INCOME AND LITERACY: UNDERSTANDING THE DILEMMAS AND BELIEFS IN MARKETABILITY OF ORTHODOX HEALTHCARE PRODUCTS

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ABSTRACT

The coexistence of traditional and orthodox healthcare practices in Nigeria raises questions about the cultural, ethical and socioeconomic factors influencing acceptance of orthodox healthcare products. This study examines the issues of the dilemmas and beliefs with the perceived marketing of orthodox healthcare products, taking income and literacy into account. A cross-sectional survey of 332 adult consumers was used. Descriptive statistics, factor analysis, OLS, and hierarchical and logistic regression were used in the analysis. The results reveal a significant effect of ethical beliefs after controlling for income and literacy level while also confirming the probabilities of predictor factors being in the female gender group, thereby presenting a significant contribution to healthcare management and marketing theory by clarifying the contextual factors that situates gender for required healthcare interventions. The findings highlight the relevance of ethical concerns in consumers' evaluations of orthodox healthcare products, while also showing the need to interpret literacy and cultural belief results in light of measurement and sampling limitations. The study contributes context-specific evidence to healthcare marketing research and suggests that communication, trust and ethical conduct warrant further investigation.

Keywords: Culture, Gender, Healthcare Products, Traditional Medicine

JEL Codes: H51, I11, I12, M31

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GELİR VE OKURYAZARLIK: ORTODOKS SAĞLIK HİZMETİ ÜRÜNLERİNİN PAZARLANABİLİRLİĞİNE İLİŞKİN İKİLEMLERİ VE İNANÇLARI ANLAMAK

ÖZET

Nijerya'da geleneksel ve ortodoks sağlık uygulamalarının bir arada bulunması, ortodoks sağlık ürünlerinin kabulünü etkileyen kültürel, etik ve sosyoekonomik faktörler hakkında soruları gündeme getirmektedir. Bu çalışma, gelir ve okuryazarlık düzeyini dikkate alarak, ortodoks sağlık ürünlerinin algılanan pazarlamasıyla ilgili ikilemleri ve inançları incelemektedir. 332 yetişkin tüketiciden oluşan kesitsel bir anket kullanılmıştır. Analizde tanımlayıcı istatistikler, faktör analizi, OLS ve hiyerarşik ve lojistik regresyon kullanılmıştır. Sonuçlar, gelir ve okuryazarlık düzeyi kontrol edildikten sonra etik inançların önemli bir etkisini ortaya koyarken, aynı zamanda tahmin edici faktörlerin kadın cinsiyet grubunda olma olasılığını da doğrulamaktadır; böylece, gerekli sağlık müdahaleleri için cinsiyeti konumlandıran bağlamsal faktörleri açıklığa kavuşturarak sağlık yönetimi ve pazarlama teorisine önemli bir katkı sunmaktadır. Bulgular, tüketicilerin ortodoks sağlık ürünlerini değerlendirmelerinde etik kaygıların önemini vurgularken, aynı zamanda okuryazarlık ve kültürel inanç sonuçlarının ölçüm ve örnekleme sınırlamaları ışığında yorumlanması gerektiğini de göstermektedir. Bu çalışma, sağlık hizmetleri pazarlama araştırmalarına bağlama özgü kanıtlar sunmakta ve iletişim, güven ve etik davranış konularının daha fazla araştırılmayı hak ettiğini öne sürmektedir.

Anahtar Kelimeler: Geleneksel Tıp, Kültür, Sağlık Ürünleri, Toplumsal Cinsiyet

INTRODUCTION

Healthcare products, especially orthodox medicines, are instrumental in the healthcare system and structures of a nation and the world at large. Products tend to reflect cultures as consumers express their cultural identity through the products (Fahimeh et al., 2016). Culture influences consumers' purchases while revealing important indicators such as why, how, when, whom they purchase from, and where (Singh et al., 2020). This highlights the importance of cultural sensitivity, as Latif (2020) considers it a prerequisite for anyone seeking changes in health matters. Essentially, the values, beliefs, and dilemmas embedded in cultures define a society, thereby championing culture as a vital cog in peoples' conduct and performance of activities (Khan & Law, 2018). Consequently, the role of culture in the healthcare system is paramount, with extant literature revealing the driving nature of cultural aspects in increasing mortality rates in the developing nations (Oteh et al., 2021), while further evidence reveals the weight of cultural narratives contributing to the asymmetry between traditional healthcare products and orthodox healthcare products. Mordeniz (2019) reveals that traditional healthcare solutions are considered harmful in developing nations because of the absence of non-scientific approaches, but evidence from literature such as Mothibe and Sibanda (2019) reveals its patronage by indigenous people as an alternative source. The underlying factor is that cultural elements play a significant role in healthcare services, with the evidence of religious beliefs impacting healthcare products and services (Asakitikpi, 2019), with evidence of its impact in developing countries in areas such as non-acceptance of vaccination (Faasse & Newby, 2020).

The challenges in Nigeria's healthcare sector have not been helpful in ameliorating the challenges associated with cultural coloration in acceptance and non-acceptance of orthodox healthcare products. The challenges have become a worrying sight recently, with several medical practitioners seeking greener pastures outside the country, thereby creating more loads for the understaffed sector. For instance, more than 4000 medical practitioners migrated to other nations in 2024, with further evidence revealing a 200% brain drain from 2023 to 2024 (Sahara Reporters, 2025). The crisis in the healthcare sector is often associated with poor healthcare funding and inadequate healthcare infrastructure and shortages of medical professionals that eventually contribute to health challenges in Nigeria (Aranmolate, 2025). Consequently, the ratio of doctor-patient consultations worsened to 1:5000 (Oloveze et al., 2021) against 1:1000 suggested by the World Health Organization (Kumar & Pal, 2018), thereby increasing stress on medical practitioners while compounding the burden of health challenges (Ajisegiri et al., 2023).

In Nigeria, market acceptance of orthodox healthcare products coexists with traditional medicine (Abhadionmhen et al., 2025), which has become so embedded in local communities whereby indigenous people's preferences for traditional treatments are shaped by cultural norms. For instance, studies such as Ajima and Ubana (2018) buttress the vital role of culture in healthcare, while recent studies such as Abhadionmhen et al. (2025) reveal the significant role of cultural elements and educational levels in traditional and orthodox healthcare solutions to ailments in Nigeria, with more alignment to the effectiveness of traditional medicines given the historical foundations of traditional medicine in Nigeria. Therefore, cultural dynamics and deeply rooted cultural beliefs can impact healthcare decisions by dictating individuals' choice for traditional medicine or orthodox medicine. The affordability of traditional medicines and their culturally rich contexts are an allure to indigenous people, particularly those in the rural areas. Abhadionmhen et al. (2025) suggest the existence of competition between traditional and orthodox medicine, thereby adding another layer of complexity such that orthodox healthcare products enjoy scientific rigors in their production, while traditional healthcare products connect majorly with deep-rooted cultural values and cultural significance. For instance, the cultural connotation of the cause of ailment shows illnesses connected to supernatural causes favor traditional healthcare products (Hernandez & Gibb, 2020), with the severity of ailment and the goal to stay healthy being one of the key drivers of choice between traditional and orthodox healthcare products (Afolabi et al., 2020). The implication is on the marketing of the healthcare products, as Castro and Sáiz (2020) reveal that the understanding of cultural values is instrumental in marketing decisions, while Kaur and Chawla (2016) confirm the significant role of culture in consumers' choice of products and their motivation to be associated with the product. Marketing offers significant contributions to healthcare upon appropriate application and implementation (Bairagdar et al., 2021) and has proven to drive market performance.

