Influence of Attitudes and Subjective Norms on Intentions to Purchase Counterfeits Products in Tanzania: Mediating Role of Consumer Education

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Abstract
This study's specific objective encompassed assessing the influence of attitudes and subjective norms on intentions to purchase counterfeits while examining the mediating role of consumer education in influencing these intentions. The study was conducted in Tanzania and employed survey-based methods and advanced statistical analyses to investigate the complex dynamics of consumers' behaviour in the social perspective of a developing economy. The size of the sample was 202 household heads whereas the research employed Structural Equation Modeling (SEM), integrating Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). Findings revealed significant effects of subjective norms and attitudes on purchase intentions, with consumer education showcasing mediating role on attitude and purchase intentions of counterfeit products. Since attitudes and purchase intention are mediated by consumer education, these results imply that interventions aimed at reducing the intentions to purchase counterfeit products could base on altering attitudes, educating individuals about the risks and ethical concerns associated with counterfeit products might help to counteract their inclination to right purchase behaviour.

Keywords: *Education, Attitudes, subjective norm, Purchase Intention, Mediation analysis*

INTRODUCTION

Consumer behavior is a complex and dynamic field that marketers worldwide seek to understand, often relying on estimations of consumer intention due to its pivotal role in shaping actual behavior (Ahmad *et al.*, 2014; Othman *et al.*, 2020). The significance of purchase intention lies in its portrayal of a customer's efforts and considerations before committing to a product or service. Described as a plan for a future purchase, purchase intention not only serves as a predictor of actual consumption but also reflects the likelihood of such consumption occurring (Tseng *et al*., 2021). As Asshidin *et al*. (2016)

noted that businesses frequently use purchase intentions to forecast sales, making it a central aspect of contemporary marketing practices. This underscores the urgency of understanding the influencing factors of purchase intention, particularly in counterfeit context.

Counterfeit products, characterized as illegal replicas of authentic items, have become a significant concern globally. Consumer behaviour in counterfeits purchase intention has been gained popularity worldwide such as in East Asia including People's Republic of China (Islam, 2023). Similarly, the United State and Europe as developed countries as also experiencing the mushroom of the counterfeits in the market (Chow, 2021). Various factors influencing the consumer purchase intentions in the context of counterfeits products have been studied in the developed countries but because of dynamic nature of consumer behavour, still there is no unifying factors to determine the purchase intentions of counterfeits products have has been established (Tunçel, 2022). On the side of Africa, limited studies of consumer behaviour specifically in purchase intention have been done in Africa including East Africa resulted to few empirical literature and conclusion on the factors influencing purchase intentions of counterfeits products (Garas, 2023; Ndereyimana *et al.*, 2023,). Thus, the current situations call for more studies on consumer behaviour.

In Tanzania, a developing economy transitioning to a free market, the prevalence of counterfeit products has risen, posing challenges to consumers and the country's economic growth (Nandonde, 2022). Despite the risks associated with counterfeit purchases, consumers of different level of education continue to exhibit high purchase intentions, often driven by price considerations (Mushi, 2019). This increases questions the role of consumer education in determining their decisions and understanding the associated risks. Consumer education is not only a demographic factor but also considered a potential mediator in the intricate web of attitudes, subjective norms, and purchase intentions (Ngo *et al.*, 2023).

The literature indicates that the consumer education significantly influences behavioral intention and behavior (Akhter 2003, Widyanto & Sitohang, 2022). Consumer education encourages better informed decisions because of enhancing abilities in collecting, processing, and analyzing products information (Dangi *et al.*, 2020). Education influences consumers' strategies for acquiring information and evaluating products. However, in Tanzania, where a considerable portion of the population lacks literacy, the ability to assess the effects of purchasing counterfeit products is limited, with a

predominant focus on price considerations (Mushi, 2019). The scarcity of literature exploring the links between consumer education and the determinants of purchase intention, such as attitude and subjective norms, creates a research gap. The current study desires to address this gap by incorporating consumer education as a mediator on the links between attitude, subjective norm, and purchase intention of counterfeit products in the Tanzanian context. The study dwells on mediation analysis rather than moderation analysis because there are limited studies on mediation analysis in aforementioned relationships as reported by Ngo *et al.* (2023), but also consumer education serves better as a mediator than a moderator as it reveals causal pathways between variables, explaining how and why effects occur rather than solely indicating under what conditions they occur respectively. Thus, mediation analysis technique is considered to be crucial method for understanding the mechanism among casual-outcome effect.

The current study assesses the core constructs of attitude, subjective norm, and behavioral intention in understanding consumers' intention behaviour related counterfeit products. Therefore, this study is building to the Theory of Reasoned Action (TRA) developed by Ajzen (1975). According to Ajzen (1975), human behaviour can be determined by behavioural intention as the main predictor of the behaviour. Again in this theory, behavioural intention is determined by only two main variables which are attitude and subjective norm that's why many scholars end up using the three variables when applying this theory. By expanding TRA to include external variables like consumer education, the study sought to produce a more detailed understanding among the nuanced factors influencing consumer behaviour regarding counterfeit products. This expansion of TRA has received limited attention in previous studies, and the proposed model seeks to contribute to filling this research gap.

In essence, the prevalence of counterfeit products in Tanzania presents not only economic challenges but also social dilemmas. Understanding the influence of consumer education in mediating the relationships of attitude, subjective norms, and purchase intentions is crucial for developing targeted interventions, strategies and policies. The study contributes to the theoretical understanding of consumers' behaviour as well as to practical implications for businesses and policymakers seeking to address the complexities associated with counterfeit products in a Tanzania.

This study's objectives are therefore, firstly, to examine the influence of attitude (AT) towards counterfeit products on purchase intention (PI).

Secondly, is to examine the influence of subjective norms (SN) on purchase intention of counterfeit products. Thirdly, is to assess the mediating function of consumer education (EDU) on both the links between attitude (AT) and subjective norms (SN) on consumers' purchase intention towards counterfeit products.

