	5	1
Current status		
Active	299	87
Inactive	46	13
Prior status		
Subscribed	255	74
Not subscribed	90	26

constructs (Hair et al. 2010); (b) analyse latent and observed variables inter-relationships; (c) model errors within observed variables and provide exact measurements; and (d) measure latent variables using multiple indicators and testing hypotheses at construct, rather than item level (Hoyle 2011). In analyzing data, a three-step approach was employed. Measurement model was confirmed to establish the validity and reliability of constructs at the first step. The structural model was evaluated in the second step employing hypothesis testing. Mediation effect analysis was conducted to test the mediating roles of *"intention to use"*.

Measurement Model Analysis

Exploratory factor analysis was conducted with Statistical Package for Social Scientist (SPSS) to evaluate factor loadings, reliability, convergent and discriminant validity of the proposed model. In Table 3, factor loadings for items ranged from .794 to .948, which is greater than the recommended benchmark of .70. Test of reliability indicated Cronbach alpha values to be greater than 0.7 signifying acceptable reliability of scale

Table 2 Measurement and Cross Loadings

Construct	Item	INT	SAT	SQ	AU	VAL	TR
Intention to Use (INT)	INT1	**.919**	.000	−.059	.017	−.019	−.004
	INT2	**.923**	.051	−.002	.000	.025	−.019
	INT3	**.948**	−.023	.071	−.019	.002	.014
Satisfaction (SAT)	SAT1	−.024	**.886**	.030	.058	.012	−.051
	SAT2	.027	**.918**	−.034	−.008	.014	.028
	SAT3	.022	**.925**	−.021	−.014	−.028	.040
Service Quality (SQ)	SQ1	.041	−.014	**.884**	−.031	−.042	−.026
	SQ2	−.016	.000	**.900**	.059	.002	.036
	SQ3	−.014	−.012	**.893**	−.011	.045	−.001
Actual Usage (AU)	AU1	−.046	.070	.021	**.863**	.083	−.021
	AU2	.030	−.041	−.015	**.911**	−.039	.024
	AU3	.012	.010	.012	**.870**	−.046	−.010
Value (VAL)	HV1	−.015	.076	.044	−.098	**.868**	.002
	HV2	.078	−.138	−.053	.090	**.834**	.028
	HV3	−.052	.053	.014	.005	**.878**	−.027
Trust (TR)	TR1	−.018	.053	−.007	−.027	.023	**.794**
	TR2	.021	−.086	−.079	.050	.038	**.878**
	TR3	−.013	.050	.097	−.029	−.059	**.825**

Table 3 Results of Factor Analysis

Construct	Item	Factor loadings	Cronbach Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Intention to Use (INT)	INT1	.919	.925	0.951	0.865
	INT2	.923			
	INT3	.948			
Satisfaction (SAT)	SAT1	.886	.905	0.935	0.828
	SAT2	.918			
	SAT3	.925			
Service Quality (SQ)	SQ1	.884	.873	0.921	0.796
	SQ2	.900			
	SQ3	.893			
Actual Usage (AU)	AU1	.863	.864	0.913	0.777
	AU2	.911			
	AU3	.870			
Value (VAL)	VAL1	.868	.826	0.895	0.740
	VAL2	.834			
	VAL3	.878			
Trust (TR)	TR1	.794	.778	0.872	0.694
	TR2	.878			
	TR3	.825			

Table 4 Average Variance Extracted and Correlation

Construct	Mean	STD	SQ	VAL	TR	INT	SAT	AU
SQ	13.258	2.393	**.892**					
VAL	10.441	3.119	−.083	**.860**				
TR	10.759	3.167	.017	−.003	**.833**			
INT	9.667	3.836	.131*	.139**	.141**	**.930**		
SAT	11.603	2.717	−.033	.109*	.030	.346**	**.910**	
AU	11.197	3.004	.080	−.004	.062	.393**	.389**	**.881**

Note: ** $p < 0.01$, STD=standard deviation, SQ=service quality HV=health value, TR=trust INT=intention to use, SAT=satisfaction, AU=actual usage