Although previous literatures have considered the role of culture, socioeconomic factors and health-seeking behaviour in the use of traditional and orthodox healthcare options, the relationship between cultural and ethical beliefs and consumer's response to orthodox healthcare products remains context dependent. There is no doubt that income is a critical factor in context of affordability, while literacy may influence how individual encounter and interpret health-related information. Thus, they may complicate the observed relationship between beliefs and consumer evaluation of healthcare products. Studies such as Enebeli (2025) revealed the role of literacy on health-related behaviors, with high literacy being associated with individuals' search for medicine-related information more than those with low literacy. Whilst it is important to distinguish between general literacy from health literacy, which concerns the ability to access, understand, appraise and use health information, this study focuses on how income and literacy; it does not assume however that the measures capture every dimension of consumer health knowledge or access to care.

In the light of the above, this study examines the relationship between cultural beliefs, ethical beliefs and the perceived marketing of orthodox healthcare products using income and literacy as controlled variables. Our study makes key contributions that are both empirical and context specific. First, it assesses whether the relationships between the focal belief constructs and the marketing measure remain after accounting for the selected socioeconomic controls. It also reports an exploratory logistic analysis of whether selected healthcare-related factors are associated with respondents' gender classification. This secondary analysis is distinct from the principal model and is interpreted separately.

The study is guided by the following questions:

1. What is the association between cultural beliefs and the perceived marketability of orthodox healthcare products?
2. What is the association between ethical beliefs and the perceived marketability of orthodox healthcare products?
3. Do the associations of cultural and ethical beliefs with perceived marketability remain after controlling for income and the study's literacy measure?
4. To what extent are selected healthcare-related and demographic factors associated with respondents' gender classification in the logistic regression model?

LITERATURE REVIEW

The context of culture encompasses the beliefs, norms, traditions, values, and customs that are shared by people bound in a common location. Therefore, culture is that complex whole that includes knowledge, beliefs, arts, law, morals, customs, and any other capabilities and habits acquired by man as a member of society (Hawkins et al., 1983). There is evidence of cultural beliefs holding a degree of interconnectedness for people and peaceful cohabitation. For instance, cultural beliefs call for

understanding group values and identity formation (Nikiforova & Voronova, 2023). This shows the existence of differences in cultural beliefs among different people. It is one of the foundations of behavioral formation and social identities, especially where it is a practice or ritual that is passed through generations. It helps in shaping people's actions and reactions to events while also accounting for differences in people's reactions to the same event/object. This is because it reflects history, faith, social interactions (Salmorin & Gepty, 2023), perception, idea formation, and understanding of real-life cases (Ugwu & Okpala, 2024). Consequently, Eche (2023) concludes that cultures should be understood from within and not outside. The argument points to the fact that concepts about culture play a significant role in self-image and the formation of a person's identity. For instance, storytelling and oral traditions and cultural beliefs are intended to be preserved and transmitted to ensure the core essence of cultural knowledge is not lost through time. Yu and Stoet (2020) argue that such practices deepen continuity and cultural affiliations despite the passage of time. The implication on healthcare is vital given that the global healthcare system and its efficiency are impacted by cultural elements such as social norms and values (Okeme et al., 2024). Reports indicate the deep-rooted nature of social norms in traditional beliefs and practices, given that Barnes (2022) reported about 70% of a nation's population being influenced by traditional medicines in primary healthcare needs. The resort to herbal practices is revealed in some cases to be a cause of poor engagement of indigenous people to formal healthcare delivery (Adewuyi et al., 2017). The necessity placed on the aspects of cultural beliefs such as norms and values are essential in understanding health-seeking behavior. This calls for cultural competence of healthcare providers and marketers of healthcare products. Cultural competence is instrumental in reducing health disparities, especially in places with diverse populations, given that the diversity provides a unique attribute that is required to address the cultural needs of patients. For instance, such cultural competence is proven to encourage patients' satisfaction with healthcare delivery (Betancourt et al., 2003).

Cultural dilemmas are conflicts that arise where there are alternative courses. It arises when there is a palpable disparity and conflict between traditional healthcare practices ingrained in cultural approaches to healthcare products and orthodox healthcare practices that follow scientific proofs. Evidence from literature shows a combination of both practices in rural areas of developing countries, while preference is more on traditional healthcare products because of their low cost, cultural fit, and perceived accessibility (Okojie & Lane, 2020). Cultural beliefs have the ability to shape how individuals perceive the efficacy and risk associated with medicines, thereby becoming a ground for skepticism toward biomedical products. Uzochukwu et al. (2015) suggest that besides cultural beliefs, other factors such as education and healthcare access are significant barriers to healthcare management and accessibility, especially in the rural areas. In Nigeria, about 64% of Nigeria's population resides in the rural areas (Badiora & Abiola, 2017), and it is important in understanding the cultural impact on healthcare and, ethical dilemmas in healthcare products. The importance extends to broader issues of equitable healthcare access. For instance, studies reveal that ethical practices such as medicine

dispensing behavior are notable areas of ethical practices, as Popoola et al. (2025) reveal that the drivers are poor interprofessional collaboration between physician and pharmacist, pressure from management to meet sales targets, unethical profit-driven initiatives, and poor working conditions. In this case, limited consumer protection raises ethical concerns.

In controlling the effect of income, our study recognizes that income can shape health-seeking behavior. First, income is a vital component in households and the economy while also serving as economic capital. It helps in defining the affordability of items given that low-income consumers tend to align with traditional beliefs, as they tend to be price-sensitive and lean more toward cheaper sources such as traditional solutions to health challenges that are locally perceived to be cheaper. For instance, lower-income groups favor traditional healthcare practices on account of being culturally embedded and affordable (Abhadionmhen et al., 2025). Extant literature reveals that households that are economically disadvantaged lean more on low-cost healthcare options such as traditional medicines, while economically advantaged individuals lean more on formal healthcare services (Nwokolo et al., 2025). Further, high cost, accessibility of healthcare facilities, culture, and mistrust of healthcare professionals affect orthodox health-seeking behavior (Onoka et al., 2013), which contributes to delay or avoidance, thereby leading the individuals to resort to alternatives such as the traditional remedies (Onwujekwe et al., 2010). In essence, we suggest the absence of income on the orthodox healthcare product acceptance and dilemmas, such as cultural and ethical dilemmas, although studies reveal the chances of wealthier individuals investing more in orthodox healthcare products compared to poorer households (Kankeu et al., 2016; Nwokolo et al., 2025). In relation to health literacy, it is instrumental in the understanding of healthcare information and evaluation of product claims. With higher literacy there are chances of reduced reliance on self-medication and misinformation. As consumers become more literate, they may resort to orthodox healthcare products, given that they may lean more on scientific approaches in medical practices and resort to clinically tested pharmaceutical healthcare products rather than culturally endorsed healthcare solutions. Thus, given the impact of education, higher-literate individuals may likely question cultural beliefs on traditional healthcare practices by indulging in scientific comparisons with the orthodox healthcare practices. Thus, where the literacy level is low, it is possible to reinforce individuals' reliance on traditional cultural beliefs and norms on healthcare practices. Extant literature supports this assertion on literacy positively shaping healthcare decision-making and evaluation of health information (Berkman et al., 2011). For instance, Akakpo and Neuerer (2024) suggest that health literacy is connected to health-seeking behaviors. However, extant literature also shows that high literacy specifically (high education) does not always translate to effectiveness of health literacy (Enebeli, 2025), thereby indicating the disparity between literacy and health literacy and supporting our decision to control for literacy to understand real effects of the predictors.