THEORETICAL LITERATURE REVIEW

Theory of Reasoned Action (TRA) is used to guide this study. Fishbein and Icek Ajzen (1975) developed TRA, which defines "behavioural intention of any action based on attitude and subjective norms." The definition of attitude is "the belief that arises from an evaluation of the potential benefits and drawbacks of engaging in a particular behavior." Subjective norms refer to the perception of pressure to participate in action as a result of the influence of other people. TRA is widely used framework that has been used extensively in research to study particular types of behavior, including consumer behaviour, health, and communication behavior. The theory is frequently used by researchers to examine behaviour that carry a high risk of danger such as unethical and deviant conduct (Al Balushi et al., 2023). Predicting and explaining human behavior is one of the main strengths of TRA. It can also guide cross-cultural and serve as a model for creating behavior-changing interventions. Additionally, it is not too difficult to comprehend and use (Hale *et al.,* 2002; Hosseini *et al.,* 2015). However, the TRA has some weaknesses, one among them is a chance that attitudes and norms will be confounded, the reason for this is that subjective norms and attitudes can be reinterpreted as one another. Moreover, the main issue is that, TRA did not take into account the mediating effect of consumer education in the relation between TRA variables (Asvinigita *et al.,* 2022; Hale *et al.,* 2002). Therefore, researchers such as LaCaille (2020) suggested that additional of the mediating variable (consumer education) can be used to overcome TRA's weaknesses led to extend theory and enhance its ability to influence the intentions and behaviours.

EMPIRICAL LITERATURE REVIEW

Attitude and Purchase Intentions

Consumer behaviour studies have been conducted in many developed countries for different products and theories but limited studies were done in developing countries. Using a regression and correlation analysis, Bupalan *et al.* (2019) investigated the effect of attitude towards counterfeit on purchase intention in Malaysia. The data was collected from the sample size of 114 consumers through the use of online google form and physically using questionnaire at the shopping malls. The study found attitude had positive

and significant results on purchase intention towards counterfeit products. The findings are similar with results of Bhatia (2018) in India and De Matos, *et al.* (2007) in Brazil. Based on the study findings, it was recommended that need of having another study of the same kind to unveil the influence of attitude towards counterfeit on purchase intention consumers in other countries in order to enhance the generalization of the findings.

In Africa, the study conducted by Garas (2023) in Egypt investigated the impact of perceived risk, attitude ethical judgment, value consciousness, susceptibility to social influence and neutralization on counterfeit clothes and accessories purchase intention. The study employed cross-sectional survey through questionnaire to collect primary data from 361 counterfeit buyers. The relationships between the variables were tested by structural equation modeling (SEM) whereby result indicated that attitude influences purchase intention. The study suggested similar study to be conducted with different sample size to validity the results.

Furthermore, one of the similar studies was also conducted in Tanzania by Nandonde (2022), which examined factors behind consumption of counterfeit Goods in Developing Economy a case of Tanzania. The sample size of this study was 200 consumers, where the collection of the data was done using the questionnaire with convenience sampling technique in Dar es salaam. By the use of confirmatory factors analysis (CFA), the data were analysed and results indicated that attitude is insignificantly influencing purchase intention of the consumers of counterfeit mobile phones. However, the study was limited to smart phone consumers in Tanzania only thus, it was not easy to show the consumers' experience on other brands. Therefore, several studies needed to be carried out to measure experience of consumers in other counterfeit brands.

Subjective Norms and Purchase Intention

Al Balushi *et al.* (2024) conducted a study involving 679 samples of two universities students in Oman and Qatar. The purpose of the study was to examine the impact of brand consciousness, social influence (subjective norm), integrity and performance risk on the purchase intention of consumers towards non-deceptive counterfeits. The responses were obtained using structured questionnaire and partial least square-structural equation modeling was employed to anaylse the relationship between the variables. The findings of the study indicated that subjective norm had a significant influence on intention to purchase non-deceptive counterfeits in all samples.

Similarly, the study done by Aldousari (2024) in Kuwait focused on understanding the socio-psychological motivations following the purchase counterfeit of luxury brands. This study was qualitative in nature in which data was collected by using semi=structured interviews and netnography on 21 respondents who are aware of counterfeit luxury brands and addition 372 comments obtained for instgram. Content analysis was used to analyse the collected data. The findings revealed that social conformity (subjective norm) influence the purchase intention of counterfeit luxury brands. The findings aligned with findings of Molina-Castillo *et al.* (2021) who based on the study of demand for digital and physical counterfeits in three countries in Europe. However, the reviewed studies were conducted in developed countries so due to cultural and geographical difference, it is important to conduct other studies in African settings to have more information of purchase intention of counterfeits.

Moreover, Mushi and Noor (2019) conducted a study in Tanzania examine the influence of subjective norm, self-regulatory efficacy and moral judgment in predicting purchase intention of counterfeit products. The study was guided by theory of planned behaviour (TPB) and cross-sectional survey using questionnaire was used to collect data from 491 in consumers of generation Y as the key users of music.

The data were analysed using structural equation modeling (PLS- SEM) which revealed that subjective norms is negatively related to purchase intention of pirated music CD. The results showed a negative correlation between subjective norms and the intention to buy counterfeit goods. The findings aligned with those of Nandonde (2022) in Tanzania who found that social pressure had no significant effects on the purchase of fake mobile phones in Tanzania. The results of study reported by Mushi (2020) in Tanzania had shown a positive relationship between Tanzanian consumers' purchase intention and the subjective norm of illegally copied music CDs. Therefore, because of limited studies on consumers behaviour intention of counterfeit products in Tanzania, it is imperative to conduct more studies in order extend the body of literature.

Consumer Education, Attitude, Subjective Norm and Purchase Intention Relationships

Cortez *et al.* (2023) on the study aimed to investigate the factors that may influence the purchase intention of rapid COVID-19 tests in Mexico. Specifically, the study assesses the influence of the each factor (gender, education, age and geographic location) on purchase intention of rapid

COVID-19 tests. The study involved descriptive research design with cross-section survey where data were collected from 246 respondents through questionnaire. The sampling techniques applied in this study were convenient sampling to sample the respondents from the population. The data were analysed by using descriptive analysis, correlation and probit model to produce the results. It was found that the education has positive relationship with purchase intention. The results are similar with the results obtain from the study of Qi and Ploege (2019), thus the there is direct correlation between education and purchase intention. However, this study was taken in Mexico so there is a need to conduct the same study in other countries to extend the literature.

