

Moderating Role of Demographics on the Influence of Information Quality, Video Quality and Technology Ease of Use on Online TV Subscription in Tanzania

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Abstract

Although internet-based broadcasting has led to the emergence of a significant number of online television (TV) channels that offer subscribers more choices, the market share each online TV enjoys varies considerably, with a few attracting huge subscriber numbers and others attracting very few. Although previous studies from abroad affirm that online TV subscription is influenced by information quality, ease of use of online TV technology, and video quality, recent studies carried out in developing countries, including Tanzania, have not captured this consensus. However, scholars contend that online subscription varies among people and depends on context and/or demographic characteristics, due to differences in values, motivations, and expectations. It was from this motivation that the moderating effect of demographic variables—age and gender—on the influence of information quality, video quality and technology ease of use, on Online TV subscription was assessed. The questionnaire was answered by 241 Online TV subscribers from Dar es Salaam, Tanzania. SmartPLS-SEM analyses revealed a significant influence of information quality and technology ease of use on Online TV subscription. The influence of video quality was insignificant, unless moderated by age. The moderation effect was lower by 0.123 for ages 30-40 than for ages 18-29, and was insignificant for ages 40-60. The moderating effect of gender was insignificant. While ensuring the quality of information and making technology easy to use are important, a subscription win among youngsters requires improving video quality.

Keywords: Information quality, Video quality, Technology ease of use, Online television subscription, Age, Gender, Moderating variables, Tanzania

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Introduction

Although internet-based broadcasting has led to the emergence of a significant number of online television (TV) channels that offer subscribers more choices, the market shares each online TV enjoys vary considerably, with a few receiving large numbers of subscribers and others very few (Marvin, 2019; Masele & Mwita, 2024). Evidence indicates that, although there were about 352 licensed local online TV channels in Tanzania, only five had more than 1 million subscribers by September 2020 (Social Blade, 2020; Speak, 2023). The top of the list was Ayo TV with 2.96 million subscribers, followed by Global TV with 2.61 million



subscribers. The other 57 online TVs had between 800,000 and 100,000 subscribers, and the rest had between 90,000 and 10 subscribers (Social Blade, 2020; Speak, 2023). While there are studies on factors influencing consumers' subscription to online TV, evidence is limited to developed countries, which differ in context from those in developing countries.

There are already several studies on factors that influence online TV subscriptions. According to Etayo et al. (2023), a customer's intention to subscribe to entertainment programmes or news programmes is explained by their perceptions of quality and satisfaction. Specifically, Kang et al. (2014), in a study conducted in South Korea, revealed that perceived information quality, service quality, and video quality were factors in online TV subscription. Krishnan and Sitaraman (2012) observed that viewership decreased when viewers experienced video freezes and encountered failures on the same website. Other studies, such as Nielsen (2019) conducted in the United States, Statista (2018) in Australia, and Vira (2019) in Mumbai, India, revealed that information content quality mattered. Studies (such as Frogner & Bennhult, 2021; Gutzeit et al., 2021) argue that although content is the factor that drives overall value in the eyes of the subscriber, video quality matters because it means favoured content is easily accessible. Nevertheless, Cluff's (2018) results indicated that video quality does not influence end-user engagement. In other studies, authors (such as Vira, 2019; Camilleri & Falzon, 2021) suggest that the ease of use of technology, with a user interface that allows subscribers to navigate and view TV programs and/or recorded videos faster than on traditional TVs, is a significant factor influencing the choice of online streaming. Studies (such as Yang & Lee, 2018; Camilleri & Falzon, 2020; Tefertiller, 2020; Basuki et al., 2022; Marikyan & Papagiannidis, 2023) revealed that perceived ease of use also influenced perceived advantages of online streaming media.

Although these studies are from developed countries or in different contexts, online TV subscriptions are relatively new in developing countries, including Tanzania. A recent study carried in Tanzania by Masele and Mwita (2024) on the influence of information quality, video quality and online TV technology ease of use, on online TV subscription revealed that two variables "information quality" and "online TV technology ease of use" had statistically significant influences on online TV subscription, while video quality had no significant influence on online TV subscription, however, according to Scholars (such as (Andaleeb et al., 2022; Oyedeki, 2010), online subscription varies among people and depends on context and demographic characteristics. Andaleeb et al. (2022) further observe that ideological congruence may differ between audience groups. The differences are attributed to variations in values, motivations, and expectations (Kim, 2018). Studies (such as Bucy, 2003; Vilčeková, 2015) further observe that demographic differences, such as sex, age, education level, and income, can affect media credibility: males, older adults, higher-income, and more educated audiences are more likely to be critical of the media. According to Kothari (2019), variables that help explain for whom, when, or under what circumstances a relationship holds are known as moderating variables.

Studies such as Hair et al. (2017) and Kothari et al. (2019) define a moderating variable as a third variable that affects the strength and/or direction of the relationship between an independent and a dependent variable. The inclusion of a moderator helps determine whether the relationship between two variables (independent and dependent) differs across specific subgroups (e.g., age, gender, education, or other factors).

A study by Deshwal (2016) found that demographic variables (age, gender, education level, and family income) significantly influence customers' retail shopping experiences. This is also supported by Bhat et al. (2021), who revealed that demographic variables have a key role in understanding online shopping behaviour, particularly in developing economies. According to Bhat et al. (2021), demographic variables (gender, age, marital status, income and family type) are predictors of online purchase intention. Studies further indicate that attitudes toward media consumption vary among individuals and within audiences (Etayo et al., 2023). These elements are strongly determined by the sociodemographic characteristics such as gender and age (Haridakis & Rubin, 2009). Etayo et al. (2023) thus conclude that the overall level of satisfaction and perceived quality of television in a society will be substantially affected by the audience's demographic composition, so that changes in the latter will, in turn, affect the former. While demographic characteristics of media users such as gender, age, income, and education have been considered essential predictors of media credibility, the extent which they moderate the perceived level of TV news credibility and its explanatory factors such as information quality, video quality and online TV technology ease of use, in the context of Tanzania and developing countries in general is not clear, a gap that this study sought to fill. Studies avow that age and gender are the two main ways we categorise people (Barton & Tucker, 2025; Landy, 2001). Age and gender are considered essential because they are fundamental demographic variables that influence experiences, behaviours, needs, and outcomes across areas such as health, social policy, and consumer behaviour (See also Barton & Tucker, 2025; Landy, 2001). Such reasoning led this study to choose age and gender as its moderating variables.