Ethical beliefs are rising concerns, especially where sharp practices are adopted by healthcare practitioners by taking advantage of weak regulatory frameworks in the sector. It evaluates the morality

of what healthcare agents and practitioners do and what people believe while also suggesting unethical behavior from holding beliefs that are insufficiently proven. They can be motivated by social elements and personal factors, but the major aspects border on the adequacy of evidence that supports claims and irrational beliefs having the potential to cause harm to others. In healthcare, ethical beliefs are often rooted in confidentiality, truth-telling, professional competence, and a sense of empathy and sensitivity. However, the core ethical principles encompass autonomy, justice, beneficence, and non-maleficence with the understanding that places human life as a priority (Varkey, 2021). Consequently, ethics is inseparable in healthcare, while beliefs are also inherent in healthcare delivery. For instance, the ethics in African healthcare prioritizes human treatment of spirit, body, and soul (Omonzejele, 2008), creating a balance between human-world and spirit-world, and focuses on community health by engaging them in decision-making (Bourke, 2023). Following the ethical inquiry of Omonzejele (2008), healthcare in Africa, especially the traditional healthcare, connects to diseases and its link to religion, divination, and sacrifices. This presents an ethical challenge to non-Africans practicing healthcare in Africa because African ethical beliefs on health, disease, and medical treatment are linked to African metaphysics as revealed by Iwu (1982) and Omonzejele (2008), following Iwu's seminar on African ethnomedicine. However, ethical concerns represent moral concerns held by people towards healthcare, which can be seen in the integrity of healthcare practitioners, the illegality of medicines and medicine counterfeits, and excessive/exploitative markups (Oteh et al., 2021). The implication is that these concerns impact consumption behavior (Budhathoki, 2019), with critical areas such as personal values and health philosophies impacting buying behavior (Van Rooij & Fine, 2018; Mumley, 2019). The decision-making of consumers is critical to the success of companies, as they tend to affect the choice of vendor, quantity to purchase, products to purchase, and the factors that determine their continuance behavior.

Marketing is an essential cog in every business. It represents the exchange transaction in which the parties to the transaction gain mutually. Its strategies are instrumental in the success of firms. It is fundamental in shaping cultural values that influence norms and behavior (Bensalem & Benouhiba, 2025). One of its benefits is that it provides principles to enable firms to adapt to cultural values that facilitate company success (Cheong & Park, 2017). In essence, consumer choices and preferences may differ, especially where there are alternative choices available to the consumers. They may be attracted to the products that conform with their culture, thereby calling for cultural sensitivity of marketers. Latif (2020) concludes that cultural sensitivity is essential in health matters.

The study was underpinned by the theory of cultural relativism as a perspective for interpreting beliefs and practices within their social and cultural contexts. In doing this, the study is guided by not treating one healthcare tradition as the default standard against which all others should be judged but encourages attention to the meanings that individuals attach to health, illness, treatment and the sources of healthcare knowledge. In the present context, this perspective helps explain why consumers' evaluations of orthodox healthcare products may be influenced by culturally situated understandings of

illness and treatment. It does not, on its own, specify the direction or strength of a statistical relationship between beliefs and marketability. The proposed relationships therefore also rely on the consumer-behaviour reasoning that beliefs and evaluations can be associated with product acceptance and choice.

Cultural relativism was articulated in the 20th century by Franz Boas in 1887 (Boas, 1887), and it factors in absolute evaluation of cultures as well as critical examination given that cultural practices vary. Basically, cultural beliefs and practices from the perspective of cultural relativism theory are about the non-superiority of one culture over another.

There is no doubt that cultural practices in relation to healthcare products differ significantly between African practices and Western practices. Whilst there is the existence of some sort of justice and morality in all cultures, the values of most cultures tend to coincide and differ as well. This is because all cultures have elements of the concept of justice (Brosnan & De Waal, 2003). Whether there are differences or not, cultural relativism points out that culture defines the concepts of justice, equality, and morality in cultures. This study aligns with the thinking that cultural relativism must arise from local paradigm given that culture is local.

Cultural beliefs and ethical beliefs are treated as distinct constructs in empirical analysis. Cultural beliefs concern the influence of culturally situated norms, values and understandings on healthcare choices, whereas ethical beliefs concern respondents' evaluations of ethical issues in healthcare, including the conduct of healthcare professionals and concerns such as confidentiality, trustworthiness and appropriate practice. These constructs should not be treated as interchangeable: cultural beliefs concern the interpretive context of healthcare decisions, while ethical beliefs concern evaluations of what is considered proper, trustworthy or fair in healthcare provision. The study therefore examines their separate associations with the marketability measure while accounting for income and the available literacy measure.

The theoretical expectation is that beliefs relevant to consumers' understanding of healthcare and evaluations of healthcare practice may be associated with their evaluations of orthodox healthcare products. The direction and magnitude of these relationships remain empirical questions in the Nigerian sample. Income is included because affordability can constrain healthcare choices, while literacy is included because the ability to interpret information may be relevant to evaluations of healthcare products. These controls are not assumed to eliminate all socioeconomic or contextual confounding.

METHODOLOGY

This study adopted a cross-sectional survey. The questionnaire instrument was designed and pretested prior to administration to the respondents. The instrument consists of socio-demographics and study constructs that are structured on a 5-point Likert scale consisting of strongly agree and strongly disagree, moving from 5 to 1. The preliminary checks were conducted to ensure non-ambiguity and coverage of questions for the study. Purposive sampling through intercept was adopted in collecting data

at healthcare facilities after securing informed consent from the participants. Ethical approval for this study was obtained from the Department of Marketing Research Ethics Committee (DoMREC), College of Management Sciences, Michael Okpara University of Agriculture, Umudike (Date: 20 January 2026; Protocol No: MOUAU/DoMREC/MKT/004/2026). However, the online questionnaire through Google Forms was supplemented to generate the data from initial respondents' referrals. Consent was secured. It specified and addressed the voluntariness of the participant's involvement, confidentiality, and purpose of the study.