(Fornell and Larcker 1981). Average variance extracted (AVE) values and composite reliability measures were used to imply convergent validity. Composite reliability scores of variables were greater than 0.7 signifying the sufficiency and representativeness of items of proposed constructs reliability (Hair et al. 1998). AVE values greater than 0.5 signifies a good convergent validity (Fornell and Larcker 1981). Discriminant validity was assessed using both cross-loadings (Table 2) and correlations among constructs (Table 4). The cross-loadings among constructs are smaller compared to their corresponding factor loadings (Table 2), and the square root value of AVE for each construct is shown to be greater than correlations among constructs (Table 4). This is a clear indication that items measuring constructs are distinct from others. This signifies the validity and reliability of the measurement model (Fig. 1).

Measurement and Structural Model Evaluation

Analysis of Moments of Structures (AMOS) version 24 was used to assess the goodness-of-fit of the structural and measurement model, and also to test the significance of the respective hypothesis paths. Indices examined to test the overall fitness included Normed Fit Index (NFI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Root Mean Square of Error of Approximation (RMSEA) and Normed Fit Index

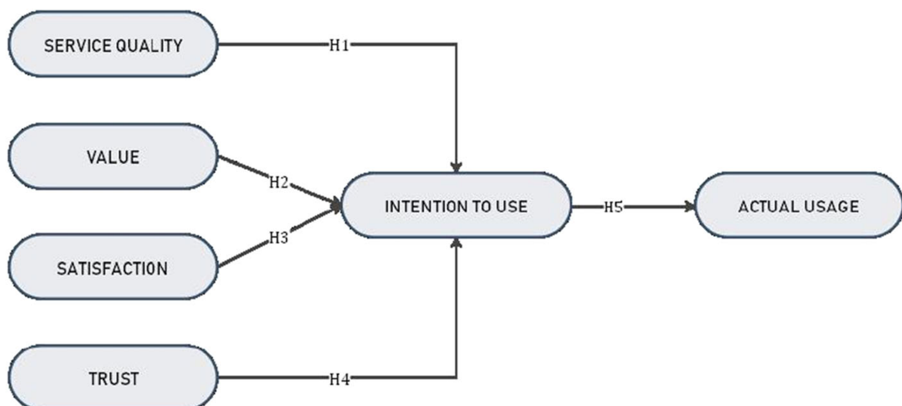

Fig. 1 Conceptual Framework

Table 5 Fit Indices for the Measurement and Structural Model

Measurements	Indices	Criterion	Results	
			Structural model	Measurement
Absolute fit measures	AGFI	> .80	.918	.925
	GFI	> .90	.938	.947
	RMSEA	< .08	.044	.038
Incremental fit measures	NFI	> .90	.939	.950
	CFI	> .90	.974	.983
	IFI	> .90	.975	.983
	CMIN/DF	< 3.00	1.674	1.497

Note: AGFI=adjusted goodness-of-fit index, GFI=goodness-of-fit index, RMSEA= root mean square of approximation of error, NFI=normed fit index, CFI=comparative fit index, IFI=incremental fit index

(NFI). These indices constitute the benchmarks for signifying the diverse categories of model fit measures as presented in Table 5. From Table 5, there is sufficient evidence that all measurements have good fit consistent with Wu (2010). Altogether, the study model finds good fitness in view of the recommendations of (Elkaseh et al. 2016). Hence, the measurement and structural models are acceptable (Table 6).

Hypotheses Testing and Effects

Next, the study tested the proposed hypothesis of the model. Figure 2 captures the path analysis of the structural model. The output of analysis indicates that, service quality (β=.321***, t=3.377, p<.001), Value (β=.139*, t=2.063, p<.05), trust (β=.215**, t=2.793,p<.01) and satisfaction (β=470***, t=6.893, p<.001) were all revealed to have a significant relationship with intention to use health insurance. These results are in support of H1, H2, H3 and H4.

