



CIGARRETES, BETEL LEAVES, AND ARECA NUTS IN THE ACTIVITIES OF THE TOLOTANG COMMUNITY OF BENTENG INDONESIA

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ABSTRACT

Purpose: The purpose of this article is to explain and analyze the direct influence of plants, namely betel leaf and areca nut, education level and environmental factors on the appeal of cigarettes.

Theoretical framework: The research is based mainly on the cultural sociology of the ritual of cigarettes juxtaposed with betel nut and areca nut in every event, a sacred ritual feast for "Uwatta". If the offerings are even in number, then it is a sign of joy and if they are odd in number it is a sign of sadness.

Methods/design/approach: This study is a combination of quantitative and qualitative approaches used sequentially in this study. Data were obtained through observation, interviews, questionnaires, and documentation. The population in this study is the Tolotang Benteng Community in South Sulawesi Province which is spread across 4 (four) districts / cities namely Sidrap, Pinrang, Pare-Pare, and Makassar which is estimated at ± 11,000 people. The sample used in this study was 250 respondents using probability sampling technique or cluster sampling determination based on the division of an area / region in stages. The analytical technique used for hypothesis testing is *Structure Equation Modeling* (SEM) Amos Ver, -2022.

Results and conclusions: The results showed that betel leaf and areca nut plants have a direct effect on the attractiveness of cigarettes in the Tolotang Benteng Community. Then the low level of education has a direct effect on the attractiveness of cigarettes in the Tolotang Benteng Community, and environmental factors have a direct effect on the attractiveness of cigarettes in the Tolotang Benteng Community with a coefficient of determination of 85.8%.

Research implications: Based on a critical analysis of the attractiveness of cigarettes in the activities of the Tolotang Benteng community at the sacred ritual party for "Uwatta" this study recommends the need for socialization about the dangers of smoking and motivation about the importance of education from the government or Non-Governmental Organizations (NGOs) to the Tolotang Benteng community.

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Originality/value: This study intends to preserve the socio-cultural values of the Tolotang Benteng community by keeping in view the dangers of smoking and providing motivation about the importance of education. This study is intended to show how betel leaf and areca nut plants have a strong influence on cigarette attraction in the Tolotang Benteng Community, the low level of education towards understanding the dangers of cigarette attraction in health in the Tolotang Benteng Community and environmental factors have a strong influence on cigarette attraction in the Tolotang Benteng Community.

Keywords: Betel Leaf and Areca Nut, Education Level, Environmental Factors and Cigarette Attractiveness, Tolotang Benteng Community.

CIGARROS, FOLHAS DE BÉTEL E NOZES DE ARECA NAS ATIVIDADES DA COMUNIDADE TOLOTANG DE BENTENG, NA INDONÉSIA

RESUMO

Objetivo: O objetivo deste artigo é explicar e analisar a influência direta das plantas, ou seja, da folha de bétel e da noz de areca, do nível de escolaridade e de fatores ambientais sobre o apelo do cigarro.

Estrutura teórica: A pesquisa baseia-se principalmente na sociologia cultural do ritual dos cigarros justapostos à noz de bétel e à noz de areca em todos os eventos, uma festa ritual sagrada para "Uwatta". Se as ofertas forem em número par, é sinal de alegria e, se forem em número ímpar, é sinal de tristeza.

Métodos/design/abordagem: Este estudo é uma combinação de abordagens quantitativas e qualitativas usadas sequencialmente neste estudo. Os dados foram obtidos por meio de observação, entrevistas, questionários e documentação. A população deste estudo é a comunidade Tolotang Benteng, na província de Sulawesi do Sul, que se estende por 4 (quatro) distritos/cidades, a saber, Sidrap, Pinrang, Pare-Pare e Makassar, estimada em ± 11.000 pessoas. A amostra usada neste estudo foi de 250 respondentes usando a técnica de amostragem probabilística ou a determinação de amostragem por conglomerados com base na divisão de uma área/região em estágios. A técnica analítica usada para o teste de hipóteses é a modelagem de equações estruturais (SEM) Amos Ver, -2022.

Resultados e conclusões: Os resultados mostraram que as plantas de folha de bétel e noz de areca têm um efeito direto sobre a atratividade dos cigarros na comunidade de Tolotang Benteng. Em seguida, o baixo nível de escolaridade tem um efeito direto sobre a atratividade dos cigarros na comunidade Tolotang Benteng, e os fatores ambientais têm um efeito direto sobre a atratividade dos cigarros na comunidade Tolotang Benteng, com um coeficiente de determinação de 85,8%.