The final analytical sample consisted of 332 responses after 27 responses were excluded during data cleaning because they were incomplete and unusable. This satisfied response rate of 50-70% is considered adequate in literature (Oloveze et al., 2021; Hair et al., 2006). However, its limitation is that findings should not be generalized statistically to all Nigerian healthcare consumers. We say this given that recruitment procedure may have introduced selection effects, particularly because respondents recruited through healthcare facilities and online referrals may differ from consumers who were not reached through these channels.

Analytically, the study employed descriptive statistics for to summarise the respondents' characteristics. OLS regression was used to estimate the associations of cultural and ethical beliefs with the marketability measure. Hierarchical regression entered income and literacy in the first block and then introduced the focal belief variables in subsequent blocks to assess their incremental explanatory contribution.

With regards to the content validity and measurement assessment. It was assessed using Lawshe's content validity ratio (CVR) recommended by Taherdoost (2016) through Lawshe's method to ensure relevance and representation of the target construct. Lawshe's (1975) CVR approach represents a linear transformation of a proportional level on a panel expert's agreement rating of items as essential.

$$\text{CVR} = \frac{n_e - \left(\frac{N}{2}\right)}{\frac{N}{2}}$$ Where;

CVR = content validity ratio;

n_e = the number of panel members that indicates essential to the items;

N = the total number of panel members

Table 1 shows the guideline for CVR's valid values at p = 0.05.

Table 1: Minimum value of CVR

No of panelists	Minimum value
5	.99

No of panelists	Minimum value
6	.99
7	.99
8	.75
9	.78
10	.62
11	.59
12	.56
13	.54
14	.51
15	.49
20	.42
25	.37
30	.33
35	.31
40	.29

Source: Taherdoost (2016)

A panel of ten experts rated each item on the questionnaire that was scaled using a recommended three-point scale of not necessary, useful but essential, and essential. The return of nine essential inputs from a panel of ten experts in healthcare confirms validity (CVR = 0.8) given that the minimum threshold from Lawshe (1975) is satisfied (see Table 1). Following non-availability of a sampling frame for the population, Topman's formula for determining sample size from unknown population was used. From a pilot test of 50 respondents that has only 70% responding favorably and 30% not responding favorably, 95% (confidence interval: Z = 1.96), and a 5% margin of error, a minimum of 323 sample size was determined. However, to accommodate for non-responses, 10% non-response error was included resulting to approximately 359 responses. The analysis was conducted using factor analysis, OLS regression, hierarchical regression, and logistic regression through SPSS v27. Factor analysis was done to identify correlation patterns of the observed variables, loadings of valid items to each construct, and validation of the survey for further analysis. OLS regressions were used to predict the strength of beliefs and their relationship between the variables. Hierarchical regression was used to determine the effect of cultural and ethical beliefs on the marketability of orthodox healthcare products after

controlling for income and literacy levels, while logistic regression was used to understand the predictors' effect on one gender over another. Thus, the statistical calculations are stated as:

OLS regression: $\hat{y} = \beta_0 + \beta_1\chi_1 + \beta_2\chi_2 + \acute{\varepsilon}$ (1)

Where;

$\hat{y}$ = predicted values of the marketability of orthodox healthcare products

X_1 - X_2 = Independent variables (X_1 = cultural belief; X_2 = ethical belief)

β_0 = Estimated intercept

β_1 – β_2 = Estimated slope

$\acute{\varepsilon}$ = Residual (difference between observed and predicted value)

Hierarchical regression: $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \acute{\varepsilon}$ (2)

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_{n+1}Z_1 + \beta_{n+2}Z_2 + \acute{\varepsilon}$ (3)

Where;

β_0 = Estimated intercept

β_1 – β_2 = Estimated slope

X_1 - X_2 = control variables (X_1 = income; X_2 = literacy level)

Z_1 - Z_2 = main predictor variables (Z_1 = ethical belief; Z_2 = cultural belief)

$\acute{\varepsilon}$ = Residual (difference between observed and predicted value)

Logistic regression: $\pi(X) = \frac{1}{1+e^{X\beta}}$ given as (4)

This is a similar statistical approach adopted by Oteh et al. (2023) in their logit design to understand probability of consumers' willingness.

$$\text{Log}\left\{\frac{\pi(Y)}{1-\pi(Y)}\right\} = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_2X_3 + \beta_4X_4 + \beta_5X_5 + \beta_mX_m \quad (5)$$

Where;

Y = consumers being male or female (dummy: 0 =male; 1=female)

π = probability of consumers being male or female in the factor group

β_1 = regression coefficients within the reference group

X_1 = cultural dilemma (strongly agree – strongly disagree five-point scaling)

X_2 = ethical dilemma (strongly agree – strongly disagree five-point scaling)

X_3 = access to health facility (dummy: 0=No; 1=Yes)

X_4 = Education (years)

X_5 = Household size (number of years)

RESULTS

The result of the socioeconomic characteristics of the respondents shows that majority of the respondents are young people, mostly male, single and with access to healthcare facilities. Although they are literate given their educational background, but they lack strong financial capabilities as majority of them earn below the Nigeria minimum wage of NGR 70,000 per month. The mean of household size is 4.01, representing an average of 4 persons per household. Other socioeconomic profiles are illustrated on Table 2.

Table 2: Socioeconomic profile

Socioeconomic item	Classification	Percentage
Age	18-30 years	60.5
	31-50 years	29.4
	51 and above	10.1
Gender	Male	56.8
	Female	43.2
Marital status	Single	69.7
	Married	25.8
	Others	4.5
Access to healthcare facilities	Yes	94.4
	No	5.6
Education	No education	3.9
	Primary education	3.2
	Secondary education	11.0
	Tertiary education	81.9
Income	₦5000-25000	37.5
	₦25000-50000	33.9
	₦50000-100000	23.2
	Above ₦100000	5.4

Socioeconomic item	Classification	Percentage
Occupation	Civil/public servant	8.3
	Trader	17.4
	Engineer	3.0
	Healthcare student	34.8
	Medical practitioner	36.5
Have healthcare insurance	Yes	45.5
	No	54.5
Literacy level	Low	16.3
	High	83.7
Religion	Christianity	94.7
	Islam	3.8
	Others	1.5
Involvement in healthcare product marketing/consumption	Yes	95.3
	No	4.7
Opinion on cultural and ethical belief affecting healthcare product marketing	Yes	93.9
	No	6.1

Measurement Assessment

The measurement results provide mixed rather than uniformly strong evidence. In conducting the factor analysis, first the commonalities exceeded the threshold of .300, as they ranged from .448 to .949. Second, common method bias (CMB) was examined to ensure a single factor did not account for over 50% variance. Harman's single-factor technique was adopted by adjusting all items to a single factor using the unrotated approach. It accounted for 28.768%. This suggests that CMB is not a problem, as the threshold requirement in literature is 50% (see Oloveze et al., 2022). Third, sampling adequacy and evaluation of the existing difference between the correlation and identity matrix were determined using the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity. With a KMO value of 0.599, the sampling adequacy was confirmed and suggested modest sampling adequacy, while 457.788 (0.000) for Bartlett's test of sphericity indicates that the item correlation matrix was not an identity matrix. The reliability estimates were generally accepted according to the threshold adopted in the study.