Furthermore, Ngo *et al*. (2023) conducted a study in Vietnam to assess the factors affecting the purchase intention of safe certified vegetables. The study used 361 sample of the consumers and data were collected through questionnaire. In this study, stratified sampling was used applied as the type of sampling technique. The collected data were analysed by structural equation modeling (SEM) to test the hypotheses. However, the study focused only on the certified vegetables and did not include other products such as counterfeits products therefore more studies of testing the influence of consumer education on purchase intention of the other products are important to have more understanding of consumer behaviour.

Furthermore, previous studies have primarily focused on the direct relationships between attitude, subjective norm, consumer education, and purchase intention, overlooking indirect relationships. Ngo *et al.* (2023) recommended an extension of literature on interrelationship between fundamental determinants of purchase intention and external factors like demographics. However, most empirical literature of purchase intentions focused on moderation analysis using demographic factors such gender, age and income, with limited attention to mediation analysis, particularly using attitude as a mediator in relationships (Garas *et al.*, 2023; Ndofirepi *et al.*, 2023), thus creating avenues to conduct studies under mediation analysis involving demographic variables such as consumer education, as suggested by Ngo *et al.* (2023). This study acknowledges a research gap in this area and seizes the opportunity to investigate an indirect path to purchase intentions through education.

This study posits education as a mediating variable, shaped by Baron and Kenny's (1986) definition of mediating effects. Education significantly influences consumer behavior due to increased assessment propensity,

making it a reliable indicator. Qi and Ploege (2019) observed the direct impact of education on purchase intention and a favorable attitude. However, researches exploring the connection between attitude and purchase intention through consumer education remain limited. This study again argues that the relationship between consumer education and the intention to purchase counterfeit products is influenced by close relationships (social influence or subjective norm). Therefore, there is an urgent need for researchers to better understand the interrelationships among attitude, subjective norm, education, and purchase intention, particularly regarding counterfeits.

Conceptual Framework

This study was mainly based on the proposed model of TRA (Ajzen & Fishbein, 1975) as indicated in Figure 1. The model included subjective norm and attitude as the independent variables, purchase intention as dependent variable. Another variable is consumer education which was added as external and mediating variable as proposed by Ngo *et al.* (2023). However, the details of all variables involved in this study have been discussed in the previous sections.

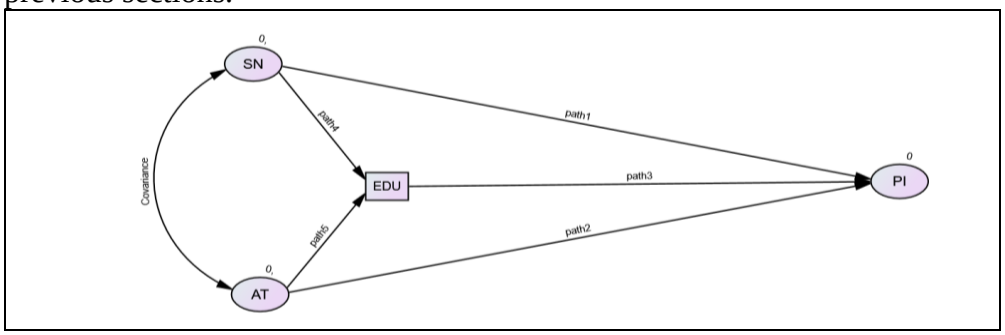

Figure 6: Conceptual Mediation Model

Where: PI: purchase intention of counterfeit products, EDU: consumer education, AT: attitudes and SN: subjective norms.

Hypotheses

These hypotheses aim to test specific relationships between attitudes and subjective norms, consumer education, and their collective influence on purchase intentions of counterfeit products. Through empirical testing, these hypotheses can provide insight into the nuanced dynamics and influences shaping individuals' intentions to make purchases in relation to education and societal perceptions. From the relationships reviewed and explored, here are four testable hypotheses based on the mediation analysis:

Specifically, individuals with more favorable attitudes toward counterfeit products, coupled with education, will exhibit negative purchase intentions compared to those with unfavourable attitudes but educated.
Hypothesis 1-H1 (path 5 to path 3): consumer education significantly mediates the relationship between attitudes toward purchase intentions of counterfeit products.

It is expected that individuals influenced by positive societal views on education, alongside education will demonstrate a stronger inclination toward purchase intentions compared to those influenced by negative social norms but educated.
Hypothesis 2-H2 (path 4 to path 3): Consumer education significantly mediates the link between subjective norms and purchase intentions of counterfeit products.

This hypothesis suggests that attitudes toward counterfeit products will still directly predict purchase intentions, independent of the influence of education as a mediator.
Hypothesis 3- H3 (path 2): Attitude towards counterfeit products has significant effect on purchase intentions.

It is anticipated that even though there is no consideration of the education, individuals' social influence (subjective norms) about education will still contribute a substantial role in shaping purchase intentions
Hypothesis 4 -H1 (path 1): Subjective norm toward counterfeit products has significant effect on purchase intentions.

METHODOLOGY

The study is purely quantitative in nature because it has involved numbers and statistics during data analysis. However, the study employed deductive approach with explanatory design. The study was conducted in Dar es salaam as the major commercial centre in Tanzania, particularly in the three former districts namely Ilala, Kinondoni and Temeke. These districts were chosen because there are highly populated with many businesses. Tanzania consumers were involved as the population of the study. The sample was drawn from the sampling frame of 276 streets obtained (64, from Ilala, 65 from Temeke and 63 from Kinondoni) and 707,576 households (229,191from Ilala, from 277, 645 Temeke and 200,740 from Kinondoni) in Dar es salaam (Tanzania National Bureau of Statistics-NBS, 2022). In the present study, the streets were considered as major sampling unit as they allocated households where the individual respondent for this research were found.

Therefore, using the formula of Bankier (1998) for sample size calculations and proportionate sampling technique, 14 streets were obtained including four from Ilala, five from Temeke and five from Kinondoni as well as 192 households (64 from Ilala, 65 from Temeke and 63 from Kinondoni). In order to ensure the good representation of the sample, researchers used multistage sampling technique as initial sampling procedure to come up with clusters as primary sampling units. The reason of using multistage sampling technique is that the technique is suitable to the studies involving large and geographically spread population. However, most of the household studies in the previous household survey indicated five percent of no-response rate (TDHS, 2015). Thus the consideration of five percent non respondents into 192 amount to 202 households. Therefore, the present study involved they survey 202 respondents (household heads) from individual households by using of close ended structured questionnaire. Systematic random sampling was used where by systematic interval was calculated from households listed in each street. From each interval, a street was chosen until all 14 streets were identified. Similar procedures as for selections of streets were done to select the number of the households in each street.

