# Perceived Value Proposition and Health Microinsurance Uptake by the Informal Sector Workers in Kenya

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**Abstract**

*The purpose of this paper is to analyse the relationship between perceived value proposition and health microinsurance uptake by the informal sector workers in Kenya. Health microinsurance plays a key role in boosting the long-term growth potential of an economy. In Kenya, the right to health is a fundamental human right guaranteed in its constitution. Overall results indicated that that perceived value proposition had significant (P-value 0.00) interaction with health microinsurance uptake. The study also found 13.7% interaction effect between perceived value proposition and uptake of health micro insurance. This study therefore, provides understanding to the industry players for the need to innovate and strategize on what alternatives may increase health microinsurance uptake and sustainability of renewals. It therefore contributes to the understanding of the industry players in developing marketing strategies that recognize the sector characteristics in terms of structure, size, age and ownership as factor that impact on the uptake of HMI.*

**Keywords:** Perceived Value Proposition; Health Microinsurance Uptake, Price, Willingness to Pay

## Introduction

### *Background of the Study*

Perceived value proposition (PVP), being the intercession between the customer's need and the value they should expect from a product of service. It is their overall assessment of product utility based on awareness, consideration, decision, utility and post-utility behaviour. PVP, therefore, is the customer's evaluation of merits of the product or service and its integral qualities that meets their need and expectation as compared to competition (Kopp, 2019). PVP boils down to price that the customer is willing to pay for the product, since perception of value is considered as a key separator of a product from the rest.

Insurance is considered globally a prime mover of economic development hence the insurance companies represent a large proportion of investment in various economies (Owuor, 2016). Health Microinsurance (HMI) products are forms of insurance for the low-income earners which falls under the domestic insurance regulatory body under the national laws (International Association of Insurance Supervisors, IAIS, 2007). HMI reduces vulnerability of the low-income earners through appropriate cover, simple to understand, low and flexible premium payments with suitable delivery channels (EFInA and Ukaid, 2018). HMI can also be contextualized as the Willingness to Pay (WTP), needs and priorities of workers in the informal sector most of whom are excluded from the conventional form of health insurance. The scheme

is voluntary with premiums suited to low incomes earners. Although the scheme is independent of the size of the underwriter, the scope of the risk covered, and channels of delivery, the products are designed to benefit the insured. Hence, the need for the community/group to be at the center of product design, in its operationalization and governance (Dror, 2014). In Kenya, households spend over one tenth of their budget on health expenditure annually. Signaling high reliance of out of pocket (OOP) expenses among the poor. This could be a reflection of WTP. Consumer's purchasing intention is based on the perceived value of the product and their willingness to pay for higher prices. In addition, loyalty paybacks are obtained when the perceived value is greater (Chuma and Maina, 2012). The primary component of customer value are: product quality, brand image and price. Companies can increase value by meeting or exceeding customers' expectation through delivery of innovative products (Asgarpour, *et al.*, 2015).

**Literature Review**

Relevant theories and empirical literature were reviewed to access the extent at which perceived value proposition effected the uptake of health microinsurance by informal sector workers in Kenya.

*Theory of Demand for Health Microinsurance for Informal Sector*

The Theory of Demand for Health Microinsurance for Informal Sector (Dror & Firth, 2014), propagates health micro-insurance for informal sector in low and middle-income countries (LMIC). The theory states that government and stakeholders wishing to propel demand for both voluntary and contributory health microinsurance in the informal sector of LMIC, can assist the process by propagation of bottom-up governance structures among communities in the informal sector and perception that health micro-insurance enhances welfare to the entire community, rather than to single individual. HMI is perceived as a necessary good, not a normal good, therefore the willingness to pay is determined by consensus on the amount that all or majority of the members could pay. Hence, group consensus influences personal decision to join and payment for the product and consensus is only made when the group is comfortable that the governance of the scheme will uphold their priority. Therefore, the approach reflects a difference from the classical top-down delivery model of HMI, in which suppliers design the product and also takes care of governance (Dror *et al.*, 2018). This theory of demand is therefore based on relevant and workable assumptions on the role of the groups in making financial decisions in the informal sector (Dror, 2018).