Implicações para a pesquisa: Com base em uma análise crítica da atratividade dos cigarros nas atividades da comunidade Tolotang Benteng na festa ritual sagrada de "Uwatta", este estudo recomenda a necessidade de socialização sobre os perigos do tabagismo e a motivação sobre a importância da educação por parte do governo ou de Organizações Não Governamentais (ONGs) para a comunidade Tolotang Benteng.

Originalidade/valor: Este estudo pretende preservar os valores socioculturais da comunidade Tolotang Benteng, mantendo em vista os perigos do fumo e fornecendo motivação sobre a importância da educação. Este estudo pretende mostrar como a folha de bétel e as plantas de noz de areca exercem forte influência sobre a atração pelo cigarro na comunidade Tolotang Benteng, o baixo nível de educação em relação à compreensão dos perigos da atração pelo cigarro para a saúde na comunidade Tolotang Benteng e os fatores ambientais exercem forte influência sobre a atração pelo cigarro na comunidade Tolotang Benteng.

Palavras-chave: Folha de Bétel e Noz de Areca, Nível de Escolaridade, Fatores Ambientais e Atratividade do Cigarro, Comunidade Tolotang Benteng.

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1 INTRODUCTION

The development of the current era is also characterized by a variety of lifestyles in it, ranging from food and beverage intake patterns, from nutritious foods to foods and drinks that contain many excessive substances that can damage cells in the human body. From what was originally just trial and error to addiction to the traditional customs of a region to the pleasure of consuming tobacco (cigarettes) which has now become a trend among teenagers and parents. In accordance with Government Regulation of the Republic of Indonesia No.19 of 2003 which explains that tobacco from the plant *nicotiana tobacum rustica* and other species or their synthesized products contain nicotine and tar which can endanger the wearer or who consumes in a long period of time (Zull, J. E, 2020). Then further theory presents a summary of the consequences of smoking on health, taking into account all organ systems affected, such as the respiratory tract, cardiovascular system, central nervous system, and urinary tract, including mineral metabolism, pregnant women, and others (Haustein & Groneberg, 2009). Furthermore, research on interest in cigarettes is stated in the custom that in leading his community, Uwatta is a charismatic leader who comes from the lineage of La Panaungi. Apart from lineage, obedience, loyalty and sincerity will also belong to Uwatta in managing the social system in his community which can generate trust from the people who follow him (Maidin, et.,al, 2015). Then the Environmental factor is also fundamental in the culture of attraction to cigarettes as stated that the environment is all external factors. The factors in question are physical and biological in nature. These factors have a direct influence on life (Hurd & Wolf, 1974). Such as growth, development and reproductive activities of an organism so that environmental factors in the form of social community, friends and age are very decisive in influencing cigarette consumption (Heckman, et., al, 2019). The next factor is the level of education where factors related to tobacco use from three different perspectives can provide a more comprehensive view of these factors and show the reasons for the failure of various efforts to prevent tobacco use among students and develop more effective programs to improve health (Karimi & Morowatisharifabad, 2020). The level of education is also very decisive in the attraction to cigarettes where through low education, family and social factors that can cause a very large sense of attraction to cigarettes so that WHO data per year in the 2020-2030 decade will kill 10 million people per year, 70% of which occur in developing countries (Palallo, et., al, 2019). The following is the latest data on cigarette users in Indonesia for the last 5 years from 2018 - 2022 as follows:

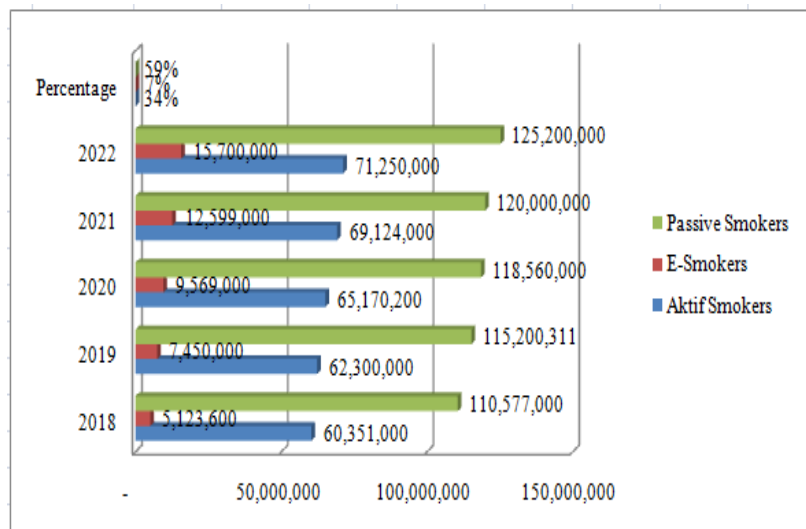


Figure 1. Cigarette User Data in Indonesia for the Last 5 Years 2018 – 2022

Source: Global Adult Tobacco Survey (GATS), 2022



Where Figure 1 of the graph above explains that the number of active smokers in Indonesia increases every year from 2018 amounting to 60,351,000, - to 71,250,000, - or experiencing a growth of 34%. Furthermore, the number of e-cigarette users also experienced a significant increase from 2018 amounting to 5,123,600, - to 15,700,000, - or 7% growth per year. Then the number of passive smokers is increasing from year to year, recorded in 2018 at 110,577,000, - increasing rapidly in 2022 at 125,200,000, - or a growth of 59% per year so that many of these cigarette users endanger the people around them which must be prevented as soon as possible.

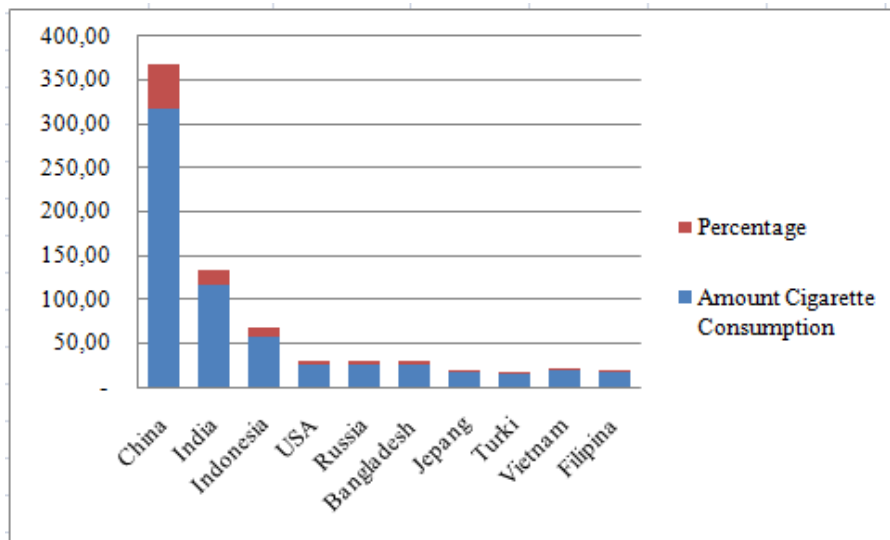


Figure 2. Tobacco Cigarette Consumption Users in Various Countries in the World

Source: World Health Organization (WHO), 1990-2019: a systematic analysis from the Global Burden of Disease Study 2019

From Figure 2 above, it shows that the 10 countries that consume the largest cigarette tobacco in the world in the first place are China with a total of 318,00 or 50.18% of users, followed by India with 116,00 or 18.30% of users, third Indonesia with 58,00 or 9.15% of users, fourth Russia with 25.90 or 4.08 users, fifth and sixth respectively USA, Bangladesh with 25.00 or 3.94 users, seventh Vietnam with 18.10 or 2.85 users, eighth Japan with 16.90 or 2.66 users, ninth Philippines with 16.10 or 2.54 users and tenth Turkey with 14.60 or 2.30 users based on research data (Reitsma, et.,al, 2021).

