



Cognitive Dissonance Behavior in Online Consumers (Demographic and Cross Cultural Approach)

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Abstract

This study aims to understand cognitive dissonance behavior in online consumers in a demographic and cross-cultural context. The research variables included cognitive dissonance, visual content of the website, psychological (emotions, preferences, perceptions), demographics and cross-culture. This study uses a quantitative approach. Novelty is research with a demographic and cross-cultural approach in Indonesia. Indonesia has demographic and cultural diversity. The sampling method is purposive sampling. The data collection technique used questionnaires. Data was obtained by 428 respondents. Data analysis with SEM-PLS. This research produced a model. The model's findings show that demographics and cross-cultural have impact on cognitive dissonance behavior in online consumers. The implications of future research are that online marketing strategies need to consider demographic and cross-cultural factors of a country so that online marketing strategies can be more effective. The limitation of research is that research is carried out with a quantitative approach, in the future it can be carried out with a qualitative approach or a quantitative qualitative mix method.

Keywords: cognitive dissonance, web visual content, psychological, demographics, cross-cultural

1. Introduction

Online consumer behavior is an interesting topic (Cummins et al., 2014). Consumer behavior discusses individual behavior, groups and organizations (Kotler & Keller, 2009; Notoatmodjo, 2007; Sunyoto, 2012). Online marketing is a union of internet technology and marketing (Warschauer, 2001). A website is an online marketing platform that will have an impact on consumer behavior such as perception, emotions (Marfuah & Noor, 2023; Patil & Chordiya, 2020). In online shopping, there is a unique behavioral phenomenon, namely cognitive dissonance (Anas et al., 2023). Cognitive dissonance is a spending decision that is contrary to the consumer's beliefs (Leon, 1968). Cognitive dissonance is strongly influenced by psychological factors (Gökcek et al., 2019). The topic of cognitive dissonance, especially in online consumers, is a unique and interesting study (Lazim et al., 2020). There is no specific data on the exact percentage of online consumers who shop due to cognitive dissonance. However, cognitive dissonance is a psychological phenomenon that deviates from shopping habits.

Empirical data shows that Indonesia is a developing country with internet users increasing every year (APJII, 2024). Internet users in Indonesia reach around 221 million (2024) and 215 million (2023). 50.9% of Internet users are men and 49.1% are women. The largest Internet users in Indonesia are in the trade sector (APJII, 2024). The largest consumer group in Indonesia is the millennial generation (Secapramana, 2017). Fashion products are the most popular products for online consumers (Ryding et al., 2022). Fashion products are the most popular products in Indonesia (Katadata, 2019; Wedding & Mustika, 2019; Pattipeilohy et al., 2019; Suleman, 2018). The millennial generation has gained a lot of knowledge and experience in online shopping (Dewidita, 2020; Sebastian, 2020). Every online shopping decision is the result of a process experienced by consumers (Pires et al., 2022). Information is the main basis for online shopping decisions (Setiadi, 2008). Novelty research with cognitive dissonance behavior in online consumers with a demographic and cross-cultural approach, where Indonesia is a country with diverse demographics and cultures, Indonesia has 715 regional tribes. The limitations of previous research on cognitive dissonance are also the basis for this research. Most previous studies only explain the impact of cognitive dissonance but have not discussed in detail the relationship between demographic and cross-cultural factors (Abelson et al., 1968; Sweeney et al., 2000). The problem in this study is to construct a theoretical model that explains the relationship between websites, psychology, demographics, cross-culture and cognitive dissonance as one integrated study with each other.

2. Literature Review

The grand theory of this research is consumer behavior where the behavior of individuals or groups or organizations about the decision-making process or activity to acquire, choose, buy and use goods or services is also influenced by the environment (Kotler & Keller, 2009; Lamb, 2001; Mangkunegara, 2007; Peter & Olson, 2009). A website is a marketing stimulus. Stimulus is a communication stimulus that can take physical form. visual. or verbal that affect individual behavior (Assael, 2004; Menendez & Jonsson, 2010; Pluzinski & Qualls, 1975; Setiadi, 2008). The main components that can be used for a website include logos, color palettes, typography, messaging, user experience. In the psychological concept, consumers are known as affective, cognitive and behavioral (Gagne, 1989). The affective realm is often associated with aspects of emotions, feelings, interests, attitudes, and moral compliance. Cognitive is often linked to systems of meaning and empirical understanding through various interactions and experiences with the environment (Piaget, 1999). Emotions can be desires, hatreds, sadness, miracles, love and joy (Gunarsa, 2006). There are three types of emotions, namely: fear, anger, love (Yusuf, 2011). Cognition is associated with the ability to think, learn and process information (Suharman, 2005; Walgito, 2004). Cognitive dissonance is a cognitive process. Cognitive dissonance occurs when a person makes decisions that are not in accordance with personal beliefs or values (Leon, 1968). Cognitive dissonance behavior occurs when individuals make decisions by changing beliefs.