*Expectant Utility Theory (EUT:* Daniel Bernoulli (1954), developed ETU stating that the decision maker chooses between risky or uncertain prospects by comparing expected utility values. The concept of a micromort or a one-in-a million chance of death uses expectant utility to calculate and gauge acceptable mortality risks. While, the profit corresponding to the utility will equal the value of risk in question (Howard, 1980). EUT suggests that choices are coherently and consistently made by weighing outcome of action by the probability of payoffs. Therefore, EUT predicts that the better alternative will always be chosen (Einhorn &Robinson, 1981; Kehneman &Tversky, 1984). The study applied EUT since health microinsurance enrollment by consumers was found to be made by weighing outcome of purchasing an HMI policy and alternative which maximizes utility is selected. The change in health status of an individual increases the marginal utility of income available to spend on healthcare. Net welfare gain is achieved by transferring income of those with low marginal utility of income to those with higher marginal utility of income because of illness even though expressed as the expected-utility equivalent. Thus, the prospect of microinsurence paying for healthcare

represents an effective income to consumer, who in turn gets the motivation to purchase more healthcare since healthcare is a normal good (Nynam, 2006).

*The Diffusion of Innovation Theory*

Rogers (1962), developed Diffusion of Innovation (DOI) theory, explaining how over time, an idea or product mutates and diffuses through specific social system resulting to adaptation of the idea, behavior or products. He further in 2003 defined diffusion as a process in which new idea, product, practice, philosophy or an object is disseminated through structures over a period of time. Bringing into focus communication channels referring to the process of generating and sharing information whose ultimate goal is consensus. The perception of relevance of innovation by the potential adapters occurs when others like themselves adapt even though they may not be rationally connected. David and Greenstein (1990) opined that in the insurance industry, normalization and standardization procedures minimizes uncertainty thus creating network effect. Interventions such as HMI schemes that address healthcare issues is therefore developed and promoted to people in a social system with an aim of adoption. Diffusion of innovation theory was used in understanding the moderating effect of mobile telephone technology between PVP and uptake of HMI by the informal sector workers in Kenya.

**Empirical Review**

*Perceived Value Proposition and uptake of HM I*

Flint *et al.,* (1997), opined that-values are key enduring core beliefs, desired end-state or highest goals of customers that guide their behaviour. Customers perceive values by evaluating the merit of a product/service to meet his/her needs and expectation in comparison with competition (Kopp, 2019). Being the separator of one product from the rest perceived value comes down to price the customer is willing to pay for the product. Hence, the way a product is presented is a major contributor into the perceptions and aspiration of the target market. Owuor (2016), argued that consumers perceive insurance products as only suitable for the high-income earners thus negatively impacting it as a risk sharing mechanism. Negative perception played a dominant role on both low uptake of HMI products lower renewal despite the effort put on marketing. Kopp (2019) argued that customer's view on product's value is based on its ability to satisfy his/her utility. Therefore, perceived value pricing is an important element in marketing strategy especially to the informal sector workers. Casidy and Wymer (2019), opined that customer satisfaction is core to the consumer's WTP, especially when he or she is satisfied with the quality of the product or service, maintaining the WTP. Therefore, perceived value must consider customer's satisfaction which is meeting the needs, desires and expectations by consuming the product or service.

According to Dror and Firth (2014), understanding the value proposition and its payoff informs the choice to buy health insurance based on expected utility. Examining the technical knowledge, awareness of HMI and PVP by the informal sector were found to be key in decision making process. However, the value proposition of HMI maybe less clear when related to group-based interests. Occasional miss-selling, misinterpretations, product over-simplification may result to court cases. This challenges the assumption that adequate information and knowledge of understanding the value proposition of HMI is a given. Patients from all social-economic levels seeking healthcare services deserves correct and courteous treatment, safe medical conditions and sufficient information on their health status and treatment options (WHO, 2010). Products delivered in simple language that is easy to understand by both customer and distribution channel may contribute to increased uptake of HMI by informal sector workers. Furthermore, simplified claim adjudication and automation that reduces error

was found to have a positive impact on uptake of HMI. Features that limit claims exposure and adverse selection including waiting periods, deductibles, co-payments, benefit ceilings and exclusions should periodically be evaluated by underwriters since they complicate administration and undermines client value making it difficult to understand which healthcare expenses are covered under which circumstance (Gitahi, 2017; ILO, 2019).