Table 6 Path Analysis of Structural Model

Path	β	t-statistics	Hypothesis	Interpretation
SQ →INT	.321***	3.377	H1	Supported
VAL → INT	.139*	2.063	H2	Supported
TR→ INT	.215**	2.793	H3	Supported
SAT → INT	.470***	6.893	H4	Supported
INT → AU	.323***	7.454	H5	Supported
R^2				
INT	.212			
AU	.191			

*p < 0.05 **p < 0.01 ***p < 0.001

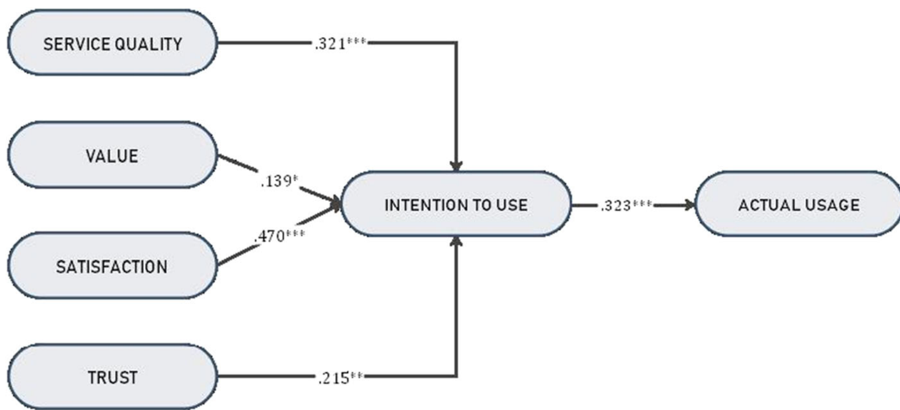

Fig. 2 Results of research model test with significance. **Note:** *p<0.05, **p<0.01, ***p,0.001

Furthermore, the study revealed intention to use health insurance to have a significant positive relationship with actual usage (β=.323***, t=7.454, p<.001). This is also in support of H5. The results indicated the support of all proposed hypotheses.

Test of the Mediating Effect

As part of the data analysis for this research, we conducted the mediating effect analysis to find out how intention could mediate between the Independent variables (IV) and the dependent variable (DV). Test of mediating effects adopted the criteria by Zhao et al. (2010) and Preacher and Hayes (2008).

As captured in Table 7, intention to use health insurance fully mediated the relationship between service quality and actual usage. Also, intention to use health insurance also fully mediated the relationship between health value and actual usage.

Similarly, the relationship between trust and actual usage was also fully mediated by intention. And finally, the relationship between satisfaction and actual usage was also partially mediated by intention to use health insurance.

Table 7 Mediating effect Analysis Results

Paths	Indirect Effect			Direct Effect			Results
	Size	LLCI	ULCI	Size	LLCI	ULCI	
SQ →INT→ AU	.055	.019	.098	.057	−.063	.176	Full
VAL → INT→ AU	.033	.005	.064	−.071	−.162	.021	Full
TR→ INT→ AU	.036	.008	.071	.010	−.079	.100	Full
SAT → INT→ AU	.108	.060	.164	.329	.218	.439	Partial

Note: Level of confidence=90%. LLCI/ULCI= lower/upper limit of confidence interval. SQ= service quality, HV= health value TR= trust, SAT= satisfaction, INT= intention, AU= actual usage

Discussion

The study seeks to investigate quality, value, satisfaction and trust dimensions regarding individual's intention and actual usage of health insurance. Health insurance usage has been a medium for protecting poor individuals and households in both developed and developing countries. Actually, it is touted as one of the ways to champion the course of universal health coverage, targeted at extending healthcare to all populations without anyone being left behind. Therefore, investigating predictors and possible influencers of intention and actual usage would be key to promoting healthcare for all people including the underprivileged, whiles informing structural mechanisms for policy and decision making. As such our study adopts a predictive modeling technique through SEM to predict intention and actual usage of health insurance.

Our study findings revealed service quality to have a significant positive relationship with intention to use health insurance. This finding suggests that, a greater degree of service quality administered by service providers, and enjoyed by service recipients or patients, has the tendency to increase their intention to use health insurance. The plausible reason for this finding could be that, populations in resource-deficient settings have the propensity to have gravid expectations of health service delivery, more than those in typical resource-rich urban areas. Given the situation that a majority of Ghana's poor population caught in the entangling web of extreme poverty situations live in the three Northern Regions (Ghana Statistical Service 2014), the relationship between quality concerns, and intention to use is understandable especially when situated within the context of the stark deprivity that characterise these areas in terms of lack of access to qualified health personnel (Nketiah-Amponsah et al. 2019).