From an empirical perspective, cognitive dissonance can occur in the purchase of fashion products, namely when consumers feel uncomfortable or anxious before and after buying fashion products. Cognitive dissonance has a positive impact on producers but negatively impacts consumers. Researchers observed that in Indonesia, demographic and cross-cultural developments in society have an impact on cognitive dissonance behavior (Bae, 2016). The number of indigenous peoples in Indonesia will reach 4.57 million people in 2023 (Aman, 2023). Based on previous theories and research studies, the propositions proposed in this study are:

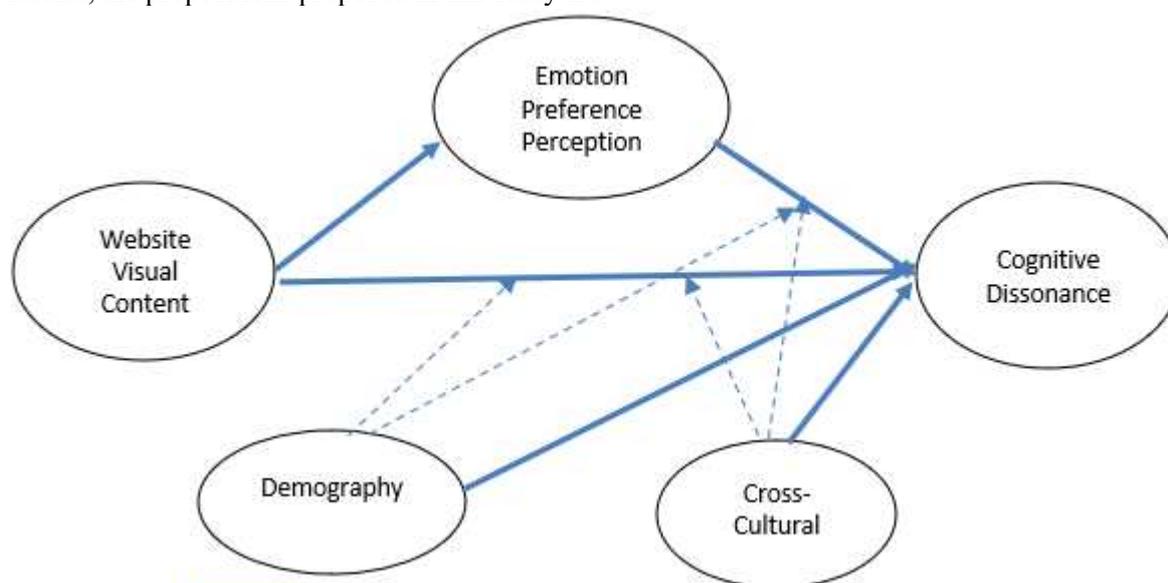


Figure 1. Conceptual Model of Cognitive Dissonance Forming Factors

Source: (Assael, 2004; Kotler & Keller, 2007; Leon, 1968; Pluzinski & Qualls, 1975)(Goleman et al., 2002; Piaget, 1999; Solomon, 2013)

3. Methods

The research design is hypothesis testing (Prajitno, 2008). The research location was conducted in Indonesia. The characteristics of the objects are: online consumers on Shopee, including the millennial generation (Simbolon, 2007). similar products. The bound variable is cognitive dissonance, the independent variable is the visual content of the website, the mediating variable includes emotions, preferences, perceptions, moderation variables include demographics, cross-culture. The sampling method is a purposive sampling technique (Hair et al., 2010). Data were collected with a questionnaire instrument with a Likert scale. Testing of the instrument was carried out by validity and reliability tests. The number of samples was 428 respondents. Data analysis using SEM-PLS (Ghozali, 2011). The reason for using SEM-PLS is because of some of the advantages it offers, especially in situations where the data do not meet the assumptions of normality, the research sample is small, or when the purpose of the research is to predict or develop new theories. PLS-SEM is also more flexible in handling complex and multi-variable models.