Perception of quality of a product based on customers' expectation is a customer satisfaction tool. Customers compares product quality to their satisfaction standard only to be satisfied if the product quality exceeds these standards of measure (Haverila &Fehr, 2016). The more challenging the competition, the more a firm must improve its innovation embedded with customer's feedback. A firm increases its revenue by fulfilling customer satisfaction taking into account brand image as a strategic need that helps the company to create more values contributing sustainability as a competitive advantage. A successful brand therefore, is embedded with consumer trust in the intangible products, while, being cognizant that customers are better off visualizing and identifying brand images as a group of mental associations in their perception that increases the value of product. Therefore, a successful category of a brand image is capable of increasing awareness, profit optimization, generating values through product information, getting buying recommendations and differentiation of brands (Neupane, 2015). On the one hand consumers may not always accurately rate products, since they often make decisions on images drowned from memory instead of analyzing, products' attributes, they most of the time opt for rough approximations which is more convenient, but with veridicality cost, the image effect (Christian, 2008). Conceptually brand image is the most useful indicator in the willingness to pay empirically (Anselmson *et al.*, 2014). If a customer enjoys the experience and perceive the value of HMI, the word-of-mouth effect will positively impact uptake and renewal (Etrata &Montemayor, 2019).

Associations in the customer's perception to increase the value of a product or service. Brand image is also an intangible and conditional asset for a company that is capable in generating company profitability and compromising functional and emotional value. Brand Image is a strategic need that helps companies to create more value to customers and also to develop sustainable competitive advantage. A successful brand will increase consumer trust in intangible products and services. Customers will be better in visualizing and identifying their services (Shahroudi &Naimi, 2014).

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The objective of pricing HMI products is to both derive rates that will sufficiently cover all costs and the generation a fair return for all partners. The products should produce surpluses that will finance future growth, building up contingency reserves for unexpected claims and fluctuations not covered by reinsurance. In theory, the projected interest income should play a role in the present value calculation, since the effect of interest increases with product duration due to compounding effect, however, it is not as significant for pricing short term products, especially those without a savings component (Wrede *et al*.,2014). However, the complexity in pricing HMI products lies in estimating the true expected claim amount and client behaviour. The experience is anchored on the management of the HMI program. The adequacy of the price depends most of the time on the processes of selling, administering and servicing the product. A good strategy for new product entails calculating the rate as accurately as possible with a modest margin of 10 to20 per cent, so as to make sure that there is only a slim chance of future rate increases. If the calculated rate turns out to be near correct, then the strategy will permit faster surplus build-up. In the lower-end of the market, price constitutes a significant influence on buying behaviour, hence, this factor that call for immediate attention to obtain success in this market (Bisschoff, 2013). embedding mobile technology could be an enabler in customization of premiums informed by actual behavior (Mohan and Noor, 2015).

Willingness to Pay (WTP) is the maximum amount people are willing to spend to acquire a service. Dror and Koren (2012) reviewed 20 papers describing 14 experimental field studies on what elicits WTP for HMI among low-income segment in developing countries concluding that there was no gold standard method to quantify the expected WTP in different settings. Binnendijk *et al.,* (2013), suggested that the determinants of the WTP are based on each community's food expenditures, this called for reasonable approximation of WTP in the locations at around 4.5 percent of food expenditures. Dror (2018), further found that WTP by rural households in LMICs was below 2 percent of the Gross Domestic Product Per Capita (GDPPC) per household per year. Nosratnejad *et al*., (2016), argued that perceived value pricing, is the pricing of a product on the basis of what a customer is willing to pay, proposing that WTP should be determined as a percentage of GDPPC, which is readily available in most countries. Dror and Firth (2014), found that increase in WTP for HMI would depend on increases of the Association's perception of the welfare gains, rather than on higher input prices of providers. The authors further argued that only when communities are comfortable about the governance of their health insurance, does is sets the conditions for WTP, in turn determining the supply of health microinsurance. The poor quality of health centers is considered an impediment to demand for HMI.