Fourth, the reliability and validity of the instrument were confirmed through Cronbach's alpha (CA), construct reliability (CR), and convergent validity (CV) using Hair et al.'s (2010) reference of 0.7 for CA and CR respectively, and 0.5 for average variance extracted (AVE). Construct validity is

considered robust and superior to Cronbach's alpha in assessment of reliability given that it does not assume equality of item loadings while also providing accuracy in reliability estimation (Rosli et al., 2021). As illustrated in Table 3, reliability and validity of the instrument were confirmed except for the ethical belief that has a validity score (.464) close to the threshold. The convergent validity through the construct reliability is satisfied when adopting the measure of Bagozzi and Yi (1988) in validity assessment. In this case, the validity is satisfied as all the construct values and factor loadings exceeded the threshold of 0.6 (Bagozzi & Yi, 1988). Thus, the survey items in Table 3 hang together, thereby proving usefulness for further measurement of the constructs and analysis in Table 3.

Table 3: Reliability and validity assessment

Variable	Item	Factor loadings	CA	CR	AVE
Cultural dilemma	CD1	.974	.890	.927	.720
	CD2	.755			
	CD3	.753			
	CD4	.976			
	CD5	.749			
Ethical dilemma	ED1	.753	.821	.870	.695
	ED2	.752			
	ED3	.976			
Cultural belief	CB1	.848	.879	.903	.655
	CB2	.903			
	CB3	.692			
	CB4	.886			
	CB5	.692			
Ethical belief	EB1	.669	.702	.721	.464
	EB2	.646			
	EB3	.727			
MHP	MP1	.784	.873	.903	.701
	MP2	.869			
	MP3	.868			
	MP4	.826			

Note: MP – marketability of healthcare products

Source: developed by the authors

OLS and Hierarchical Regression

The evaluation of the marketing of orthodox healthcare products from cultural and ethical beliefs is indicated in Table 4. The result indicates a positive association between cultural beliefs and the marketability measure. The result reported a coefficient of 0.155 reaching the 10% (p =.056). The implication is that positive changes in the cultural belief of the locals in the community are traceable to the changes in their education and formal learning, religious influences, and influences from other people's opinions, such as gender influences and roles of family settings. The indicators interplay to play a significant role in the positive outlook of the orthodox healthcare products marketability. Culture connects with people's way of life, norms, and long-held traditions. Positive influences from cultural beliefs tend to positively contribute to the marketing performance of orthodox healthcare products.

Second, the effect of ethical beliefs associated with the marketability of orthodox healthcare products is significant at 1%, while also revealing a positive increase in marketability of orthodox healthcare products of .397 units for every positive unit increase in ethical belief holding another variable constant. In essence, an increase in the marketability of orthodox healthcare products is associated with positive changes in ethical beliefs. The positive association confirms the importance placed on ethical considerations in healthcare solutions. For instance, the importance of confidential handling of a patient's information is vital as well as the code of conduct of medical practitioners. Positive changes in these areas positively influence how people respond to the marketability of orthodox healthcare products, especially where there are alternative solutions to people's cases.

Third, the collinearity statistics confirm the absence of high variance, thereby supporting the model's interpretability. Tolerance values and variance inflation factors (VIF) values are within acceptable ranges, with VIF values revealing that the results were not skewed by highly correlated variables in the model. Tolerance values were not closer to zero (0), while VIF values were about 1.0, thereby indicating reliability and avoidance of misleading conclusions.

Table 4: Analysis of beliefs on orthodox healthcare product marketability

Variable	Std beta	Se	t	Tolerance	VIF
Cultural belief	.155*	.062	1.926	.981	1.019
Ethical belief	.397**	.072	4.947	.981	1.019
Model statistics					
R^2= .198					

Variable	Std beta	Se	t	Tolerance	VIF
F = 15.691***					
Durbin-Watson = 2.0					

Note: ***significant at 1%; **significant at 5%; *significant at 10%

Source: compiled by the authors

The evaluation of the effect of cultural and ethical beliefs on the marketability of orthodox healthcare products after controlling for income and literacy level is executed through hierarchical regression. The role of income and literacy level in purchasing behavior is established in literature (Oteh et al., 2021). Therefore, to ensure internal validity and prevention of extraneous effects from skewing the results, income and literacy level were controlled. As indicated on Table 5, following the theoretical approach in examining the control effect through hierarchical regression, we entered the control variables in the model 1 before entering the predictor variables the model 2 and model 3 to understand the real effect after controlling for income and literacy level.

The result, as indicated on Table 5 and Figure 1, generally reveals statistical significance for models 1 and 2, thereby confirming the effect of ethical beliefs on the marketability of orthodox healthcare products after controlling for income and literacy level. Model 1 shows about 10.4% explained variance in orthodox healthcare product marketability by the control variables. Model 2 explains about 25.9% variance in orthodox healthcare product marketability after controlling for income and literacy level. In controlling for income and literacy level on model 2, the F-change (ΔF), R^2 change (ΔR^2), and significance confirm the significant effect of ethical belief on the marketability of orthodox healthcare products. Ethical belief as a predictor, while income and literacy level as control variables, were significant. The ΔR^2 further confirms that ethical belief further explains an additional 15.5% of the variance in marketability of orthodox healthcare products, and it is statistically significant. Thus, the ΔF (22.152) and ΔR2 (.155) were confirmed to be a better significant model than model 1. However, in controlling for income and literacy level in model 3, cultural belief was not significant, but ethical belief was still significant as well as the control variables. Given the non-significant p-value in model 3, despite an improved explanation of the variance in orthodox healthcare products marketability (R^2: .269), the ΔR^2 (.020) and ΔF (1.401) shows non-significance of the model, thereby indicating model 2 to be a better fit.

Although the R^2 value is low, such values are accommodated in studies involving human behavior that cannot be accurately predicted, especially in cross-sectional surveys (see Cohen, 1992). Overall, ethical belief influences the marketability of orthodox healthcare products after controlling for effects of income and literacy level. In essence, about .397 units increase as the real uncontrolled effect is expected in the marketability of orthodox healthcare products with every unit increase in ethical belief

after controlling for income and literacy level. This presents the real position of ethical beliefs of indigenous people about ethical practices that affect the marketability of healthcare products. In essence, ethical issues on confidentiality and the conduct of healthcare professionals are critical concerns to consumers, leading to significant impact on the marketability of healthcare products.