Moreover, this result could be interpreted in the light of the dearth of health facilities in the study areas. Health service delivery in the three northern regions is complemented by health-related non-governmental organisations and other missionaries. Our study finding is consistent with prior studies in Ghana (Andoh-Adjei et al. 2018; Nketiah-Amponsah et al. 2019) and Iraq (Burnham et al. 2011). On this basis, individuals who perceive high quality of care are more likely to use than those with low quality perceptions (Dong et al. 2009). To this end, it could be said that, whenever people are assured of meeting their expectations from a particular health system, they are likely to use as well. Quality factors could be intersectional to include, but not limited to medication (Oriakhi and Onemolease 2012), service providers attitude (Adebayo et al. 2015), geographic location and proximity to service providers, as well as service provider-recipient communication (Andoh-Adjei et al. 2018), and long waiting times and efficiency of treatment regimes (Adebayo et al. 2015). In the views of Adebayo et al. (2015) and Arkorful et al. (2018), the attraction and retention of health insurance users requires for a constant intermittent neck turn look at quality factors.

Furthermore, statistical results of data analysis provide evidence to support the significant positive relationship between value and intention to use health insurance scheme. This finding implies that, value as a derivative of a general utility function, constitutes one of the primary factors that spur health insurance use among both enrollees and prospective enrollees. The plausible reason for the significance and centrality of value to health insurance use intention could be attributed to the largely unstable financial situation of under-resourced settings denizens who tend to place much value on social protection and pro-poor schemes meant to provide safety nets for them. In accounting for quality and value premium placed on health insurance, Dixon

et al. (2013) ascribes the variance in dimensions between the resource-rich and poor to resource availability. The relevance of value to insurance use is confirmed by (Andoh-Adjei et al. 2018 & Adebayo et al. 2015).

As hypothesized, statistical output of data analysis revealed satisfaction to be positively related to adoption intention. This is an empirical testimony to the fact that, as much as the policy sustainability of health insurance is largely based on subscribers, it is equally based on intention to use. The relevance of service seekers/recipient's satisfaction to intention to use health insurance in developing countries predominated by poor populations is confirmed in a study of community-based insurance study in Ethiopia (Badacho et al. 2016). The study confirms high satisfaction as likely to translate into high usage and increased healthcare utilization. Another study in Turkey (Jadoo et al. 2012) and Nigeria (Mohammed et al. 2011) also confirm the significance of satisfaction to health insurance use. Based on the study finding, it could be concluded that, greater satisfaction is likely to translate into expansion and increased coverage in healthcare access, which is cardinal to advancing universal health coverage (WHO 2005). For policy efficiency and effectiveness purposes, it becomes important for a constant investigation of factors associated with service seekers satisfaction to understand what actually underpins this dimension, to further inform service change and improvements (Zineldin 2006).

In relations to the study hypothesis, further interrogation revealed trust to have a positive significant relationship with intention to use health insurance. This result reveals trust as a predictor of intention to use insurance. The relevance of trust does not only act as a motivator, but also, helps in forming a positive intention towards health insurance use. Trust has been confirmed in prior health insurance studies as a determinant of individual and population use, and enrolment (Ozawa and Walker 2009). This could be construed to imply that, individuals, and even household heads with greater trust in the health insurance will be willing to pay and use (Ozawa and Walker 2009). To enhance trust in health insurance, (Arkorful et al. 2018) among other things recommend transparency and clarity regarding understanding of benefits, and eschewing negative behaviours (Adebayo et al. 2015). Trust is very cardinal to insurance. This is because, health insurance all over the world subsist on voluntary contributions from people. As such, given the financial contribution of people through premium payments, a reasonable degree of trust needs to be maintained to ensure patronage and sustainability (Adebayo et al. 2015).

And finally, the study results confirmed that, intention to use had a significant positive relationship with actual usage. It is however important to emphasize that, the combined effects of quality, value, satisfaction, and trust additively contribute to predict intention to use. Together, these further incrementally contribute to determine actual usage. As much as our study confirms the appropriateness of the study model, it also proves that, intention to use, and actual usage of the health insurance, is determined by a confluence of factors composed of quality, value, satisfaction and trust dimensions.