This study was formulated to assess the moderating role of demographic variables - age and gender on the influence of information quality, video quality and technology ease of use on online TV subscription in Tanzania. The study had the following specific objectives: 1) To assess the moderating effect of age on the relationship between information quality and Online TV subscription. 2) To assess the moderating effect of gender on the relationship between information quality and Online TV subscription. 3) To assess the moderating effect of age on the relationship between video quality and Online TV subscription. 4) To assess the moderating effect of gender on the relationship between video quality and Online TV subscription. 5) To assess the moderating effect of age on the relationship between Online TV technology perceived ease of use and Online TV subscription, and 6) To assess the moderating effect of gender on the relationship between Online TV technology perceived ease of use and Online TV subscription. The rest of the paper comprises a literature review, the adopted methodology, findings and discussion, conclusions, study implications, limitations and areas for further research.

Literature review

Theoretical review

This study is guided by two theories: The Technology Acceptance Model (TAM) and the Credible Brand Model (CBM). The TAM, as proposed by Davis (1989), explains factors (perceived usefulness and perceived ease of use) that influence individuals' adoption of a particular technology. The Credible Brand Model (CBM) describes the processes by which media audiences make credibility judgments about media outlets and their products, based on the audience's context and characteristics (Oyedeki, 2010; Oyedeki, 2008).



Technology Acceptance Model (TAM)

According to TAM, two factors, perceived usefulness and perceived ease of use, are considered to influence behavioural intention to use technology, which in turn influences actual usage. That is, for an individual to adopt and use a particular technology, it must be perceived as valuable (PU) and easy to use (PEU) (Davis et al., 1989). Perceived usefulness is defined as the degree to which an individual believes that using a particular technology would be beneficial as compared to the alternative one. In a media context, perceived usefulness is a user's perception of whether the technology provides the desired positive outcome and an enjoyable, flexible viewing experience. Perceived ease of use is the degree to which an individual believes using a particular technology would be effort-free. According to this model, although the technology may be perceived as valuable, it may not be adopted unless it is easy to use (Davis et al, 1989). It is from this point of view that these two variables were used to explain information, video quality, and perceived ease of use in online TV.

TAM has been widely used in technology adoption studies. For example, adults' intention to use new technology (Braun, 2013); Mobile Technology usage (Fatoki, 2020); E-commerce adoption (Ruiz-Herrera et al., 2023), E-learning management systems adoption and use (Legramante et al., 2023) and assessment of online TV Subscription in Tanzania (Masele & Mwita, 2024). TAM has also been used to explain how consumers adopt information systems and other technologies, which, in turn, influence purchasing intentions (Wang, Lo, and Fang, 2008). In the context of an Online TV subscription, perceived usefulness captured users' perceptions of information and video quality. The quality of the information was measured by its relevance, accuracy/correctness, reliability, brevity, timeliness, and credibility. Video clarity, sound clarity, picture clarity, no freezing, and no startup delay were measured to assess video quality. Perceived ease of use was measured by the extent to which Online TV technology would be free from effort, cost, and time taken on the task, and by the ease of learning to use and following the provided guidance, etc. Although TAM is influential in assessing purchasing behaviours, in the marketing literature, it fails to capture audience characteristics that are important in shaping consumers' media choices (Erdem & Swait, 1998). For this reason, the Credibility Brand Model (CBM) was considered a supplementary theory.

Credible Brand Model (CBM)

The Credible Brand Model (CBM) explains the processes by which media audiences make credibility judgments about media outlets and their products (Oyededeji, 2010; Oyededeji, 2008). CBM proposes that audiences have a higher level of positive connection with media outlets if both share a similar worldview and consider those media outlets more credible (Andaleeb et al., 2022). Mass media credibility has been defined and studied primarily as an attribute of message sources (Gunther, 1992). According to the CBM, the formation of perceptions of message and media credibility is multidimensional. It is influenced by the audience's context and history as much as by the media/news providers' context and history (Andaleeb et al., 2022). Researchers (Gunther, 1992; Oyededeji, 2008; Oyededeji, 2010) adopt the view that message credibility is not entirely a source-based construct but is also contingent on

audience characteristics, including demographic variables (age, gender, education, etc.) and psychographic variables (involvement in issues, personal ideology, etc.). The argument behind this perspective is that people with different psychographic/demographic properties may ascribe various levels of credibility to the same message (Oyedeji, 2008). Accordingly, Gunther (1992) found that the characteristics of the audience making the credibility judgment have the most significant influence on their perception of media credibility. The model was thus found suitable for explaining how audience characteristics influence their judgements of media credibility.

Several studies have already applied CBM to assess customers' perceptions of media quality and credibility. For example, Mercadé-Melé et al. (2017) evaluated the influence of media types on the formation of perceived CSR. Oyedeji (2010) evaluated the effects of ideological congruency and customer-based brand equity on news credibility. Meyer et al. (2010) explored the associations among audience expertise, demographics, and co-orientation with source and medium credibility. Golan (2010) assessed new perspectives on media credibility research. Accordingly, this study considered the CBM as helpful in explaining the phenomenon under investigation.

Empirical literature and hypotheses development

To examine existing knowledge on the study phenomenon, this research conducts a literature review aligned with the specific objectives of the study; thereafter, the study hypotheses are stated.