Data Analysis

The research analysis process encompassed pivotal stages including descriptive statistics using SPPS software version 26 and inferential statistics utilized Structural Equation Modeling (SEM) through Amos software. Before, descriptive statistics analysis was performed, the data were screened. During the data screening stage, a detailed investigation of the dataset was done to check and handle outliers, missing data and data distribution in order to ensure data quality and suitability for analysis. The outliers were checked by box plots while missing data were examined by list-wise deletion of the case. Moreover, the SEM assumptions were tested to ensure the data produces the valid outcome. Normality was tested by skewness and kurtosis value and linearity was examined using bivariate scatter plots. On the side of multicollenarity assumption, factor correlation matrix was used to correlation between the variables.

Subsequently, in the EFA, the pattern matrix and Cronbach's Alphas were detailed (Table 3). During the EFA, extraction method employed was maximum likelihood, iterating through 5 cycles. Additionally, the rotation method used Promax with Kaiser Normalization, converging after 5 iterations. This analysis aimed to uncover the fundamental factor structure within the variables. Any items showing poor loading onto the factors were potentially identified and considered for removal, refining the measurement

model to bolster its reliability and validity. These rigorous procedures were fundamental in guaranteeing robust and meaningful outcomes in the research investigation.

Structural Equation Modeling (SEM) stands as a robust research instrument amalgamating regression, factor analysis and mediation analysis (Kline, 2020). It accommodates latent variables embodying unobservable constructs (Kline, 2020). SEM excels particularly in depicting causal links between these latent constructs and observable variables. It utilizes a measurement model to assess the correlation between indicators and latent variables, alongside a structural model that unveils causal pathways (Wang & Wang, 2020). Fit indices are employed to evaluate how well the model aligns with the data, rendering SEM an indispensable guide for researchers (Little, 2021). SEM consists of EFA and confirmatory factor analysis (CFA) which enhance its robustness (Fabrigar *et al.,* 1999). EFA exposes latent patterns and associations, refining the measurement model. CFA validates this model by confirming that observed indicators adequately represent latent constructs (Byrne, 2016). SEM, building upon CFA, introduces causal pathways and connections among latent variables (Kline, 2016).

Mediation analysis was employed in the study to delve deeper into the relationships among variables. This analytical technique helps uncover the underlying mechanisms by which one variable influence another through an intermediary variable. By examining these pathways, mediation analysis sheds light on how and to what extent the effects of an independent variable on a dependent variable are mediated or influenced by a third variable. This approach allows researchers to widen knowledge of the complex interplay between different factors and their impact on the outcomes studied, adding depth and nuance to the research findings. In the present study, we sought to understand the intricate relationship between attitudes, subjective norms, consumer education and purchase intentions. Through mediation analysis, we investigated how education functions as a mediator in two key paths: first, between attitudes toward consumer education and purchase intentions; and second, between subjective norms towards consumer education and purchase intentions (equations i and ii).

$$PI = \beta 0 \quad + \beta 1 \quad \times AT + \beta 2 \quad \times SN + \beta 3 \quad \times EDU \text{ ---------- } (i)$$

$$EDU = \alpha 0 \quad + \alpha 1 \quad \times AT + \alpha 2 \quad \times SN \text{ ---------- } (ii)$$

Where:

- $\beta 0, \beta 1, \beta 2, \beta 3 \beta 0 \quad , \beta 1 \quad , \beta 2 \quad , \beta 3$ are the intercept and coefficients for attitudes (AT), subjective norms (SN), and consumer education (EDU) respectively in the purchase intention (PI) equation (i).
- $\alpha 0, \alpha 1, \alpha 2 \alpha 0 \quad , \alpha 1 \quad , \alpha 2$ are the intercept and coefficients for attitudes (AT) and subjective norms (SN) respectively in the education (EDU) equation (ii).

RESULTS OF THE STUDY AND DISCUSSION

The results indicated that no presence of missing data and outliers were found during data screening which imply that the data were suitable for the analysis. Also, the SEM assumptions results indicated that the data were normally distributed for all variables showing values from -2 to +2. There was linear association between independent variables and dependent variables indicate no cases of linearity exist thus the data were fit for further analysis. However, there were also no problems of multicollenarity observed as correlations coefficient of among the paired variable ranged from 0.315 to 0.532 which are within the tolerance coefficient value of 0.9 proposed by Kline (2011).

Descriptive Statistics

The data is summarized in Table 1, which delineates the distribution of individuals based on age groups, educational levels, and gender within the studied sample. Age-wise segmentation reveals three main groups: Early Mature (18-35 years), comprising 14.5% of the total sample; Late Mature (36-55 years), representing the largest segment at 80%; and Older (above 55 years), constituting 5.5% of the total sample.

In terms of educational attainment, the sample shows varied levels: a minute 0.4% of individuals have non-formal education, while primary, secondary, and diploma levels collectively encompass a substantial portion, ranging from 16.7% to 40.9%. Higher education levels—First Degree, Masters Degree, and Ph.D. degree—collectively account for 4.3% of the total sample, depicting a smaller representation compared to primary and secondary education levels.

Gender distribution indicates that males constitute 52.5% of the total sample, distributed across various age and education categories, with a notable

presence in the Late Mature age group. Conversely, female make-up 47.5% of the sample also spread across different age and education categories, predominantly within the Late Mature age bracket.

Observations from this breakdown highlight that the Late Mature age group holds the highest representation across both genders. Additionally, primary and secondary education levels dominate the educational profile of the sample. Notably, there appears to be a relatively lower proportion of individuals with non-formal education or higher academic degrees (Masters, PhD) compared to those with primary to secondary education.

This comprehensive breakdown provides insights into the demographic composition of the sample concerning age groups, educational attainment, and gender distribution, offering a snapshot of the diversity within the studied population.