**Methodology**

The study population was 7,399,347. Stratified sampling was used to select the study sample of 1392 respondents comprising owner/managers and officials of Chamas which included, chairperson, secretary and treasurer of micro and small enterprises (MSEs) in all the seven regional blocks and Nairobi. Descriptive and causal research design was adopted in order to realize the research objectives. Matrix type of questionnaires of Likert scale of 1- 5 were self-administered to respondents using drop and pick method. Reliability of the research instrument was tested and Cronbach alpha was found to 0.7 meaning that the instruments were reliable. Data was collected and analyzed using descriptive and inferential statistics

## Findings

### *Factor Analysis for Perceived Value Preposition*

In this study Perceived Value Proposition was measured using 11 items (variables). The KMO Measure of Sampling Adequacy the statistic that indicates the proportion of variance in the variables that might be caused by the underlying factors was found to be 0.938 closer to 1.0, indicating that factor analysis was ideal for the data. Bartlett's test of sphericity which indicate that variables are unrelated, reported small values (less than 0.05) of the significance level indicating that factor analysis was useful with the data as reported on Table 1.

**Table 1: KMO and Bartlett's Test**

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .938 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 7477.977 |
| | Df | 55 |
| | Sig. | .000 |

Each item had a quality score (Eigenvalue) of which items with high Eigenvalues represents the real underlying factor. Table 2 reported the total variance explained. Only components with high Eigenvalues are likely to represent a real underlying factor. A common rule of thumb is to select components whose Eigenvalue is at least 1 (Orean, 2018). Out of the 11 variables used to measure Perceived Value Preposition, one underlying factor emerged with an Eigenvalue of at least 1. The other components having low quality scores- were assumed not to represent real traits underlying the 11 items in the questionnaire.

**Table 2: Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.873 | 53.392 | 53.392 | 5.873 | 53.392 | 53.392 |
| 2 | .829 | 7.540 | 60.932 | | | |
| 3 | .780 | 7.086 | 68.019 | | | |
| 4 | .716 | 6.505 | 74.524 | | | |
| 5 | .626 | 5.688 | 80.212 | | | |
| 6 | .485 | 4.407 | 84.619 | | | |
| 7 | .444 | 4.033 | 88.652 | | | |
| 8 | .426 | 3.874 | 92.526 | | | |
| 9 | .332 | 3.015 | 95.541 | | | |
| 10 | .259 | 2.351 | 97.892 | | | |
| 11 | .232 | 2.108 | 100.000 | | | |

From the Table 2, 53.39% of the variance is accounted for by one factor. Such component is considered “scree.” This scree plot allowed the researcher to examine the pattern of decreasing variability attributable to each successive component as shown in Figure 1 where the eigenvalues is plotted on the y-axis and the numbers of factors plotted on the x-axis, scree plot always displays a downward curve.

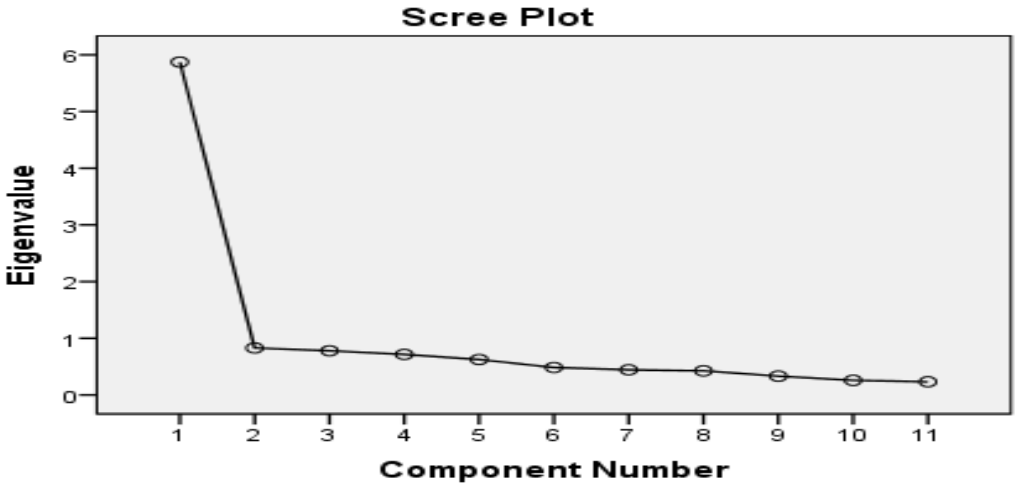


**Figure 1: Scree Plot Confirming the Result**

The scree plot graphs the eigenvalues against the factor number. From the scree plot we see that the first component has Eigenvalues over 1. After that -component 2 and onwards- the Eigenvalues drop off dramatically. The sharp drop strongly suggests that 1 factor underlie our questions. To address the extent to which the underlying factor account for the variance of the 11 input variables, the $h^2$ factors (sum of squared factor loading for the variables) which are called communalities in factor analysis are reported in Table 3.