The moderating effect of age

The moderating effect of age is considered critical in the context of media choice and subscription. Results from Lee et al.'s (2018) study indicate that age matters in the adoption of different media. According to Lee et al. (2018), younger consumers (aged 35 or younger) were more open to subscribing to online streaming services, whereas older adults were less likely to adopt them. A study by Kumar et al. (2021) conducted in India revealed that young people were more inclined to watch online streaming videos on television and personal computers than adults. According to Kumar et al. (2021), correlation values of 0.690 and 0.651 indicate that Indian youth prefer video streaming platforms because they can watch movies, TV shows, and web series without interruptions from advertisements, thereby saving time for other tasks. While it is important to note that online streaming companies may focus their efforts on the younger consumers because of the propensity to buy (Lee et al., 2018), the video streaming platforms with content which can have a positive impact on the users of the youth cadre are essential (Kumar et al., 2021). The findings by Harnadi et al. (2024) also revealed that age moderated the effects of habit on individual intention.

However, several studies have produced conflicting results regarding age as a moderator. In fact, some treated age as a control variable. For example, Zabel et al. (2023) assessed the impact of content and system quality on the use of television streaming content libraries. They observed that, after controlling for age, neither actual usage, word of mouth, nor brand perception was significantly influenced. A need to test the moderating effect of age on the relationship between the hypothesised factors and online TV subscription emerged, as presented in Figure 1. Therefore, this study tested three hypotheses, H1a, H1b, and H1c:



H1a: Age moderates the relationship between information quality and Online TV Subscription significantly.

H1b: Age moderates the relationship between video quality and Online TV Subscription significantly.

H1b: Age moderates the relationship between Online TV technology ease of use and Online TV Subscription significantly.

The moderating effect of gender

A study by Mehrotra et al. (2020) on the effects of demographic factors on consumers' online shopping behaviour at a GCC university found that gender was not a distinguishing factor, as both males and females showed similar levels of online shopping. Similar findings are reported by Harnadi et al. (2024), who observed that gender significantly moderated the effects of hedonic motivation on individual habits. Zabel et al. (2023), however, observed no significant influences of gender on the relationship between hypothesised factors and the dependent variables—actual usage, word of mouth, or brand perception. Given the controversy in the body of knowledge, a need to test the moderating effect of gender on the relationship between hypothesised factors and online TV subscription in Tanzania emerged. Therefore, this study had three hypotheses, H2a, H2b, and H2c:

H2a: Gender moderates significantly the relationship between information quality and Online TV Subscription.

H2b: Gender moderates significantly the relationship between the video quality and Online TV Subscription.

H2b: Gender moderates significantly the relationship between Online TV technology ease of use and Online TV Subscription.

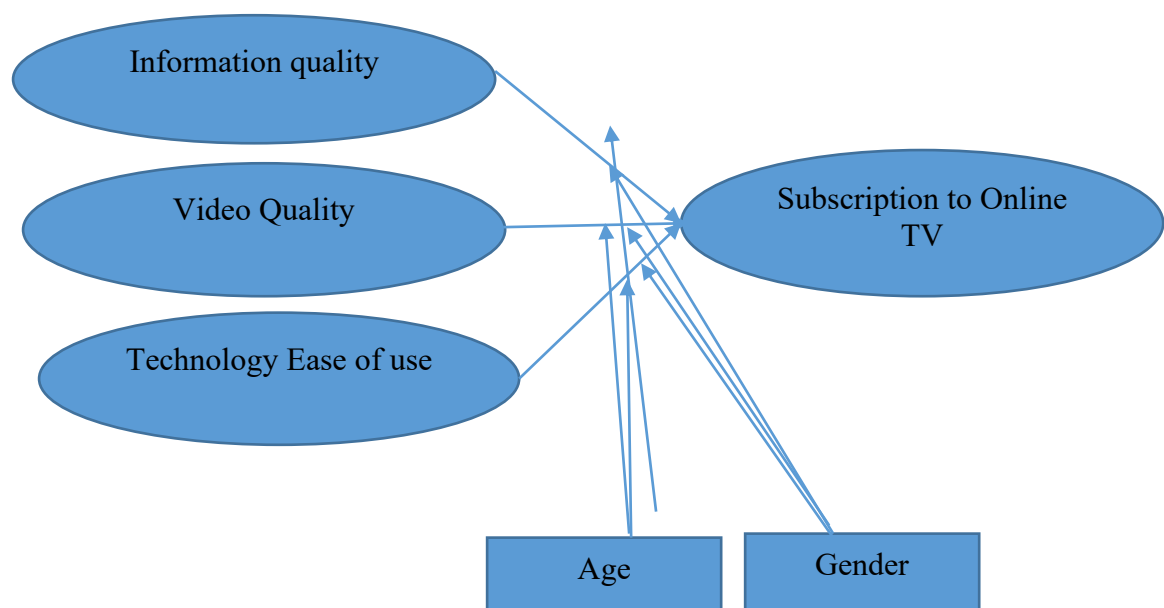


Figure 1: Conceptual Model

Methodology

This study was conducted in Dar es Salaam, Tanzania's largest city and commercial centre. Dar es Salaam has higher internet usage than other regions, thus supporting online TV subscriptions to a large extent. The study adopted a positivist philosophy, a deductive approach and an explanatory research design. Convenience sampling was used to select subscribers to online TV who were accessible and willing to participate in the study (see also Ilker et al., 2016). A structured five-point Likert scale questionnaire from 5) Strongly agree, 4) Agree, 3) Neutral, 2) Disagree, to 1) Strongly disagree was distributed to a sample of 384 internet users located in Dar es Salaam city, as calculated using the Cochran formula $n = \frac{Z^2 pq}{e^2}$ Where n= Sample size; Z= the selected critical value of desired confidence level (1.96 for 95% confidence level); P= the estimated proportion of an attribute is present in the population (assuming normal distribution of 50% when calculating sample size = 0.5); q= 1- p (1-0.5 =0.5); and, e= the desired level of precision (0.05).