4. Results and Discussion

Table 1. Characteristics of Respondents by Gender

	Frequency	Percent	Cumulative Percent
Male	163	27.6	27.6
Female	265	72.4	100.00
Total	428	100.0	

Source: Data 2024

Table 1 gives an idea that most of the respondents have a female gender. This data is only a reference in the findings of this study.

Measurement Model Analysis (Outer Model), the criteria for using the data analysis technique with SmartPLS 4 in assessing the outer model are by looking at convergent validity, discriminant validity, Composite Reliability and Cronbach's Alpha. Convergent validity is the loading factor value of the latent variable and its indicators.

Table 2. Outer Loading

Variable	Indicator	Website Visual Content	Emotion	Preference	Preception	Demography	Cross- Cultural	Cognitive Dissonance
Website Visual Content	X1.1	0.808						
	X1.2	0.815						
	X1.3	0.870						
	X1.4	0.816						
	X1.5	0.860						
	X1.6	0.775						
	X1.7	0.723						
Emotion	X2.1		0.862					
	X2.2		0.845					
	X2.3		0.860					
	X2.4		0.882					
Preference	X3.1			0.808				
	X3.2			0.858				
	X3.3			0.875				
	X3.4			0.885				
	X3.5			0.878				
Perception	X4.1				0.902			
	X4.2				0.884			
	X4.3				0.887			
Demography	X5.1					0.865		
	X5.2					0.875		
	X5.3					0.770		
	X5.4					0.838		
Cross- Cultural	X6.1						0.855	
	X6.2						0.876	
	X6.3						0.725	
	X6.4						0.727	
Cognitive Dissonance	Y1							0.919
	Y2							0.875
	Y3							0.810
	Y4							0.796

Source: Data processing 2025

Based on Table 2, it is known that all indicators in this study have an outer loading value of > 0.70 . Indicators that have an outer loading value of > 0.70 are interpreted as having the indicators in the variable declared to meet the Convergent Validity requirements in the adequate and good category so that this study can be continued for the next stage of validity testing.

Table 3. Fornel-Lacker Criterion Value Table

Variabel	Cognitive Dissonance (Y)	Cross-Cultural (X6)	Emotion (X2)	Demography (X5)	Preception (X4)	Preference (X3)	Website Visual Content (X3)
Cognitive Dissonance (Y)	0.851						
Cross-Cultural (X6)	0.548	0.770					
Emotion (X2)	0.516	0.220	0.862				
Demography (X5)	0.733	0.791	0.331	0.838			
Perception (X4)	0.634	0.766	0.224	0.797	0.891		
Preference (X3)	0.730	0.559	0.583	0.668	0.620	0.861	
Website Visual Content (X1)	0.654	0.764	0.411	0.737	0.715	0.622	0.811

Source: Data processed 2025

Discriminant Validity is used to ensure that each concept in a latent variable is different from the others. The way to test the validity of discrimination is with Fornell Lacker. In (Wong, 2013) explained by Fornell and Larkell if the value of the square root. The Avarange Variance Extracted (AVE) of each variable is greater than the correlation value between the variables and other variables in the model, so the model is said to have a good discriminant validity value. In measuring the internal consistency of the measuring instrument on PLS, it is carried out using a reliability test. Reliability is measured by 3 criteria, namely Cronback's Alpha (CA), Composite Reliability (CR), and Average Variance Extracted (AVE). In reliability testing, it shows the accuracy, consistency of a measuring instrument in making measurements, where reliability will refer to an instrument that is considered reliable to be used as a data collection tool because the instrument is good. The following is presented the composite reliability value for each variable:

Table 4. Cronbach's Alpha, Composite Reliability, Average Variance Extracted (AVE)

Variable	Cronbach's Alpha	Composite Reliability	Average variance Extracted (AVE)
Cognitive Dissonance (Y)	0.872	0.876	0.725
Cross-Cultural (X6)	0.770	0.774	0.593
Emotion (X2)	0.890	0.934	0.743
Demography (X5)	0.858	0.858	0.702
Perception (X4)	0.870	0.871	0.793
Preference (X3)	0.913	0.915	0.742
Website Visual Content (X1)	0.913	0.915	0.658

Source: Data Processed 2025

A variable is declared tested or reliable if it has a Cronbach's alpha value greater than 0.7. Based on the data in table 6, it can be seen that all constructs have met the reliability criteria, this is evidenced by a composite reliability value greater than 0.7. All indicators have consistency in measuring five variables. A variable is recognized as tested or reliable if it has a composite reliability value above 0.7.