Conclusions

Our study presents a novel model to predict actual usage of the health insurance policy scheme in Ghana. The study's research model was segmented into three (3)

components to include independent variables: service quality, value, trust and satisfaction; Mediator (Intention to use health insurance), and dependent variable; actual usage. In the study model, analysis of data revealed that, quality, value, trust and satisfaction dimensions were critical to influencing intention to use, which in turn predicts actual usage of health insurance in Ghana. The study results suggest that, a higher degree of perception regarding service quality, value, trust and satisfaction are very central to intention to use (i.e. enrollment, renewal, retention and usage). The amalgam of these dimensions collectively and incrementally contributes to predicting intention to use and actual usage. Most importantly, the utilization of a structural equation model (SEM) provides additional originality of our study. The use of SEM, among other things help test and verify the research model. Furthermore, the use of SEM in this study helped in unraveling the complexities surrounding pro-poor social policy use, precisely within health policy domains. Our study employs SEM approach to test research hypotheses and identify statistically significant predictors, and empirically establish the model for not only policy purposes, but also, for guiding and providing insights for better decision-making regarding health insurance policy. Our study illuminates on relevant theoretical, as well as practical consequences for researchers, academicians, health policy makers and health sector stakeholders as well.

Implications for Theory and Practice

Our study has a plethora of theoretical implications. In view of the quality, value, satisfaction and trust dimensions employed for the study, it is confirmed that, they are sufficient predictors of intention and actual usage of health insurance in Ghana. Given that the health insurance is a health sector social policy intervention meant to provide protection for vulnerable and poor populations from health expenditures, it is obvious that, as much as individual, group or individuals or households are likely to repose a huge trust in health insurance, they will be expecting quality service in return. Moreover, it is also apparent that, in much the same way, they will be expecting a high value and satisfaction in return. In this study, as captured in the sociodemographic characteristic of study participants in Table 1, it is obvious that, majority of participants have low income levels. This is a confirmation that such populations will be expecting much from health insurance. The study results indicate that, users' intention to use would be predicated on quality, value, satisfaction and trust. As such, an integrated approach is employed to understand antecedents of actual usage of health insurance.

Furthermore, the study also has practical implications for health policy. The proposed study model, and a comprehension of the correlations between various decision variables sheds substantial light on possible considerations for making effective health policies. In Ghana, health insurance has enhanced an appreciation in the health seeking behavior of populations whiles extending protection to an appreciable segment of the population. That notwithstanding, perceptions of quality, value, satisfaction and trust have in recent times been of much concern. This simply implies that, a decline or depreciation in consumer perceptions regarding any of these dimensions could potentially discourage the enrolled and potential enrollees from enrolling, renewing, retaining and using health insurance, thereby posing policy sustainability threats. It is against this backdrop that our study proffer mechanisms for reforms. On this score, health policy makers from around the work, and more particularly in Ghana should

therefore tap into this study findings to formulate and further implement appropriate strategies to enhance actual usage of health insurance.

Limitations and Scope for Future Research

This is the first empirical study measuring quality, value, satisfaction and trust dimensions regarding intention and actual usage of health insurance. As much as the study has several theoretical and practical strengths which have been highlighted in the preceding discussions, it also has limitations which needs to be delineated to guide the conduct of future research and policy. Firstly, the data for the research was collected from respondents in Ghana. Also, the study used a questionnaire survey to elicit data from study participants composed of subscribers and non-subscribers. As such the generalization of the study findings mut be done cautiously. On this basis, the study strongly recommends future studies to consider concentrating on either subscribers or non-subscribers separately. And finally, given that the effects of sociodemographic variables were not considered, we suggest future studies to explore these factors. These however do not invalidate the study findings. This study could be a starting point for the conduct of further future empirical studies.

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Compliance with Ethical Standards

Conflict of Interest *None.*

Informed Consent Informed consent was obtained from all individual participants included in the study.

Ethical Approval All procedures performed in this study were in conformity with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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