$$n = \frac{(1.96)^2 (0.5)(0.5)}{(0.05)^2}$$

This yielded a target sample size of n = 384.16 respondents. Whereas the target sample was 384, by the end of data collection, the response was only 241, equivalent to 62.8%, a statistically adequate rate. The questions used were adapted from previous studies. Before administering them on a broader scale, they were pre-tested in a pilot study. These actions ensured the reliability and validity of the instruments used. Data was collected through online questionnaires from internet users residing in Dar es Salaam. The questionnaires were distributed to WhatsApp and Facebook groups to internet users residing in Dar es Salaam. Using a questionnaire, it was easy to collect large amounts of information from many people in a short period of time and at relatively low cost (Creswell, 2014). SmartPLS SEM was used to analyse the interdependent set of variables, including the hypothesised moderating effects. SmartPLS – SEM was considered appropriate for this study because the aim was to predict the moderating effect, and it does not require large samples (see also Hair et al., 2017).

Data analysis and Results

Demographically, 128 (53.1%) respondents were male, while 46.9% (113) were female. Implicitly, the respondents were proportionally represented by gender, providing a sense of inclusiveness and credibility to the study. Age-wise, respondents aged 18-29 were 117 (48.5%), those aged 30-40 were 28 (44.4%), and those aged 41-60 were 17 (7.1%). In other words, most of the respondents were youths aged below 40 years, as Table 1 further illustrates. Andrews and Herzog (1986) contend that data from youth respondents tend to provide a more precise indication of the attitudes, behaviours, or other characteristics being measured than data from older respondents.



Table 1: Demographic Information based on Response Rate

Demographic variable	Attributes	Frequency	Percent
Gender	Males	128	53.1
	Females	113	46.9
	Total	241	100.0
Age	18-29 years	117	48.5
	30-40 years	107	44.4
	41-60 years	17	7.1
	Total	241	100.0

Inferential statistical analysis

This study employed Partial Least Squares-Structural Equation Modelling (PLS-SEM) in SmartPLS for data analysis. To present SmartPLS results, the study first presents the measurement model (reliability and validity), then the structural model (path coefficients and significance levels), and finally the moderation results by creating the interaction term and reporting the moderator's significance and effect.

Measurement Model

Measurement model analysis verified data quality by ensuring that the variables used in a study accurately and consistently measured the intended concepts (i.e., latent variables). The step was important to confirm the reliability and validity of the measurements, ensuring the data are trustworthy and the conclusions drawn are sound. The extent to which one construct measures what it was purported to measure, as well as its uniqueness, was assessed using both convergent validity and discriminant validity.

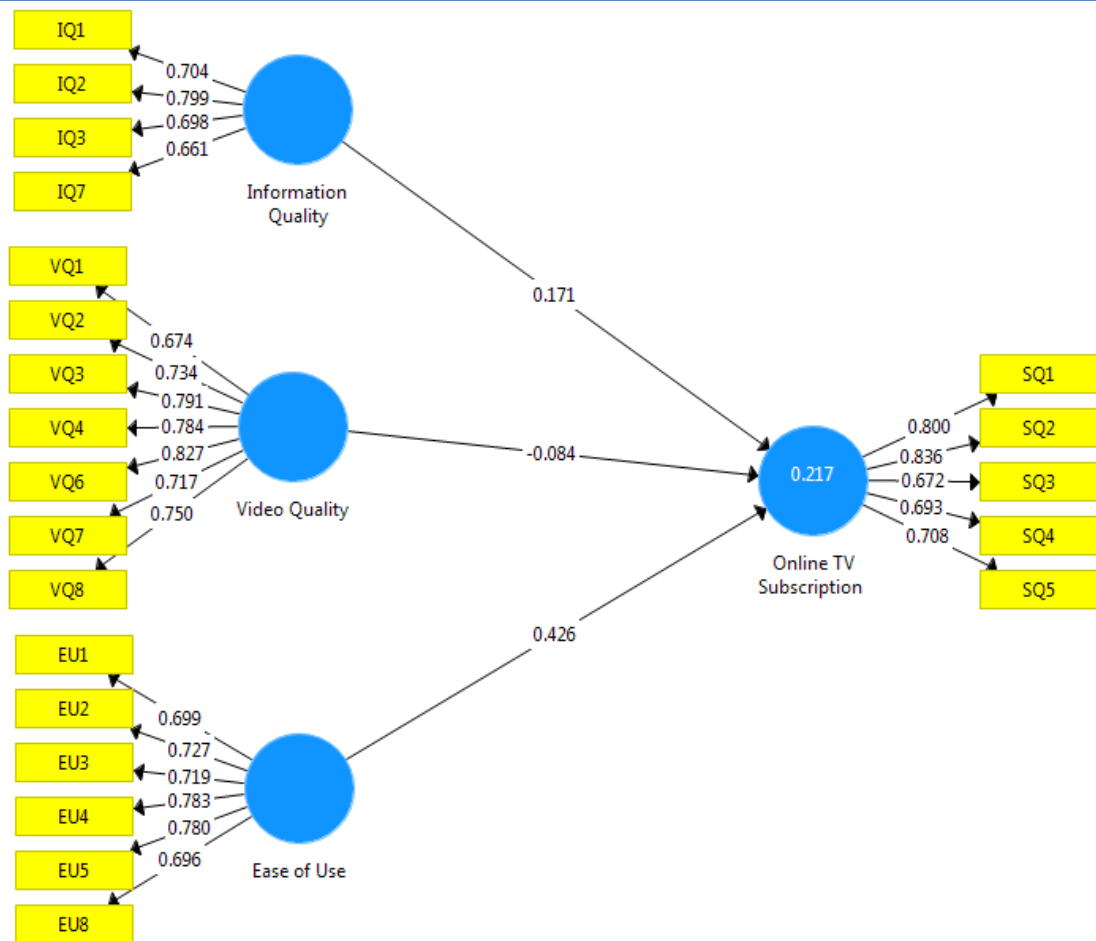


Figure 2: Measurement Model

A composite reliability test to assess internal consistency yielded a Cronbach’s alpha of 0.8 or higher, indicating reliable internal consistency (see also Sarstedt et al., 2021). Convergent validity was assessed by observing that the resulting average variance extracted (AVE), the average of the squared loadings of the indicators associated with the construct, exceeded the threshold of 0.5. This shows that the data used were both reliable and valid (Sarstedt et al., 2021; Hair et al., 2017). Table 2 summarises reliability and validity results:

Table 2: Reliability and Validity results

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Ease of Use	0.833	0.854	0.875	0.540
Information Quality	0.685	0.688	0.808	0.514
Online TV Subscription	0.806	0.834	0.861	0.555
Video Quality	0.876	0.893	0.903	0.571

In order to test for the independence of every indicator on its loading value (Discriminant Validity), a Fornell-Larcker Criterion (F&L) and Heterotrait-Monotrait Ratio of correlations



(HTMT) were used. Tables 3, 4, and 5 summarise. A comparison of the square of construct correlation and the AVE of loading value found values to be higher than the squared correlation between loading values, with Ease of Use (0.735), Information Quality (0.717), Video Quality (0.755) and Online TV subscription (0.745) as shown in Table 3. Furthermore, Table 4 shows that none of the Heterotrait-Monotrait Ratio of correlations (HTMT) values exceed 0.85 (HTMT < 0.85), indicating a threshold level of discriminant validity (see also Henseler et al., 2014).

Table 3: Fornell-Larcker Criterion (F&L)

	Ease of Use	Information Quality	Online TV Subscription	Video Quality
Ease of Use	0.735			
Information Quality	0.377	0.717		
Online TV Subscription	0.442	0.289	0.745	
Video Quality	0.577	0.518	0.251	0.755

Table 4: Heterotrait-Monotrait Ratio (HTMT)

	Ease of Use	Information Quality	Online TV Subscription
Information Quality	0.495		
Online TV Subscription	0.465	0.382	
Video Quality	0.683	0.671	0.260

Table 5: Cross Loadings

	Ease of Use	Information Quality	Online TV Subscription	Video Quality
EU1	0.699	0.225	0.267	0.435
EU2	0.727	0.313	0.264	0.442
EU3	0.719	0.253	0.234	0.474
EU4	0.783	0.317	0.289	0.524
EU5	0.780	0.303	0.449	0.368
EU8	0.696	0.245	0.353	0.368
IQ1	0.254	0.704	0.227	0.233
IQ2	0.288	0.799	0.206	0.389
IQ3	0.283	0.698	0.218	0.431
IQ7	0.255	0.661	0.167	0.459
SQ1	0.459	0.190	0.800	0.256

SQ2	0.376	0.229	0.836	0.236
SQ3	0.171	0.176	0.672	0.147
SQ4	0.185	0.206	0.693	0.087
SQ5	0.323	0.272	0.708	0.150
VQ1	0.348	0.357	0.168	0.674
VQ2	0.350	0.383	0.121	0.734
VQ3	0.426	0.415	0.202	0.791
VQ4	0.457	0.382	0.191	0.784
VQ6	0.470	0.405	0.216	0.827
VQ7	0.465	0.333	0.095	0.717
VQ8	0.507	0.432	0.247	0.750

Structural Model for Direct Relationship

To analyse the strength of the model relationship, the structural model for the direct relationship was assessed. As guided by Hair et al. (2017), the study used five measures: Coefficient of Determination (R²), Effect Size (f²), Variance Inflation Factor (VIF), Predictive Relevance (Q²), and Predictive Power and Significance for Direct Relationship. The calculation was performed using bootstrapping procedures, including the calculation of standard errors, confidence intervals, and hypothesis tests.

a) Multi-collinearity (VIF)

To assess multicollinearity among independent variables, the Variance Inflation Factor (VIF) was used. The assessment sought to ensure that all values were equal to or less than five (≤ 5). The test proved that there was no multicollinearity problem, as all values ranged from 1.270 to 2.345, which are below 5. This means the model is not subject to multicollinearity. Table 6 details:

Table 6: Multi-collinearity values (VIF)

Indicator	VIF
EU1	1.612
EU2	1.634
EU3	1.944
EU4	2.177
EU5	1.540
EU8	1.403
IQ1	1.270

IQ2	1.560
IQ3	1.253
IQ7	1.276
SQ1	1.770
SQ2	2.033
SQ3	1.669
SQ4	1.678
SQ5	1.395
VQ1	1.871
VQ2	2.217
VQ3	2.345
VQ4	2.236
VQ6	2.310
VQ7	2.008
VQ8	1.760

b) Coefficient of Determination (R^2)

The coefficient of determination (R^2) measures the proportion of the variance in the dependent variable explained by the independent variable. According to Hair et al. (2017), R^2 values below 0.25 indicate weak determination, 0.5 indicate moderate determination, and above 0.75 indicate substantial determination. In this study, the R^2 value obtained is 0.217, meaning that information quality, video quality, and technology ease of use explain 21.7% of the variance in online TV subscription. In comparison, 78.3% is explained by other factors. It also indicates a low predictive accuracy of the predictor variables for Online TV subscription. Table 7 summarises.

Table 7: Coefficient of determination (R^2)

	R Square	R Square Adjusted
Online TV Subscription	0.217	0.207

c) Effect Size (f^2)

The f^2 is the measure of how strongly one exogenous construct contributes to explaining a specific endogenous construct in terms of R^2 . According to this measure, f^2 values between 0.02 and 0.15 indicate a weak effect, between 0.15 and 0.35 indicate a moderate effect, and ≥ 0.35 indicate a strong effect. The findings presented in Table 8 indicate that the f^2 (effect size) of exogenous variables (ease of use, information quality, and video quality) to

endogenous variable (Online TV subscription) were 0.153, 0.027, and 0.005, respectively, indicating that the contribution of exogenous technology ease of use, information quality, and information quality in explaining online TV subscription were moderate. In contrast, the video quality was poor.