Structural Model Analysis (Inner Model), the outer model is a measurement model to assess the validity and reliability of the model. Inner model is a structural model to predict causal relationships between latent variables. The results of the inner model path diagram in this study are described as follows:

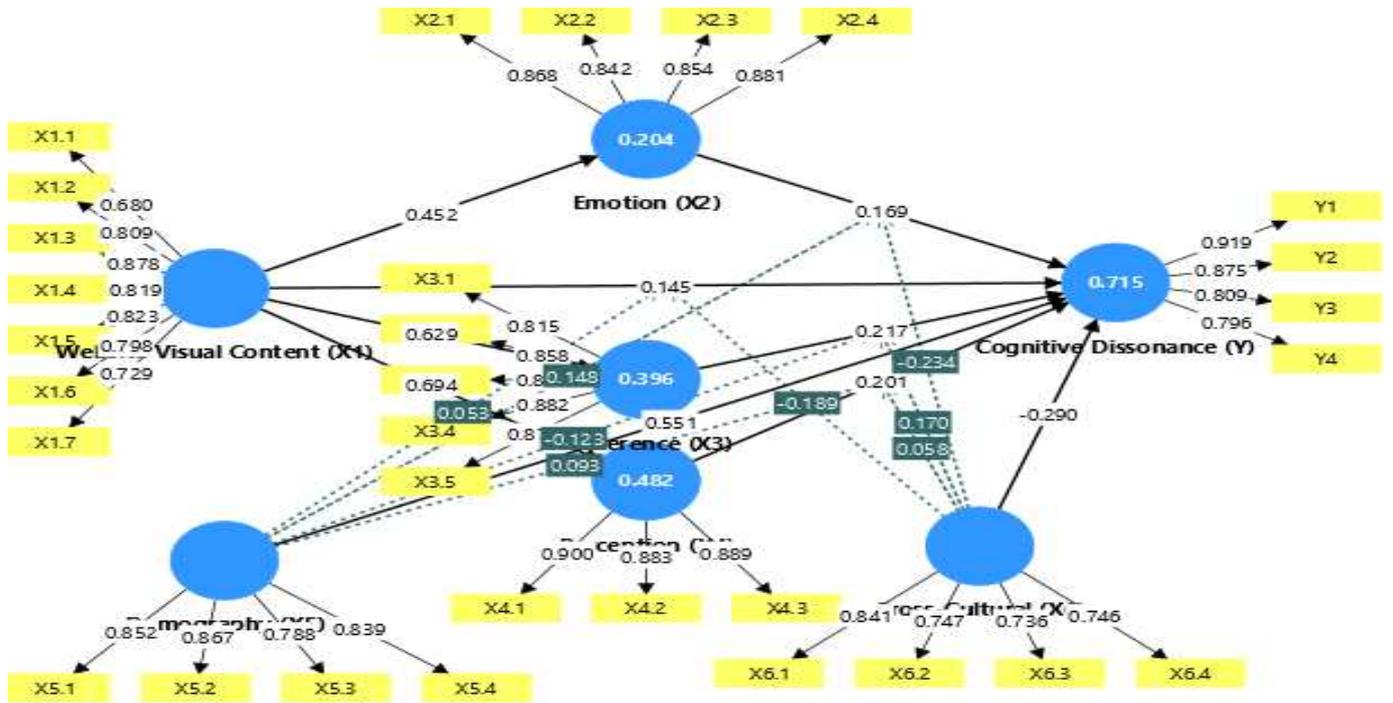


Figure 2. Inner Model

Source: Data processing with Smart PLS 3, 2025

Based on Figure 2, it can be obtained that: Website Visual Content has a positive impact on the emotions of online consumers, Website Visual Content has a positive impact on cognitive dissonance, Website Visual Content has a positive impact on online consumer preferences, Website Visual Content has a positive impact on the perception of online consumers, demography has a positive impact on cognitive dissonance, but cross cultural has a negative impact on cognitive dissonance. Positive impact means that if the causative variable increases, it will have an impact on the increase in the causal variable, and vice versa for negative influences.

Table 5. R-Square Test Results

	R Square	Adjusted R Square
Cognitive Dissonance (Y)	0.715	0,667

Source: Data processing 2025

The value on the R-Square to see the magnitude of the impact of the free latent variable on the dependent variable. Based on table 5, it is concluded that the R-Square value for the latent variable Cognitive Dissonance is 0.715 which shows that the variability of website visual content, emotion, preference, perception, demography, cross-cultural has an impact of 0.715 or equivalent to 71.5% on cognitive dissonance while the rest is influenced by other variables that are not studied.