Table 1: Descriptive Statistics

			AGE GROUPS			EDU							
			Early Mature "18-35"	Late Mature "36-55"	Older "above 55"	Non Formal education	Primary	Secondary	Diploma	First Degree	Masters Degree	PhD Degree	Total
SEX	Male	% within SEX	14.5%	80.0%	5.5%	0.0%	13.1%	34.5%	14.5%	30.3%	6.9%	0.7%	100.0%
		% of Total	7.6%	42.0%	2.9%	0.0%	6.9%	18.1%	7.6%	15.9%	3.6%	0.4%	52.5%
	Female	% within SEX	25.2%	71.0%	3.8%	0.8%	20.6%	48.1%	9.9%	19.1%	1.5%	0.0%	100.0%
		% of Total	12.0%	33.7%	1.8%	0.4%	9.8%	22.8%	4.7%	9.1%	0.7%	0.0%	47.5%
Total		**Count**	**34**	**160**	**8**	**1**	**39**	**83**	**21**	**52**	**5**	**1**	**202**
		% within SEX	19.6%	75.7%	4.7%	0.4%	16.7%	40.9%	12.3%	25.0%	4.3%	0.4%	100.0%
		% of Total	**19.6%**	**75.7%**	**4.7%**	**0.4%**	**16.7%**	**40.9%**	**12.3%**	**25.0%**	**4.3%**	**0.4%**	**100.0%**

Exploratory Factor Analysis (EFA)

The Factor analysis of Total Variance Explained reveals critical insights into the data's underlying structure. Three factors were identified, with Factor 1 (Attitudes) explaining 48.754% of the variance, Factor 2 (Subjective norms) accounting for 21.32%, and Factor 3 (Purchase intention) contributing 10.343%. Together, these three variables cumulatively explain 80.416% through the sum of squared loadings of the dataset's variability, capturing substantial patterns within the observed variables. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy, at 0.924, indicates the dataset's high suitability for factor analysis. This suggests strong interrelations among variables, supporting the relevance of factor analysis in this context. Bartlett's Test of Sphericity, with an approximate Chi-Square value of 5817.562, 102 degrees of freedom, and a significance level of 0.000, rejects the null hypothesis. This signifies significant correlations between variables, affirming the suitability of factor analysis to examine the underlying structure of the data (Table 2).

Table 2: Variance Explained, Sampling Adequacy and Fit Tests

Total Variance Explained				**KMO and Bartlett's Test**			**Goodness-of-fit Test**		
Factor	Initial Eigenvalues			Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.924	Chi-Square	df	Sig.
	Total	% of Variance	Cumulative %	Bartlett's Test of Sphericity	Approx. Chi-Square	5817.562	494.056	102	0.000
1	8.776	48.754	48.754		df	153			
2	3.838	21.32	70.074		Sig.	0.000			
3	1.862	10.343	80.416						

The Pattern Matrix illustrates strong associations between variables and identified factors. Factor 1 shows robust correlations with Attitudes (AT) items (AT5, AT4, AT3, AT1, AT8, AT2, AT7, AT6) ranging from 0.951 to 0.718, indicating a cohesive pattern among these attitude-related variables. Factor 2 exhibits significant associations with Subjective Norms (SN) and Purchase Intentions (PI) variables (SN3, SN2, SN5, SN1, SN7, SN4) from 0.946 to 0.806, forming a distinct cluster under this factor. Furthermore, Purchase Intentions variables (PI4, PI2, PI3, PI1) strongly align with Factor 3, showing correlations from 0.98 to 0.899, emphasizing a unique relationship specific to purchase intentions (Table 3).

The Factor Correlation Matrix indicates moderate positive correlations between Factors 1 and 2 (0.315) and slightly stronger correlations between

Factors 1 and 3, and 2 and 3 (0.437 and 0.532, respectively), hinting at potential underlying connections between the variables. Regarding reliability, Cronbach's Alpha demonstrates strong internal consistency: Factor 1 scores highest at 0.955, followed closely by Factor 3 at 0.975 and Factor 2 at 0.940. These values underline the reliability and coherence of the identified factors in representing the measured constructs (Table 3).

Table 3: Factors Pattern - Correlation Matrices and Reliability Results

Pattern Matrix			
	Factor		
	1	2	3
AT5	0.951		
AT4	0.905		
AT3	0.882		
AT1	0.852		
AT8	0.835		
AT2	0.832		
AT7	0.81		
AT6	0.718		
SN3		0.946	
SN2		0.855	
SN5		0.839	
SN1		0.836	
SN7		0.807	
SN4		0.806	
PI4			0.98
PI2			0.955
PI3			0.953
PI1			0.899
Factor Correlation Matrix			
1	1	0.315	0.437
2	0.315	1	0.532
3	0.437	0.532	1
Reliability Analysis			
Cronbach's Alpha	0.955	0.940	0.975
Number of Items	8	6	4

Confirmatory Factor Analysis (CFA)

The model of confirmatory factor indicated fit statistics fitting well to the model. The Comparative Fit Index (CFI) exceeds the threshold at 0.976, signaling an excellent fit. Additionally, the Normed Fit Index (CMIN/DF) stands at 2.096, falling within the "Excellent" threshold. The Standardized

Root Mean Square Residual (SRMR) value of 0.036 also signifies an excellent fit, well below the acceptable range. The Root Mean Square Error of Approximation (RMSEA) at 0.063 proposes an acceptable fit, resulted to the acceptable threshold. Finally, the p-value for the PClose test, at 0.022, is within the acceptable limits, supporting the model's adequacy. Overall, the majority of fit measures demonstrate excellent or acceptable fit, affirming the model's reliability in explaining the relationships among the observed variables (Table 4, see also Figure 2).

Table 4: Model Fit Statistics Results

Model Fit Measures				**Cutoff Criteria***			
Measure	**Estimate**	**Threshold**	**Interpretation**	**Measure**	**Terrible**	**Acceptable**	**Excellent**
CMIN	270.362	--	--	--	--	--	--
DF	129	--	--	--	--	--	--
CMIN/DF	2.096	Between 1 and 3	Excellent	CMIN/DF	> 5	> 3	> 1
CFI	0.976	>0.95	Excellent	CFI	<0.90	<0.95	>0.95
SRMR	0.036	<0.08	Excellent	SRMR	>0.10	>0.08	<0.08
RMSEA	0.063	<0.06	Acceptable	RMSEA	>0.08	>0.06	<0.06
PClose	0.022	>0.05	Acceptable	PClose	<0.01	<0.05	>0.05
Standardized RMR	0.034						