Table 8: Effect size (f^2)

	Ease of Use	Information Quality	Online TV Subscription
Ease of Use			0.153
Information Quality			0.027
Video Quality			0.005

Significance Testing for Direct Relationship

To test the level of significance of the direct relationship, a test was conducted. When the significance level was set at 95% CFI, t-values above 1.645 were considered acceptable, and p-values below 0.05 were considered significant. The resulting t-values for the paths Ease of Use -> Online TV Subscription and Information Quality -> Online TV Subscription were significant at $t=6.378$ and $t=2.558$, respectively. At the same time, their p-values were significant at $p=0.000$ and $p=0.011$, respectively. However, the path coefficient for Video Quality -> Online TV Subscription at 95% CFI was insignificant, with t-values and p-values of 1.327 and 0.185, respectively. Tables 9 and 10 summarise.

Table 9: Significance Testing for Direct Relationship

	Original Sample	Sample Mean	Standard Deviation	T Statistics	P
Ease of Use -> Online TV Subscription	0.426	0.427	0.067	6.378	0.000
Information Quality -> Online TV Subscription	0.171	0.176	0.067	2.558	0.011
Video Quality -> Online TV Subscription	-0.084	-0.069	0.063	1.327	0.185

Table 10: Confidence Interval (CFI) Biased Correlated

	Original Sample	Sample Mean	Bias	2.5%	97.5%
Ease of Use -> Online TV Subscription	0.426	0.427	0.001	0.290	0.550
Information Quality -> Online TV Subscription	0.171	0.176	0.005	0.043	0.302
Video Quality -> Online TV Subscription	-0.084	-0.069	0.015	-0.218	0.027



Moderation Analysis

A two-stage approach was used in the moderation analysis because the objective was to examine whether or not the moderator exerts a significant effect on the relationship between predictor variables (information quality, video quality, and Online TV technology ease of use) and outcome variable (Online TV subscription) (see also Ramayah et al., 2018). Incorporating the moderating variable, the intended demographic variables (age and gender) were first run as independent variables (central constructs) and then as a moderating variable. The product indicator was then selected and standardised. The significance of the hypothesised predictor variable's moderating effect on Online TV subscription was tested using bootstrapping procedures.

Since age ranges were categorised into three groups, dummy variables were used to test the moderating effect, with one age category (18-29 years) serving as the reference (comparable). The findings, as presented in Table 10 and Figure 3, suggest that Video quality (VQ) had a more negligible effect on Online TV subscription (SQ) for subscribers aged 30-40 years old than for subscribers aged 18-29 years old ($\beta = -0.123$, $t = 1.706$, $p = 0.088$). In comparison, it was insignificant for the age group 40-60 years. In other words, the effect of video quality on online TV subscription was lower among those aged 18 to 29 than among those aged 30 to 40. This implies that age moderates the relationship between video quality and Online TV subscription.

Likewise, since genders were categorised into two groups, dummy variables were used to test the moderating effect, with one gender category (female) serving as the reference (comparable). However, the findings suggest that VQ, the moderation effect of gender on the relationship between predictors of online TV subscription (video quality, information quality and technology ease of use), was insignificant. That is, respondents' gender did not matter or moderate the influence of the predictor variables (information quality, video quality, and Online TV technology ease of use) on Online TV subscription.

Table 10: Moderation effects of age and gender

	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	Remarks
Age*EU -> SQ	0.046	0.012	0.326	0.142	0.887	
Age2 -> SQ	-0.098	-0.097	0.064	1.532	0.126	
Age2*EU -> SQ	0.010	0.002	0.075	0.132	0.895	
Age2*IQ -> SQ	0.036	0.033	0.076	0.478	0.633	
Age2*VQ -> SQ	-0.123	-0.119	0.072	1.706	0.088	Accepted
Age3 -> SQ	-0.020	-0.029	0.184	0.108	0.914	
Age3*IQ -> SQ	-0.053	-0.028	0.223	0.239	0.811	
Age3*VQ -> SQ	-0.014	-0.014	0.276	0.052	0.958	
EU -> SQ	0.459	0.442	0.094	4.897	0.000	Accepted

IQ -> SQ	0.180	0.187	0.079	2.282	0.023	Accepted
Male -> SQ	-0.014	-0.010	0.066	0.211	0.833	
Male*EU -> SQ	0.014	0.015	0.075	0.190	0.849	
Male*IQ -> SQ	0.005	0.010	0.075	0.069	0.945	
Male*VQ -> SQ	-0.040	-0.034	0.072	0.554	0.580	
VQ -> SQ	-0.114	-0.092	0.085	1.341	0.180	
Online TV Subscription	R-Square (R2)			Adjusted R Square (Adj, R2)		
	0.240			0.237		

Results further indicate that, when interaction effects are introduced by moderating Age and Gender, the R^2 increases to 0.240, as shown in Figure 3. This change signifies a 0.023 increase in R^2 . The increase in R^2 from 0.217 to 0.240 suggests that the direct relationship between hypothesised Online Subscription determinants (IQ, VQ and EU) and SQ is relatively weak on its own. The initial R^2 of 0.240 indicates that, while there is some explanatory power, it is not substantial; it is enhanced by moderation with Age and Gender.