Effect Size (F-Square), the value of F-Square (F2) is used to determine the influence of the predictor variable (X) on the dependent variable (Y). The value of F-Square ranges from $0.02 \leq F2 < 0.15$ indicating that the variable is having a weak effect, $0.15 \leq F2 < 0.35$ indicates that the variable is having a moderate effect, and $F2 \geq 0.35$ indicates that the variable is having a high effect. Based on Table 8, it can be seen the weak, medium and strong influences on each variable relationship.

Hypothesis testing in SEM (Structural Equation Modeling) PLS (Partial Least Squares) using the bootstrap method was carried out to test the significance of the influence between variables in the model. The bootstrap method involves resampling the original data to create multiple simulated samples. Then, the t-statistical values obtained from these samples are compared with the critical values (t-table) to determine the significance of the influence between variables. Model Evaluation, with Statistics calculation by *Bootstrapping* on SmartPls 4.0 As follows:

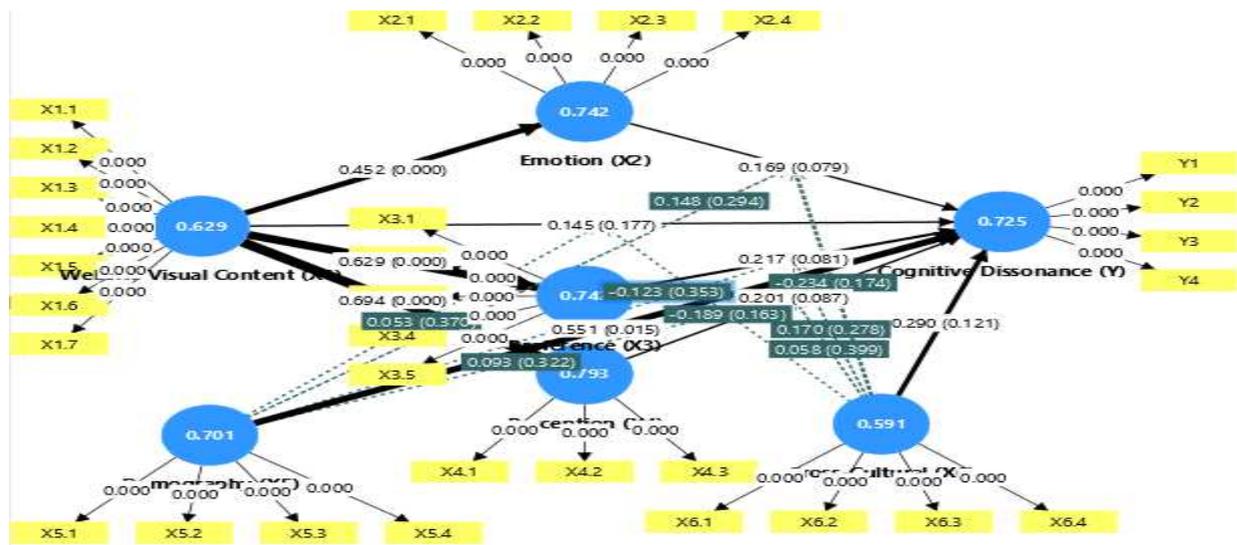


Figure 3. Path Coefficient and p Values Bootstrapping on SmartPLS 3.0
 Source : Data processing with Smart PLS 4, 2025

Table 6. Result For Inner Wights Hypotesis Research

Direct Influence	Path Coefficient	P Values	Result
Website Visual Content → Emotion	0.452	0.000	Sign
Website Visual Content → Preference	0.629	0.000	Sign
Website Visual Content → Perception	0.694	0.000	Sign
Emotion → Cognitive Dissonance	0.169	0.079	No
Preference → Cognitive Dissonance	0.271	0.081	No
Perception → Cognitive Dissonance	0.201	0.087	No
Website Visual Content → Cognitive Dissonance	0.145	0.177	No
Demography → Cognitive Dissonance	0.551	0.015	Sign
Cross-Cultural → Cognitive Dissonance	0.291	0.121	No
Demography Moderate Website Visual Content → Cognitive Dissonance	0.053	0.370	No
Demography Moderate Emotion → Cognitive Dissonance	0.148	0.294	No
Demography Moderate Preference → Cognitive Dissonance	-0.123	0.353	No
Demography Moderate Perception → Cognitive Dissonance	0.093	0.322	No
Cross-Cultural Moderate Website Visual Content → Cognitive Dissonance	-0.189	0.163	No
Cross-Cultural Moderate Emotion → Cognitive Dissonance	-0.234	0.174	No
Cross-Cultural Moderate Preference → Cognitive Dissonance	0.170	0.278	No
Cross-Cultural Moderate Perception → Cognitive Dissonance	0.058	0.399	No