**Table 3: Communalities**

| | Initial | Extraction |
|---|---|---|
| The enterprise will be more concerned with the amount of premium and the cover that it will provide for the risk to their staff | 1.000 | .605 |
| The enterprise is willing to buy health insurance when there is consensus that the scheme is governed by rules our staff understands | 1.000 | .661 |
| Health insurance is important to the enterprise | 1.000 | .447 |
| The enterprise will buy health insurance for staff only when it is relevant | 1.000 | .263 |
| The enterprise will consider a loan to buy health insurance | 1.000 | .253 |
| The enterprise will buy health insurance product that is designed to allow payment according to ability of the staff. | 1.000 | .616 |
| The enterprise will buy health insurance when there is consensus that the scheme is governed by rules our staff understand. | 1.000 | .628 |
| The enterprise will prefer a product with individualized attention | 1.000 | .349 |
| The enterprise will be concerned with the speed of processes and of response to medical needs | 1.000 | .675 |
| Enterprise will be concerned on how well the plan is run, including customer service, access to needed information and network providers. | 1.000 | .666 |
| The Enterprises will be concerned on how well the providers manage member healthcare, services and monitoring conditions. | 1.000 | .710 |

The first extraction implies that predicting the enterprise will be more concerned with the amount of premium and the cover that it will provide for the risk to their staff. The component by multiple regression, is explained by factors $h^2$ =0.605 which is the variables communality. Variables having low communalities -say lower than 0.40- don't contribute much to measuring the underlying factors. (Bosten *et al*., 2017) removing such variables from the analysis should

be considered. Thus, the items the enterprise will buy health insurance for staff only when it is relevant with extraction of 0.263, the enterprise will consider a loan to buy health insurance with extraction of 0.253 and the enterprise will prefer a product with individualized attention with extraction of 0.349 will be expunged from further analysis. Table 4 is a component matrix which indicates to which extent two variables are linearly related. The table reflects the weighted contribution of every question to the PVP.

**Table 4: Component Matrix[a]**

| | Component |
|---|---|
| | 1 |
| The Enterprises will be concerned on how well the providers manage member healthcare, services and monitoring conditions. | .843 |
| The enterprise will be concerned with the speed of processes and of response to medical needs | .822 |
| Enterprise will be concerned on how well the plan is run, including customer service, access to needed information and network providers. | .816 |
| The enterprise is willing to buy health insurance when there is consensus that the scheme is governed by rules our staff understands | .813 |
| The enterprise will buy health insurance when there is consensus that the scheme is governed by rules our staff understand. | .792 |
| The enterprise will buy health insurance product that is designed to allow payment according to ability of the staff. | .785 |
| The enterprise will be more concerned with the amount of premium and the cover that it will provide for the risk to their staff | .778 |
| Health insurance is important to the enterprise | .669 |
| The enterprise will prefer a product with individualized attention | .591 |
| The enterprise will buy health insurance for staff only when it is relevant | .512 |
| The enterprise will consider a loan to buy health insurance | .503 |

***ANOVA for Perceived Value Proposition***

To test for hypothesis that Perceived Value Proposition and uptake HMI, Logarithm of Uptake was regressed against Perceived Value Proposition and the results were found to be significant (F=207, p value=0.001) as shown of Table 5.

**Table 5:ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 29.513 | 1 | 29.513 | 207.935 | .000[b] |
| | Residual | 184.797 | 1302 | .142 | | |
| | Total | 214.309 | 1303 | | | |

***Log-Linear Relationship***

When log-linear regression was estimated, a couple outcomes for the coefficient produced the most likely relationships: This log-linear function depicted a positive impact of 22.6% in Central, 12.3% in Narok-Kajiado and 10.6% in Lake region which were both significant at p-value<.005. while the other regions except for Nairobi which had a negative impact PVP were found to have a positive impact but not significant with p-values>.005 as shown on Table 6.