**Note: According to Hu and Bentler (1999) recommended combinations of fit measures. Our preference aligns with their suggestions, particularly favoring a combination where CFI > 0.95, SRMR < 0.08, and RMSEA < 0.06. These criteria collectively provide a robust indication of a well-fitting model, enhancing confidence in the model's accuracy and validity in explaining the relationships within the analyzed data.*

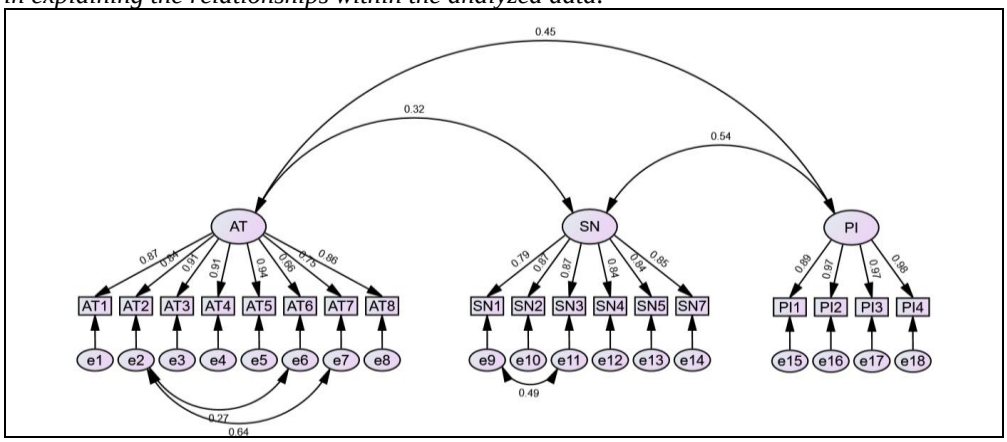

Figure 7: Final CFA Model

In the model of CFA, validity measures encompass key parameters such as Average Variance Extracted (AVE), Mean Variance Extracted (MSV), Construct Reliability (CR), and Maximum Shared Variance (MaxR (H)) across three key factors: Attitudes (AT), Subjective Norms (SN), and Purchase Intentions (PI). The CR values for AT, SN, and PI stand notably high, at 0.953, 0.938, and 0.976 respectively, demonstrating strong internal consistency. The AVE values, measuring the amount of variance captured by latent constructs, indicate substantial percentages of variance explained for each factor: 0.718 for AT, 0.716 for SN, and notably higher at 0.91 for PI. These results affirm the convergent validity of the factors. Additionally, the HTMT (Heterotrait-Monotrait) analysis showcases the relationships between factors, with significant correlations depicted by *** symbols, indicating noteworthy associations between AT and SN, AT and PI, and SN and PI, further reinforcing the model's convergent and discriminant validity. (Table 5, see also figure 2).

Table 5: Confirmatory Factor Analysis Model Validity Measures

Model Validity Measures															
Validity Analysis								**Validity Results - Confidence Intervals**					**HTMT Analysis**		
Factors	CR	AVE	MSV	MaxR(H)	AT	SN	PI	AVE	Lower 95% CR	Upper 95% CR	Lower 95% AVE	Upper 95% AVE	AT	SN	PI
AT	0.953	0.718	0.203	0.966	**0.847**			0.718	0.935	0.966	0.648	0.784	n/a		
SN	0.938	0.716	0.293	0.94	0.320***	**0.846**		0.716	0.901	0.965	0.604	0.822	0.296	n/a	
PI	0.976	0.91	0.293	0.985	0.451***	0.541***	**0.954**	0.91	0.955	0.99	0.843	0.959	0.423	0.521	n/a

*Note: Significance of Correlations: p < 0.100, * p < 0.050, ** p < 0.010, *** p < 0.001. Thresholds are according to Fornell and Larcker (1981) and Henseler, Ringle, and Sarstedt (2015). No validity concerns here. Thresholds are 0.850 for strict and 0.900 for liberal discriminant validity. There are no warnings for this HTMT analysis.*

SEM Path and Mediation Analysis Results

Table 6 presents the Structural Equation Model (SEM) fit measures statistics, crucial in assessing the model's adequacy in explaining the relationships among the observed variables. The Chi-Square test (CMIN) produced 179.88 value and 143 degrees of freedom (DF). The CMIN/DF ratio, at 1.258, falls within the "Excellent" range (between 1 and 3), suggesting a favorable fit among the model and the data. Moreover, other fit statistics further support the robustness of the model: The Comparative Fit Index (CFI) scored 0.994, exceeding the threshold of 0.95 for an "Excellent" fit. The Standardized Root Mean Square Residual (SRMR) and Root Mean Square Error of Approximation (RMSEA) both stand at 0.025 and 0.031, respectively, showcasing excellent fits as they fall below the threshold values of 0.08 and 0.06. Additionally, the PClose value, indicating the close fit model to the data, registers an excellent result at 0.994, exceeding the threshold of 0.05. These collectively high-performing fit measures underscore the strong coherence between the proposed SEM model and the empirical data, affirming its validity in explaining the relationships among the specified constructs.

Table 6: Structural Equation Model Fit Measures Statistics

Model Fit Measures				**Cutoff Criteria**			
Measure	**Estimate**	**Threshold**	**Interpretation**	**Measure**	**Terrible**	**Acceptable**	**Excellent**
CMIN	179.88	--	--	--	--	--	--
DF	143	--	--	--	--	--	--
CMIN/DF	1.258	Between 1 and 3	Excellent	CMIN/DF	> 5	> 3	> 1
CFI	0.994	>0.95	Excellent	CFI	<0.90	<0.95	>0.95
SRMR	0.025	<0.08	Excellent	SRMR	>0.10	>0.08	<0.08
RMSEA	0.031	<0.06	Excellent	RMSEA	>0.08	>0.06	<0.06
PClose	0.994	>0.05	Excellent	PClose	<0.01	<0.05	>0.05
Standardized RMR	0.0239						

The Structural Equation Modeling (SEM) path and mediation analysis (Table 7, Figure 3) yielded crucial insights into the relationships among Consumer education (EDU) introduced as the mediator, Attitudes (AT), Subjective Norms (SN) and Purchase Intentions (PI). Path analysis elucidated direct as well as indirect effects between these variables, providing a comprehensive understanding of their interplay. The direct path coefficients revealed significant influences. EDU exhibited a negative effect on AT (-0.332, p <

0.001), implying that consumers education was associated with unvafourable attitudes towards counterfeit products. However, the influence of Consumer EDU on SN was non-significant (0.03, $p = 0.473$). Notably, PI was positively influenced by both AT (0.44, $p < 0.001$) and SN (0.5, $p < 0.001$), showcasing those positive attitudes and subjective norm contributed to stronger purchase intentions of counterfeit products. Similar findings were consistent with the findings of Ajzen, (1991), Ajzen & Fishbein (1980), Tseng *et al*. (2021) Cortez *et al*. (2023), De Matos *et al. (*2009), Jain & Khan (2017) and Kasber *et al*. (2023).