Source: Data processing 2025

Based on table 6, the data that has been processed using Bootstrapping on Smart PLS4, each relationship is hypothetical. In this study, a bootstrap method was used on samples. Table 6 shows the results of the test using the Smart PLS *bootstrapping method* and found the conclusion that there are significant direct relationships but there are not (significant level 0.05). A weak but insignificant influence means that there is a relationship between two variables, but the relationship is not strong enough to be considered important or meaningful in the context of the study. This can happen for a variety of reasons, including large data variations, small sample sizes, or the influence of other variables that aren't measured. In research, significant refers to whether an outcome is strong enough to prove that the observed relationship did not occur by chance. If the results show that the effect is weak and insignificant, it means that even if there is little association between the variables studied, the relationship is not strong enough to be convincing that the relationship is real, or that the result cannot be explained by mere chance. Table 6 illustrates that the influence of demography and cross-cultural mediators is not significant. This means that even if the effect is not strong, the relationship is consistent enough that it can be concluded that the effect is real, even if it is not the result of random fluctuations in the data.

Discussion

A search of previous research shows that there are limitations to the findings. Demographic factors in the context of cognitive dissonance behavior have not been studied in detail. Previous research noted that research on cognitive dissonance in the context of online marketing is still very limited and researchers suggest for research on cognitive dissonance in the context of online marketing (Yap & Gaur, 2014). The results of this study, which show that website visual content has an impact on cognitive dissonance, reinforce the findings of research conducted by Anas et al. (2025) which reveal that website experience has a significant effect on online purchases (Anas et al., 2023). The results of this study also reinforce the findings of research conducted that suggest that cognitive processes have a significant effect on cognitive dissonance behavior (Chatterjee et al., 2023). The latest findings from this research are that demography has a significant effect on cognitive dissonance both as an antecedent factor and a moderation factor in the relationship of website visual content to cognitive dissonance. The findings have not been previously researched on the relationship between demography and cognitive dissonance, but this research can strengthen and develop research conducted by Hoda et al. in Saudi Arabia (20214) which states that demographics, namely gender, age, marital status, occupation, and income are significantly correlated with online shopping (Hoda et al., 2014). Demography has a noticeable effect on the relationship between website visual content and cognitive dissonance

The results of previous research shows that research on the relationship between culture and cognitive dissonance is still very limited, especially for online consumers. The researchers noted that the findings of this study reinforce a study from Tao and Jin (2017) which stated that culture influences cognitive dissonance behavior in the United States and China (Tao & Jin, 2017). This research also strengthens the research of Altanlar et al. (2018) who stated that culture influences cognitive dissonance behavior, with case studies of western and eastern cultures (Altanlar et al., 2018). Although limited by previous research, the findings of this study which states that cross-cultural has a significant impact on cognitive dissonance behavior in online consumers provide reinforcement from several previous research findings in understanding the relationship between website, cognitive dissonance, and culture. Cross-Cultural has a real effect on the relationship between website visual content and cognitive dissonance.

5. Conclusion

The results of this study have provided evidence of findings that demographic and cross-cultural have a real impact on the relationship of website visual content to cognitive dissonance behavior. Demographic factors such as age, race, ethnicity, gender, education, religion and socioeconomic conditions have a real impact on cognitive dissonance behavior in online consumers, especially the millennial generation. Similarly, cross-culturalism that includes aspects of values, norms, and traditions has a real impact on cognitive dissonance behavior in online consumers, especially the millennial generation. These two factors, namely demographics and cross-culturalism, cannot be ignored as factors that shape cognitive dissonance behavior in online consumers.

6. Recommendations

The limitation of this research is the research method with a quantitative approach. Future research can be carried out by qualitative method or mixed method. The future research agenda is needed to examine more deeply online consumer behavior from other approaches such as geographical approaches, future research agendas are needed to research marketing strategies on websites, research other generational consumer groups such as generation Z which is a generation that has information technology capabilities.

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