**Table 6: Regional Perceived Value Proposition**

| Region | R squared | Adjusted R squared | B0 | Unstandardized B1 | Standardized B1 | Sig |
|---|---|---|---|---|---|---|
| Nairobi | .022 | .018 | 1.688 (0.00) | -.071 | -.147 | .019 |
| Lake | .141 | .137 | .918 (0.00) | .106 | .375 | .000 |
| Pwani | .001 | -.008 | 1.295 (0.00) | .011 | .025 | .786 |
| Central | .370 | .369 | .286 (0.00) | .226 | .609 | .000 |
| Narok Kajiado | .088 | .077 | .684 (0.00) | .123 | .296 | .005 |
| North Rift | .142 | .133 | 1.057(0.00) | .104 | .377 | .000 |
| Frontier | .059 | .046 | 1.156(0.00) | .058 | .242 | .035 |
| South Eastern | .003 | -.011 | 1.778 (0.00) | .019 | .055 | .643 |

***Bivariate Regression Analysis on PVP and HMI***

Table 7 shows a strong significant (P-Value, 0.00) relationship between Perceived Value Proposition and Health micro-insurance uptake.

**Table 7: Bivariate Regression Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .786 | .040 | | 19.825 | .000 |
| | Perceived Value Proposition | .134 | .009 | .371 | 14.420 | .000 |

**Discussion**

This study findings demonstrates that the PVP significantly influence uptake of HMI among the informal sector in Kenya. To test for the hypothesis that Perceived Value Proposition and HMI uptake, Logarithm of Uptake was regressed against PVP and the results were found to be significant (F=207, p value=0.001) and when log-linear regression was estimated, a couple outcomes for the coefficient produced the most likely relationships: depicting a positive impact of 22.6% in Central, 12.3% in Narok-Kajiado and 10.6% in Lake region which were both significant at p-value<.005. While the other regions except for Nairobi which had a negative impact PVP were found to have a positive impact but not significant with p-values>.005. Finally Bivariate Regression Analysis on PVP and HMI showed a strong significant (P-Value, 0.00) relationship between PVP and Health micro-insurance uptake. Industry Captains must therefore take cognizance of this interaction to inform the formulation of their promotion strategies. Both political, economic changes, social dynamics, legal provision and underlying environmental conditions must be regularly analyzed and adapted by the industry players to be able to sustain increment of uptake. Secondly, the findings are consistent with previous studies, which opined that that determinant's effectiveness may be different from one region to other hence the limitation. For example, Nairobi reported 13.7% interaction effect between PVP and uptake of HMI however when moderated by MTT the interaction increased to 18.5%.

**Conclusion**

This paper investigated Perceived value proposition as a determinant of uptake on health micro-insurance products. PVP being the intercession between the customer's need and the value they expect from a product, taking into account the overall assessment of product utility based on

awareness, consideration, decision, utility and post-utility behaviour. In all the region except for Nairobi PVP was found to influence uptake of HMI this was in agreement with Koop (2019), that perceived value is the customers' evaluation of the merits of a product or service and its integral qualities to meet their needs and expectations in comparison with competition. On the other hand, consumers perceive insurance as only suitable for high-income earner, precipitating a negative impact to the risk sharing mechanism. Negative perception was found to play a dominant role in limiting the uptake (Owuor, 2016). Therefore, one's ability to understand the value proposition and its payoff informs the choice to buy HMI based on expected utility, anchored on the levels of technical knowledge; awareness; perception of the value proposition and simplified language that makes product easier to understand for both customer and distribution channel (Dror &Firth, 2014; ILO, 2019). When a client's experience is filled by a positive perception; the word-of-mouth effect positively impact both uptake and renewals. Clear bidirectional communication, support to clients during the claims process and shortened turnaround times was found to improve client experience taking note that consumer's willingness to pay for higher prices and loyalty only occurs when perceived value is greater (Chuma & Maina, 2012; Etrata &Montemayor,2019). Hence the hypothesis that Perceived Value Proposition has no effect on the uptake of health microinsurance among the informal sector in Kenya was statistically rejected in this study.

This study was to identify the determinants of uptake of health micro-insurance among the informal sector and respondent were drawn only managers/owners of micro and small enterprises thus excluding other players including employees of MSEs, micro-insurance underwriters and policy makers. This gap calls for future research to further analyze the determinants of uptake of health microinsurance by the informal sector workers in Kenya.

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