Mediation analysis delved into the indirect effects, revealing intricate pathways. The indirect path SN_EDU_PI was non-significant (0.008, $p = 0.376$), suggesting no mediation effect via subjective norms between consumer education and purchase intentions thus confirming that subjective norm can directly influence the purchase intention of counterfeit products without the presence of mediating variable (consumer EDU) as indicated by Tseng *et al*. (2021) and Kasber *et al.* (2023).

However, the mediation path AT_EDU_PI was significant (-0.089, $p = 0.006$), indicating that the consumer education partially mediated the relationship between attitudes towards counterfeit products 'purchase intentions. The results are supported by the suggestions of Kumar and Kaushal (2017) and (Akhter, 2023). That is consumer education influences attitude leading to high levels of purchase intention for normal products but the results would be negative for counterfeit products. The total effects highlighted the cumulative impact of variables on each other. Consumer EDU's total effect on AT and SN was notable (-0.332 and 0.03 respectively), emphasizing its direct influence. Meanwhile, PI's total effect was driven significantly by AT and SN (0.351 and 0.508 respectively), indicating their substantial contributions to purchase intentions. (Table 7, see also Figure 3).

Overall, these findings underscore the nuanced relationships within the model. The impact of consumer education on attitudes, alongside the influential roles of attitudes and subjective norms on purchase intentions, elucidate the intricate mechanisms shaping individuals' intentions towards purchases concerning their educational attitudes and societal perceptions. These insights provide valuable directions for interventions or targeted strategies to influence purchase behavior of counterfeit products through tailored approaches addressing attitudes and subjective norms in educational contexts.

Table 7: Path and Mediation Effects

Path Analysis Results							
			Estimate	S.E.	C.R.	P	Label
EDU	<---	AT	-0.332	0.042	-7.908	***	path5
EDU	<---	SN	0.03	0.042	0.718	0.473	path4
PI	<---	EDU	0.268	0.089	3.009	0.003	path3
PI	<---	AT	0.44	0.069	6.34	***	path2
PI	<---	SN	0.5	0.067	7.491	***	path1
Mediation Results							
Indirect Path	Unstandardized Estimate	Lower	Upper	P-Value	Standardized Estimate		
SN_EDU_PI	0.008	-0.009	0.034	0.376	1		
AT_EDU_PI	-0.089	-0.147	-0.037	0.006	1.000**		
Total Effects							
	AT	SN	EDU	PI			
EDU	-0.332	0.03	0	0			
PI	0.351	0.508	0.268	0			
Direct Effects							
	AT	SN	EDU	PI			
EDU	-0.332	0.03	0	0			
PI	0.44	0.5	0.268	0			
Indirect Effects							
	AT	SN	EDU	PI			
PI	-0.089	0.008	0	0			

*Note: Significance of estimates: $p < 0.100$, * $p < 0.050$, ** $p < 0.010$, *** $p < 0.001$*

The study's findings regarding the relationship between consumer education, attitudes, and purchase intentions can be attributed to various influential factors. Education might influence individuals' perceptions and knowledge about counterfeit products. Consumer education could lead to increased awareness of the risks associated with counterfeits, resulting in less favorable attitudes toward purchasing these products (Wang *et al.*, 2020). Additionally, disparities in educational accessibility and quality can impact attitudes. Limited access to quality education might lead to high favorable attitudes of counterfeits, subsequently affecting purchasing decisions in educational domains. Individual perceptions of the value and benefits derived from education are pivotal in shaping attitudes (Garas *et al.*, 2023). If individuals perceive education as a valuable investment that positively impacts their lives, this perception can drive more favorable attitudes, thereby influencing their purchasing decisions. Moreover, levels of information and awareness about

educational options and their perceived value might differ among individuals. Higher awareness and informed decision-making can contribute to more negative attitudes towards fake products, subsequently affecting purchase intentions (Ashraf, 2021).

Subjective norms resulted from by peers, family, or societal expectations, also significantly shape attitudes and behavior. Social pressures or endorsements regarding educational choices can impact attitudes and influence subsequent purchase intentions (Dangi *et al.,* 2020).

Consumer education might not significantly impact subjective norms related to counterfeit products. Other factors, such as social influences or personal experiences, could have a more dominant effect on shaping subjective norms irrespective of educational attainment. According to Bhatia (2018), economic factors such as affordability, access to financial resources, or the perceived return on investment in education, might influence attitudes towards educational products or services and subsequent purchasing behaviors. Understanding these multifaceted reasons behind the findings provides valuable insights into the intricate relationship between education, attitudes, and purchase intentions. It enables policymakers and stakeholders to develop targeted strategies and interventions aimed at positively influencing consumer behaviors and educational perceptions within a developing economy.

The findings also revealed that favorable attitudes (AT) and strong subjective norms (SN) towards purchasing counterfeit products positively influence individuals' purchase intentions. The same findings were aligned with the previous findings of Bupalan *et al.* (2019), Othman *et al.*(2020) and Garas *et al.* (2023). People tend to be more inclined to buy counterfeits if they have positive attitudes toward them or if their social environment strongly supports such purchases. Although consumer education negatively influence attitudes towards counterfeit products, these attitudes still play a mediating role between education and purchase intention. This suggests that while education might shape attitudes negatively, it doesn’t eliminate their influence on purchase intentions entirely. Other factors or mitigating circumstances might moderate this relationship. However, the education partially mediating this path on TRA in explaining purchases intention. Hence the findings confirm TRA in predicting purchase intention and actual behaviour as suggested by Hale *et al.* (2002) that the external variables can be included in the existing relationship in TRA to enhance the relationships.