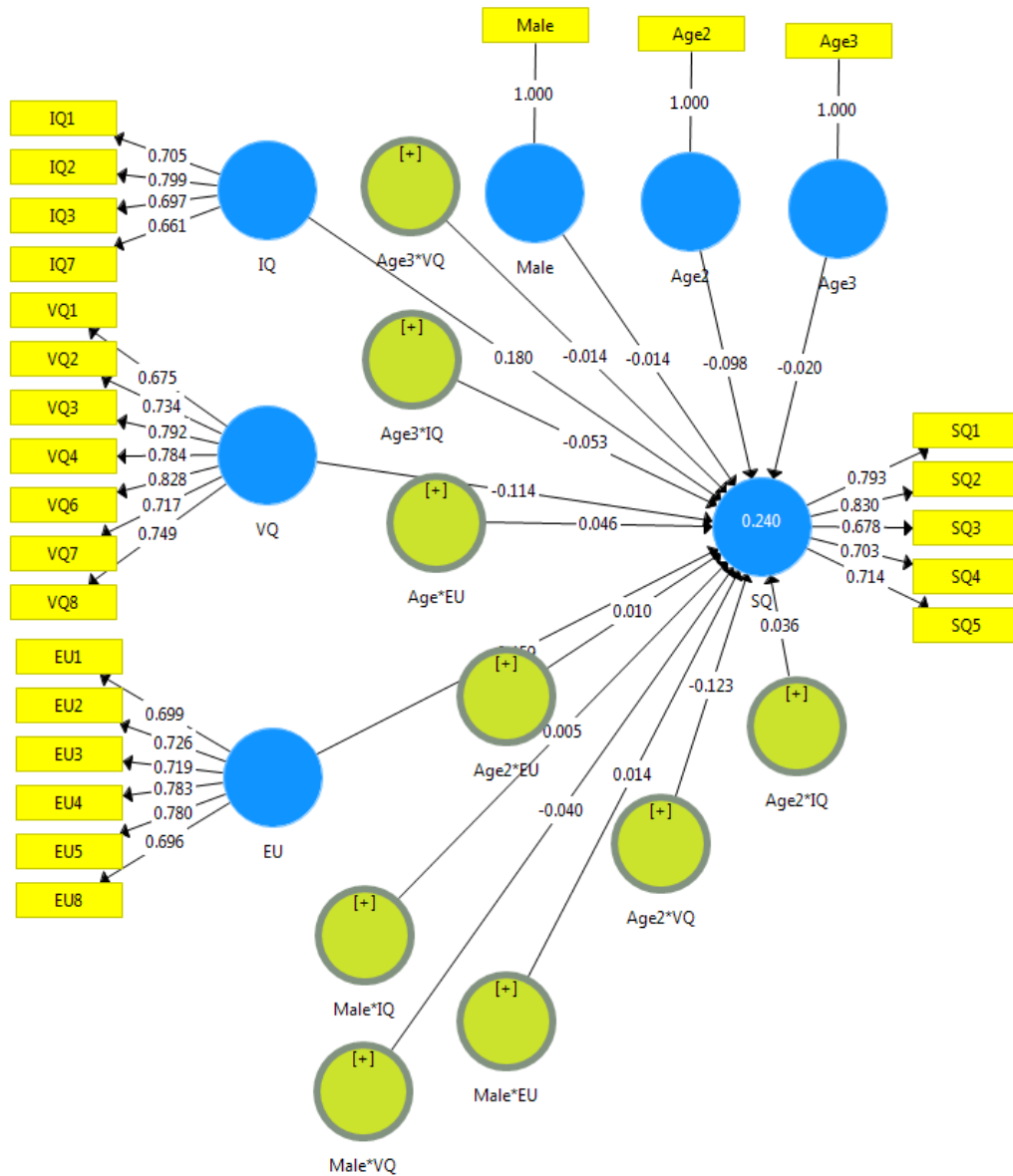


Figure 3: Moderation model

Discussion

The findings reveal that age significantly moderates the influence of Information quality (IQ), Video quality (VQ), and Online TV technology ease of use (EU) on Online TV subscription (SQ), with younger respondents exerting greater influence than older ones. The overall variance explained (R^2 after moderation) was 0.240. Whereas the influence of VQ on SQ was insignificant, its effect on online TV subscription was less than 0.123 for subscribers aged 30-40 years old, compared to subscribers aged 18-29 years old, and was insignificant for subscribers aged 40-60 years old. The findings imply that the moderating effect of age and gender on the relationship between video quality and online TV subscription strengthens as age decreases; with younger individuals' online TV subscription increasing as Video quality (VQ) improves. The analysis further indicates that the overall

moderation effect of Age and Gender increased R^2 by 0.023. With overall moderation by age and gender, the R^2 increased from 0.217 to 0.240, suggesting that age moderates the influence of hypothesised Online Subscription determinants (IQ, VQ and EU) on the outcome variable, SQ. Unlike the direct relationship study conducted by Masele & Mwita (2024), the current study's R^2 results indicate that the predictive power of IQ, VQ, and EU on SQ varies across age groups.

This study's findings are consistent with Kumar et al. (2021), who observed that youngsters were more inclined to watch online streaming videos on television and personal computers, as they could watch movies, TV shows, and web series without interruption, thereby saving time for other tasks. This is also consistent with Lee et al. (2018), who found that younger consumers (aged 35 or younger) were more likely to subscribe to online streaming services, whereas older adults were less likely to do so. The findings are also consistent with Harnadi et al. (2024), who found that age moderated the effects on individual intention to subscribe to online music, online gaming, video streaming, online comics, and online news. The findings may be explained by Lee et al. (2018), who state that the primary way youth under 35 view television is through streaming services. A study by Lee et al. (2018) conducted in the United States found that 59% of adults relied on cable connections as their primary means of watching TV. Cost has been identified as a leading factor in consumers dropping cable television and switching to streaming services. In fact, there is a strong correlation between cost and cable TV (Lee et al., 2018; Shelton et al., 2016), to the extent that many youths aged 18 to 29 cannot afford it, compared to the cost of an online TV subscription. Besides, younger consumers (aged 35 or younger) are more open to subscribing to online streaming services, while older adults are less likely to adopt them (Lee et al., 2018).

The findings align with the Technology Acceptance Model (TAM), particularly the constructs of perceived usefulness and perceived ease of use. An Online TV service, despite being perceived as applicable, can easily be abandoned if it is considered costly to access or stream, time-consuming to display, or requires significant effort to learn and use. Among Tanzanian subscribers aged 30–40 years, the influence of video quality on Online TV subscription appears to be less pronounced. This may be because most individuals in this age group are engaged in income-generating occupations and therefore have limited patience for lengthy or inefficient streaming processes. They tend to prioritise saving time for other productive activities.