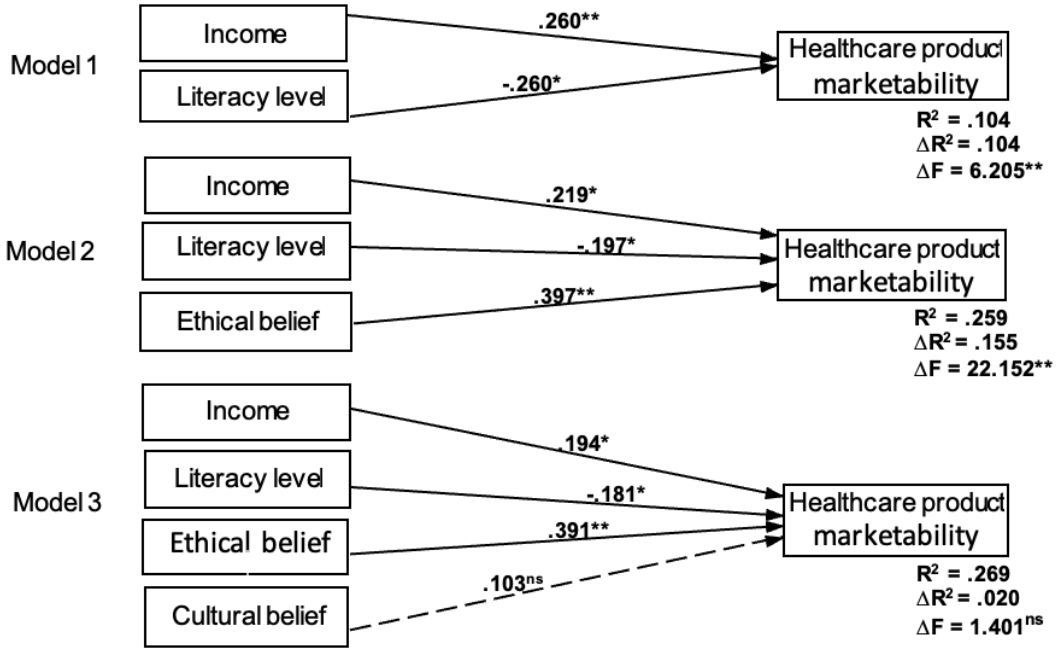


Figure 1: Result of nested hierarchical model for control effect
Source: Developed by the authors

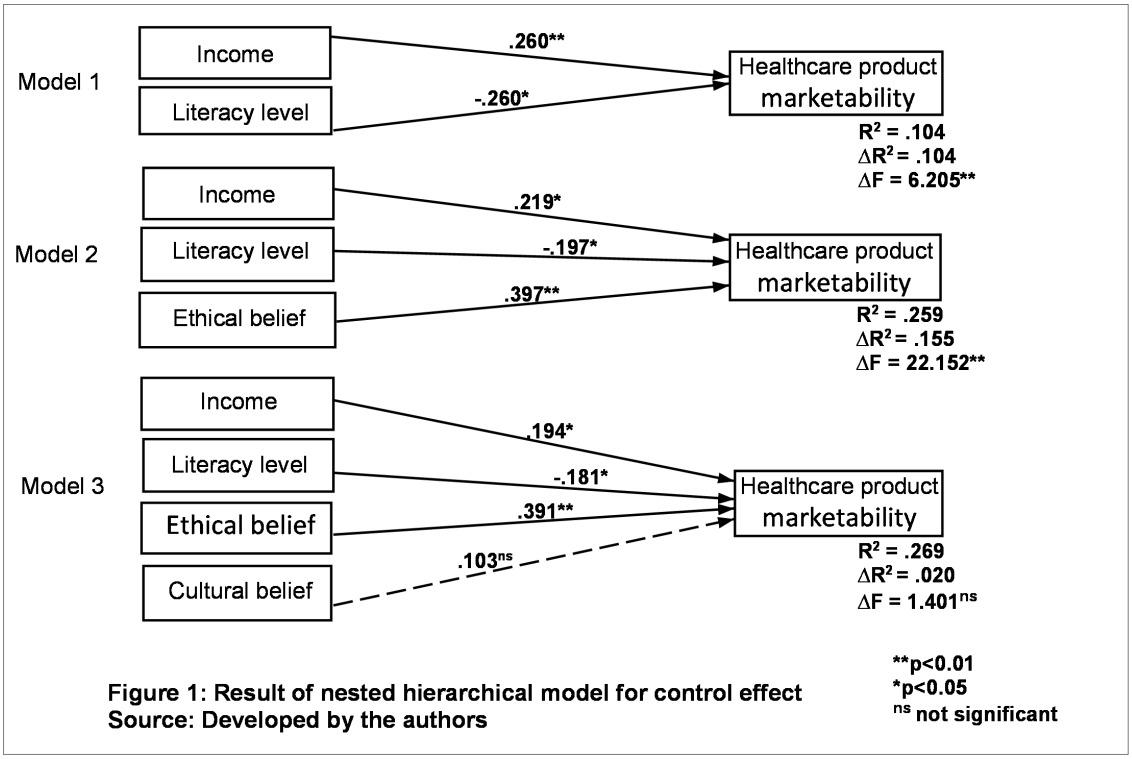


Figure 1: Result of nested hierarchical model for control effect
Source: Developed by the authors

Table 5: Estimates of predictors of marketability of healthcare product

Variables	Model 1	Model 2	Model 3
Income	.260** (t=2.814)	.219* (t=2.579)	.194* (t=2.216)
Literacy level	-.232* (t=-2.509)	-.197* (t=-2.317)	-.181* (-2.114)
Ethical belief		.397** (t=4.707)	.391** (4.646)
Cultural belief			.103ns (1.186)
R^2	.104	.259	.269
ΔR^2	.104	.155	020
ΔF	6.205**	22.152**	1.401ns

Note: **significant at 1%; *significant at 5%; ns not significant; t-values in bracket

Source: compiled by the authors

Multicollinearity was not a problem in the analysis, as indicated on Table 6 through the tolerance and VIF values. Tolerance values and VIF were within the values of 1 < VIF < 5, suggesting low correlation.

Table 6: Examination of collinearity statistics in marketability of healthcare product

Model	Variable	Tolerance	VIF
1	Income	.978	1.022
	Literacy level	.978	1.022

Model	Variable	Tolerance	VIF
2	Income	.968	1.033
	Literacy level	.971	1.030
	Ethical belief	.984	1.016
3	Income	.910	1.098
	Literacy level	.948	1.055
	Ethical belief	.981	1.019
	Cultural belief	.922	1.085

Source: compiled by the authors

In assessing the estimates of the factors that predict the probability of consumers being male or female, multicollinearity, goodness-of-fit, and model utility were examined. As illustrated in Table 7, all the predictor values are below 0.7, thereby indicating low collinearity, further suggesting non-distortion of the model coefficients.