Consumer education might not significantly mediate the relationship between subjective norms and purchase intention in this context. This suggests that consumer education might not significantly alter the influence of social norms on an individual's purchase intention regarding counterfeit products. These results imply that interventions aimed at reducing the purchase intention of counterfeit products could focus on altering subjective norms. Educating individuals about the risks and ethical concerns associated with counterfeit products might help to counteract their inclination towards purchasing these items.

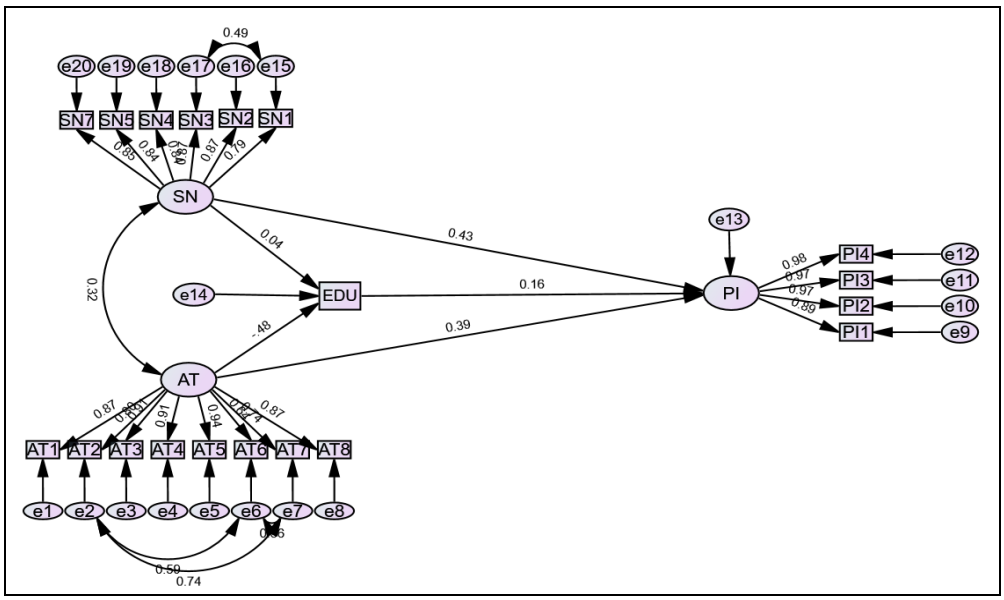

Figure 8: SEM-Mediation

CONCLUSION

Attitude and subjective norms have positive and significant influence on purchase intention in the direct path. This implies that the increase of both favourable attitudes towards counterfeits and subjective norms lead to the increase of purchase intentions of counterfeits. Hence the attitude and subjective norms are crucial factors influencing consumers purchase intentions of counterfeits. Based on the findings from indirect path, it is concluded that consumer education do not mediated the relationship between the subjective norm and purchase intention thus implied that the relationship between can not be strengthened by the presence of consumer education. The findings also confirm partially and significant mediated relationship between attitude and purchase intention. Hence attitude may be a good contributor of purchase intention but the results may be enhanced when consumer education

is added into that relationship. This is because consumer education may influence their knowledge, perceptions and risks associated with intention to purchase counterfeits. It is therefore concluded that consumer education provided important theoretical contribution on the link between attitude and purchase intention in counterfeits. Past scholars focus on studying either relationship between attitude and purchase intention or education and purchase intention separately.

Furthermore**,** this study contributes to the body of knowledge since it supports the theory of reasoned action-TRA (1975) which purported that behaviour intentions can be influenced subjective norm and attitude and also be able to accommodate the external variables. Therefore, the significant relationship between attitude and purchase intention through consumer education implies that the theory is suitable in explaining relationships between these variables in counterfeits products.

RECOMMENDATIONS FROM STUDY FINDINGS

Based on the findings of this study, there are both practical and policy recommendations that are suggested for a Tanzania to leverage insights into consumer behavior in terms of attitude, subjective norms, consumer education and purchase intentions.

Practically, government and marketers may focus on the findings of this study to eradicate marketing of counterfeits products by implementing several strategies of anti-counterfeiting practices. Government and other foreign brand manufacturers should cooperate in coordinating anti-counterfeiting campaigns to enhance the effects of the prevention factors and reduce that of the driving factors on attitudes towards counterfeits, subjective norms and purchase intention. In addition, the study recommends that foreign brand manufacturers and retailers should consider the differences of consumers' behaviour exist in different countries which will guide in developing different marketing strategies tailored in every country. Based on the present study findings, most of the consumers have positive attitude towards counterfeit products and subjective norms with strong purchase intention hence marketers should provide ethical training and marketing campaign to consumers about the risks of counterfeits products. Furthermore, investment in education is pivotal for shaping attitudes and purchase intentions. Prioritizing accessible and quality education through increased investment and enhanced infrastructure can significantly impact societal perceptions, thereby influencing consumer behaviors. Collaborative efforts among educational institutions, governments, and communities are essential

to highlight education's value and foster a culture emphasizing its importance. Supporting informed consumer decision-making is crucial, especially in educational contexts.

On the view of policy recommendations, it is recommended that consumer protection policies should be strengthen to regulate counterfeit goods, intensifying penalties to deter sellers and buyers. Government through its agencies should foster international collaboration to fortify trade policies targeting counterfeit reduction, potentially forming agreements to combat cross-border counterfeit trade. Provide specialized law enforcement training to combat counterfeit distribution networks effectively, bolstering law enforcement capabilities. Policies geared to promote financial literacy, transparent information about educational products/services and incentives for educational investments are essential. It is also recommended that stakeholders should continue researching and monitoring as they are vital for policy making. Moreover, ongoing studies tracking shifts in attitudes, subjective norms, and purchasing behaviors ensure policy adjustments align with evolving consumer behaviour dynamics that contributing to informed decision-making and adaptive strategies.

LIMITATIONS AND AREA FOR FURTHER STUDY

The present study used only one mediating variable the consumer education, other studies may use more than one mediating variable and different mediating variables to come up with more robust findings. The study used cross sectional survey strategy employing questionnaire so the future studies may focus on longitudinal study to assess the long-term influence of consumer mediation on TRA variables to expand the findings. Furthermore, the present study concentrated in Tanzanian consumers as a developing country in Africa, further studies should be carried out in other African countries and outside the Africa to increase the generalizibity of the findings.

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