With regards to the moderation effect of gender on the influence of hypothesised predictor variables –video quality, information quality and technology ease of use on Online TV subscription, was insignificant. There was no significant impact on the extent to which gender moderated video quality on online TV subscription. The findings are consistent with those of Mehrotra et al. (2020), who found that gender was not a distinguishing factor between males and females in online shopping behaviour. The findings are also in line with Zabel et al. (2023), who observed no significant influences of gender on the relationship between hypothesised factors and the dependent variables, actual usage or brand perception. The findings, however, contradict those of Harnadi et al. (2024), who found that gender significantly moderated the effects of hedonic motivation on individual habits. The findings also contrast with those of Hamad & Schmitz (2019), who observed a significant positive effect of gender. In other words, it was not gender that moderated the relationships among information quality, video quality, and ease of technology use, but age. This was significant



for video quality, with the effect stronger among younger respondents than among older respondents.

Additionally, the findings are consistent with the Credibility Brand Model, in which users judge the credibility of an Online TV service based on contextual characteristics (such as age and gender) and are influenced by this when deciding whether to subscribe and continue using the service.

Conclusions

The study's findings affirm that although information quality and ease of use of technology could significantly influence Online TV subscription, video quality had an insignificant effect on Online TV, unless moderated by age. Results indicated that video quality had a negligible effect on Online TV subscription among subscribers aged 30-40 years compared with those aged 18-29 years. In fact, the moderating effect was insignificant for ages 40-60 years. Generational changes could explain the results: due to streaming services, the primary way youngsters view television is online, partly because they may not yet be able to own a cable TV subscription. Also, at this age, youth are mostly busy and mobile, thus preferring to watch online videos more than stationary cable TV while going about their activities. This is different mainly for the group aged 40 and above. According to this study, however, gender did not influence whether one subscribed to online TV. That is to say, especially with Video quality, it was not respondents' gender that moderated the influence on Online TV subscription, but the individual's age.

Implications for the study

Practical Implications

Based on the finding that age matters, the study has the following practical implications: For online TV providers seeking to attract younger subscribers, enhancing video quality and offering content that resonates with youth is crucial, as younger audiences are more open to streaming services than older adults. In line with TAM, platforms should prioritise ease of use, especially for users with limited digital skills: ensure support for multiple devices (smartphones, tablets, TVs) and implement low-bandwidth modes to accommodate users in low-connectivity settings. Transparent pricing is important for fostering trust and enhancing brand credibility: subscription tiers, data usage, hidden costs and cancellation policies should all be clearly disclosed so users feel confident and avoid abandonment. Finally, providers should view user experience holistically. It may include incorporating ease of access, device compatibility, localised support, and transparent cost structures to enhance perceived usefulness and, hence, greater uptake and retention among younger, price-sensitive users.

Theoretical implications

This study extends the explanatory scope of both the Technology Acceptance Model (TAM) and the Credibility Brand Model (CBM). The direct relationship tests show that information quality and technology ease of use significantly influence online TV subscription, which aligns with TAM's core attributes of perceived usefulness and perceived ease of use. However, while the effect of video quality was insignificant, its influence on online TV subscription was well moderated by age: subscribers aged 30-40 years showed a weaker effect than those aged 18-29 years. Thus, the study theorises that online TV subscription is

influenced by information quality, video quality, and ease of use of technology, when moderated by subscribers' age, and that these factors collectively explain about 24% of the variance in subscription behaviour. It theoretically implies that incorporating ease of use (e.g., ease of access, device compatibility, localised support, and transparent cost structures) will enhance perceived usefulness and, hence, greater uptake and retention among younger, price-sensitive users. Moreover, the study provides theoretical support for the CBM assertion that media adoption depends on the perceived credibility of the medium and on audience characteristics such as age and gender.

Policy implications

The potential of online TV services for inclusive access to news and entertainment is enormous, as they enable ubiquitous access to television and other media, regardless of location. It thus fosters a sense of togetherness, where viewers can engage with others (through personalised online viewing) who share an interest in countries, and reconnect with their home communities when geographically distant by consuming domestic media content. Demographically, findings have indicated that online TV is particularly well-suited to younger audiences. This has important policy implications for inclusive access to news and information, as envisaged under the Access to Information Act of 2016 in Tanzania.

Policymakers need to develop appropriate policies to enhance the ease of use of Online TV. It may include policies that cover overhead costs related to acquisition, access, and use. Affordable internet bundles and other facilitative policies are required to promote access among youth and other marginalised groups. To enhance the brand credibility of online TV providers, regulators and government authorities such as TCRA should enforce measures such as minimum service-quality standards (e.g., streaming reliability, transparency of pricing, cancellation policies), robust security and privacy protection, full disclosure of subscription levels/data usage/hidden costs, and monitoring of misleading market practices. Regulators should also control and monitor how viewer data is collected, stored, and used to build trust in the Online TV services provided.

Limitations of the study and areas for further studies

This study was conducted solely in Dar es Salaam; thus, the findings may not be generalisable to other regions or cities in Tanzania. Besides, the sample size was relatively modest (241 respondents), which may limit statistical power and the ability to detect more minor effects or interactions. Future research should include additional regions or cities in Tanzania and, ideally, adopt a larger sample size to improve generalisability and statistical robustness.

The study also used convenience sampling, which introduces sampling bias and may reduce the sample's representativeness of the broader target population. Future studies may employ probability sampling methods to reduce sampling bias and improve the representativeness of the target population. Subsequently, the study limits itself to only two demographic variables-age and gender as tested moderating variables. Future research could examine additional moderating or mediating variables (such as income level, educational attainment, broadband access, or cultural factors) to deepen the understanding of online TV subscription.

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