Table 7: Evaluation of multicollinearity

	1	2	3	4	5
1. Cultural dilemma	1				
2. Ethical dilemma	-.645	1			
3.Access to healthcare facility	.236	-.174	1		
4. Education	-.067	.001	.084	1	
5. Household size	-.202	.341	-.248	-.012	1

Source: compiled by the authors

The use of logistic regression enables prediction of binary outcome (male and female) based on the estimated predictors as illustrated in Table 8. This facilitates appropriate identification of challenges and measured intervention to address identified problem cases. The odd ratios and the p-values provide significant explanation. Out of the five predictors, only four were significant in establishing the regression model using the Wald statistics and p-value. Thus, the model predicts the probability of consumers being in the female group. The value of 2-log-likelihood (71.132) is low. It indicates less unexplained information, thereby suggesting a better-fitted model. Further explanation was provided by

the model utility that was assessed through Nagelkerke R^2 (.325). The value indicates moderate explanation of variance in the outcome variable following the common rule of thumb in extant literature. However, the result is supplemented with the Hosmer and Lemeshow test (11.723; p = .110). The high p-value (p > 0.05) reveals good prediction of the outcomes by the regression model.

First, the cultural dilemma is 2.226, thereby indicating that for every unit increase in cultural dilemma, the probability of the female gender being in this class increases by 2.226 units, holding other variables constant. Further, there is about a 25% increase in the odds of cultural dilemma being in the female group, thus indicating cultural dilemma has a high chance of affecting the female group more. The p-value confirms its statistical significance (p = .001).

Second, the ethical dilemma is -1.526. This shows that for every unit increase in ethical dilemma, there is a 1.526 unit decrease in the probability of the female gender being in the group affected by ethical dilemma after holding other variables constant. Given the odd ratios [Exp(B)] value, there is about a 79% decrease in the likelihood of ethical dilemmas being in the female group. In other words, female gender is less likely to be affected by ethical dilemmas. With p = .011, the statistical significance is confirmed.

Third, access-to-healthcare facility has a positive beta (.478), which indicates that for every unit increase in access to healthcare facility, the probability of being in the female gender group increases by .478 units, holding other variables constant. Further evidence from the odds ratios shows about a 61% increase in the odds of access to healthcare facilities being in the female gender group. This implies that the female gender is more likely to be positively impacted by access to healthcare facilities. This is further confirmed from the p-value (p = .054). Education is not significant (p = .357).

However, household size is -.229, revealing that for every unit increase in household size, the likelihood of being in the female gender group decreases by .229 units, holding other variables constant, while the odds of household size reduce by about 26%. Thus, the female gender is less likely to be influenced by household size compared to the male gender. The result is statistically significant (p = .039).

Table 8: Estimates of factors that predict probability of consumers being male or female

Variables	Coefficient (B)	Standard error	Wald	Exp (B)
Constant	-2.939	2.679	1.204	$.053^{ns}$
Cultural dilemma	2.226	.866	6.610	9.258^{***}
Ethical dilemma	-1.526	.597	6.538	$.217^{**}$
Access to healthcare facility	1.893	.982	3.716	6.614^{*}

Variables	Coefficient (B)	Standard error	Wald	Exp (B)
Education	.478	.520	.848	1.613^{ns}
Household size	-.229	.144	4.275	.742**
2-log-likelihood: 81.537				
Cox & Snell R^2: .241				
Nagelkerke R^2: .325				
Hosmer & Lemeshow test: 11.723^{ns}				

Note: *** significant at 1%; ** significant at 5%; *significant at 10%; ^{ns} not significant

Source: compiled by the authors

The result of Table 8 examined whether selected healthcare-related and household characteristics were associated with the probability that a respondent was classified in the female rather than male category. This analysis is distinct from the principal question concerning the marketability of orthodox healthcare products. Although the descriptive statistics somewhat shows more male than female but a statistically significant relationship with gender does not by itself establish a meaningful theoretical contribution about gender. As such it is difficult to establish gender difference impact on the marketability of these products.

DISCUSSION

This study evaluated the dilemmas and beliefs associated with the marketability of orthodox healthcare products while controlling for the effect of income and literacy level. Cultural relativism was adopted as it promotes understanding of beliefs and values from an individual's culture rather than drawing conclusions from another's cultural perspective. Different regression techniques were used to investigate the research questions.

First, the predictability of cultural and ethical beliefs on the marketability of orthodox healthcare products was evaluated through OLS regression after assessing the model for multicollinearity. Cultural belief and ethical belief have a positive significant effect, although the standardized beta revealed a better comparative effect of ethical belief on the outcome variable than cultural belief. However, the findings support extant discourse in literature such as Burnett et al. (2020) and Asakitikpi (2019) on African people's belief affecting the marketability of orthodox healthcare products. Further, the result highlights the important role of cultural beliefs that influence the marketability of orthodox healthcare products, given that Workneh et al. (2018) suggest that some African beliefs are tied to natural causes and spiritual causes, especially where an ancestral spirit is expressing anger to a person. Essentially, increases in cultural and ethical beliefs on effective treatment from orthodox medicines can promote the

marketability of the orthodox healthcare products in societies with strong connections to traditional medicinal culture, especially in ones where attention is focused on the roles of family settings, education and formal learning, and positive opinions from experts on the effectiveness of the medicines. This is because belief can be changed through education given that education is a transformative tool that shifts understanding and restructures ingrained beliefs (Khokhotva & Elexpuru Albizuri, 2020). As a result, beliefs held by people affect their perception of healthcare products (Pfeiffer et al., 2018), although the transformative role of education balances the effect as evidenced in this study from formal education and learning. Further, although cultural beliefs had a significant effect, the greater effect on the marketability of orthodox healthcare products is the ethical belief elements. This was assessed through confidentiality treatment from medical experts regarding ailments and drug prescriptions, code of conduct, and disagreeing postures on the effectiveness of medicines with regard to the claims of medicine's effectiveness.

Second, our findings confirmed the influence of ethical belief on the marketability of orthodox healthcare products after controlling for the effect of income and literacy level. Our findings confirm the interactive nature of ethical beliefs in people's decisions on healthcare, thereby revealing the healthcare behavioral shape and nature of consumers' ethical perception when juxtaposed with the marketability of orthodox healthcare products. Extant literature reveals product safety and fairness and environmental and social responsibility as aspects of ethical concerns that have the tendency to affect how consumers respond to purchases as well as their willingness to pay for products (Nie et al., 2021). Other studies, such as Wang et al. (2020), confirm a significant connection between ethical concerns and purchasing behavior, although there are contrasting views from literature, such as Jin et al. (2020), revealing a non-significant association, and Kimenju and De Groote (2008), revealing a negative connection when ethical concerns are connected to genetically modified food. While studies confirm ethical beliefs impacting ethical consumption behavior, such as in Khan and Abbas (2023), which our findings corroborate, the insight from our results reveals increasing chances of the connection between ethical beliefs and the marketability of orthodox healthcare products when consumers see the products to be safe, quality-assured, and socially responsible. As we controlled the effect of income, our study confirms the increasing chances of ethical beliefs positively shaping ethical evaluation towards actual purchase decisions for legitimate healthcare products. Understandably, extant literature such as Alfadi et al. (2016) reveals that income affects healthcare behavior, as low-income people lean to permissive ethical evaluations such as traditional healthcare solutions compared to high-income earners. This position is further highlighted in the base-of-the-pyramid markets, where Anaka and Srinivas (2020) revealed that the tendency of low-income people experiencing ethical challenges in accessing healthcare solutions varies as constraints occasioned by income shape ethical concerns and chances to purchase. However, our result shows that without the effects of income, ethical beliefs still drive purchases of traditional healthcare solutions. The implication is that with healthcare products that are ethically

positioned to be certified, safe, and socially responsible, purchases of orthodox healthcare products will increase. This calls for attention to ethical concerns that border on the safety of drugs, drug trustworthiness, and compliance with standards, fairness, and social responsibility practices. Essentially, consumer confidence tends to increase in cases of ethical transparency given that consumers can interpret product labels and certifications on regulatory procedures. Further, consumers' consideration of ethical aspects such as eco-labeling that enables identification of eco-friendly products promotes sustainable consumption (Oloveze et al., 2023), thereby empowering marketability of orthodox healthcare products. Therefore, our result reveals that consumers lean to ethical information on orthodox healthcare products.

Third, consumer health knowledge research, such as Oteh et al. (2021), reveals that cultural norms impact people's perception and acceptance of healthcare products, especially where the nature of the perceptions interacts with the economic factors. However, this is not the case in our study after controlling for economic effects and literacy level. The implication is that from our study's context, income is controlled, thereby revealing the non-significance of cultural beliefs on the marketability of orthodox healthcare products, contrary to earlier studies of Oteh et al. (2021). In essence, while low-income consumers were observed by Oteh et al. (2021) to lean towards traditional healthcare provisions, high-income consumers lean towards orthodox solutions on account of their exposure to modern medical provisions, trust in scientific evidence on orthodox medicines, and ability to afford healthcare products, even the ones with premium prices. However, the implication of our findings is that after controlling for income, cultural belief does not affect the marketability of orthodox healthcare products. Earlier interventions in education in addition to the revised and improved minimum wage of Nigerians from ₦30,000 to ₦70,000 can account for the change.

Fourth, the factors that predict the probability of the consumers of orthodox healthcare products being male or female are cultural dilemma, ethical dilemma, access to healthcare facility, and household size. Cultural dilemma and access to healthcare facilities are the major factors. The implication of these results is necessary in appropriate healthcare interventions and the development of marketing strategies that address the extant factors affecting the marketing of orthodox healthcare products. Cultural dilemma intensifies gender disparity, particularly in reconciliatory measures between modern consumption and traditional identity (Hofstede, 2001), as our results reveal that in healthcare concerns, female gender is risk-averse and more health-conscious compared to male gender, given the understanding that male gender tends to focus on health products that connect them with their masculinity. In essence, differences in gender reactions are often shaped by cultural expectations rather than the differences in biology (Eagly & Wood, 2012). Thus, cultural dilemma calls for the involvement of females in health decisions at the household level. This is further buttressed in extant literature, where cultural dilemmas in developing countries contribute to the rejection of Western medicines while perceiving illness to be connected to spiritual causes (Oteh et al., 2021). Where cultural dilemmas become conflicting for the consumers,

particularly in choosing between traditional medicine and orthodox medicine, the probability of female gender leaning on orthodox healthcare products increases. Access to healthcare facilities is essential for the health of a nation, as it encompasses physical availability, geographic proximity, affordability, transportation, and acceptance of services offered by healthcare institutions. Our result confirms that healthcare facility utilization is more likely to be female gender, as extant literature such as Andersen (1995) confirms that access amplifies or reduces gender differences, although the World Health Organization (2023) reveals that the proximity of healthcare facilities enhances female gender utilization of the facilities. Despite the evidence, there are limiting factors that disproportionately hinder female gender access to healthcare facilities, as the World Bank (2012) reveals financial constraints, particularly for the ones in the low-income group, to be a critical factor. However, our study reveals that healthcare services are utilized by the female gender more than the male gender. Our findings corroborate extant literature (Okojie & Lane, 2020; Bertakis et al., 2000). Ethical dilemma is a vital factor in healthcare concerns. Our study confirms its significance, although it is less likely to be associated with the female gender. Extant literature confirms ethical dilemma as a major factor impacting the marketing of healthcare products (Oteh et al., 2021); however, our findings reveal that female gender is less likely to be impacted than male. The ethical dilemma encompasses counterfeit drugs, non-registered drugs, and work environments as ethical concerns of consumers. The role of household size is further buttressed in our study, and female gender is linked to this factor more than male gender on account of family health responsibilities whereby they tend to assume the role of caregiving, managing children's health, and better effort in utilizing healthcare services than males.

In summary, while our findings acknowledge cultural and ethical beliefs contributing to the marketing of healthcare products and different reactions between traditional medicine and orthodox medicine (Oteh et al., 2021), our findings revealed the position of ethical beliefs on the marketability of orthodox healthcare products after controlling the effects of income and literacy level in developing nations. This aligns with extant literature in sub-Saharan Africa (Geta et al., 2023), especially on differences in socio-economic variables in health-seeking behavior.

CONCLUSION

The focus of extant literature in relation to the marketability of healthcare products has dwelt on comparisons of traditional beliefs affecting marketing performance, while in other settings efforts were on comparisons of traditional medicinal practices and orthodox medicinal practices. In our study, we acknowledged the roles of cultural and ethical dilemmas as espoused in extant literature, but our contribution is two-way dimensional. First, our study offered the important aspects of cultural and ethical dilemmas by defining the real effects after controlling the roles of income and literacy level, which are vital elements in developing countries. Extant literature has missed this important aspect, as our study filled this gap. Second, interventions are not meant to be generic but specific, as there are medical interventions in the developing countries that did not yield expected results. A key provision

from our result is the specific gender group that these factors are situated in, thereby providing clearer understanding on the specificity of the interventions for specific gender groups versus critical factors. Therefore, we recommend interventions that strengthen the acceptance of orthodox healthcare products and specifically target the affected group.

Practical Implications

This study has severe implications for healthcare providers, regulators and communicators. The most important part of this is to consider how transparent professional conduct, confidentiality, trustworthy product information and culturally responsive communication relate to consumers' evaluations of orthodox healthcare products. Therefore, in designing healthcare product information, focus must be on context that aligns with cultural values and systems. This suggests that there is no fit communication design for healthcare products. Such communication must be specific and target oriented. Although this current study does not establish that media campaigns, educational interventions or changes in income will improve marketability; these possibilities require direct evaluation in future research.

It is also important to admonish healthcare providers that consumer evaluation of orthodox healthcare products should not be based solely through cultural explanation, ethical concerns and confidence in healthcare practices are critical and relevant.

This study has some limitations including its choice of the use of a cross-sectional survey approach. This does not establish causal relationship hence we suggest that future studies should use longitudinal designs or mixed methods to deepen understanding of cultural narratives that impacts healthcare choices, given that behavior is dynamic. The modest KMO statistics and the AVE results for ethical beliefs also warrant caution in interpreting the measurement model.

Ethics Committee Approval: Ethical approval for this study was obtained from the Department of Marketing Research Ethics Committee (DoMREC), Michael Okpara University of Agriculture, Umudike (Date: 20 January 2026; Protocol No: MOUAU/DoMREC/MKT/004/2026).

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Conflict of Interest: The authors declare no conflict of interest.

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