The role of attentional mechanism plants plays a central role in NLP systems, especially in artificial neural network (RNN) models. Recently, there has been increasing interest in whether the intermediate representations offered by these modules can be used to elucidate the rationale for model predictions, and consequently achieve insight into the model's decision-making process (Jain, 2017). Thus, the culture of cigarette appeal, including the role of plants in cigarette manufacturing to cigarette consumption, found that the plant flavonoid, fisetin significantly canceled oxidative stress, inflammation, and tissue damage induced by cigarette smoke, a potent pro-oxidant in rat lungs. Moreover, fisetin markedly reversed the cigarette smoke-induced increase in neutrophil and macrophage cell populations in bronchoalveolar lavage fluid. These findings are particularly significant given smoking's association with increased oxidative stress and inflammation, which are central to the pathology of various chronic diseases including chronic obstructive pulmonary disease, cancer, and cardiovascular disease. There is also a need for more GxE studies, to uncover the effects of genes and environment across the development of the cigarette use phenotype, which may help inform prevention efforts and potential interventions aimed at reducing the prevalence of cigarette use and the link between environment and cigarette consumption (Do, E., & Maes, 2016).



1.1 Problem Formulation

1. Do areca nut and betel leaf plants have a direct effect on the appeal of cigarettes to the tolotang community in the fortress?
2. Does the level of education have a direct effect on the attractiveness of cigarettes for the tolotang community fortress?
3. Do environmental factors have a direct effect on the attractiveness of cigarettes of the tolotang community fortress?

1.2 Research Objectives

1. Knowing the areca nut and betel leaf plants in the use of cigarettes as an attraction in the tolotang community fortress
2. Knowing the level of education in the use of cigarettes as an attraction in the tolotang benteng community fortress.
3. Knowing the environmental factors of cigarette use as an attraction in the tolotang benteng community fortress.

1.3 Research Benefits

4. To find out how areca nut and betel leaf plants in the use of cigarettes as an attraction as an attraction in the tolotang benteng community.
5. To find out how the level of education in the use of cigarettes as an attraction in the tolotang benteng community.
6. To find out how environmental factors use cigarettes as an attraction in the Tolotang Benteng community.

2 THEORETICAL FRAMEWORK

2.1 Plants Affect the Attractiveness of Cigarettes

In this study, we found that the plant flavonoid, fisetin significantly canceled the oxidative stress, inflammation, and tissue damage induced by cigarette smoke, a potent pro-oxidant in rat lungs. Moreover, fisetin markedly reversed the cigarette smoke-induced increase in neutrophil and macrophage cell populations in bronchoalveolar lavage fluid (Hussain, et.,al,2019). Further implications: An understanding of the technical feasibility of plant-based nicotine reduction technologies, along with the corresponding potential changes in alkaloid or toxic profiles, is required by regulators to develop effective nicotine control strategies with minimal barriers or unintended consequences (Lewis, R. S., 2019). And this marketing strategy aligns with the tobacco industry's history of using language and imagery that communicates reduced health risks and environmental sustainability, 3-5 as well as its longstanding relationship with the food industry (Raskind, et.,al, 2021).

H.1 : Plants affect the attractiveness of cigarettes

2.2 Education Level Affects Cigarette Attractiveness

In research conducted by Palallo, et.,al. (2019) this study was to determine smoking behavior among adolescents in the coastal area of Sinjai Regency and factors associated with smoking behavior among adolescents in the coastal area of Sinjai Regency. How is the relationship of smoking behavior with the health risks experienced by adolescents. Furthermore,



this study assessed the effects of a health education intervention on health hazard knowledge, attitudes and smoking practices among students of the College of Education, Ilorin, Kwara State, Nigeria. It is suggested that continuous health education programmes on smoking should be organized by institutions, associations and communities within and outside schools as this will keep them well informed for behavior change (Adekunle, 2011). Research shows that race, ethnicity, and socioeconomic status (SES) have multiplier rather than additive effects on smoking risk. Living outside poverty was not associated with initiating smoking using flavored cigarettes. Conclusions: In the US, race, ethnicity, and SES show multiplicative rather than additive effects on first cigarette flavor (Assari, 2021).

H.2 : Education level affects attraction to cigarettes

2.3 Environmental Factors Affect Interest in Cigarettes

This study aimed to investigate whether respondents' reported demand for cigarettes, as measured by a hypothetical cigarette purchase task, varies with (1) smoking status, (2) vaping status, or (3) NVP regulatory environment (country used as a proxy). In the hypothetical purchase task, non-daily smokers showed lower price elasticity if they used e-cigarettes than if they did not use e-cigarettes, while there was no clear difference in elasticity between e-cigarette users and non-users among daily smokers or according to their country's regulatory environment with respect to e-cigarettes (Heckman, et.,al, 2019). Furthermore, tobacco use remains the leading cause of preventable death in the United States, which emphasizes the need to understand the genes and environments involved in shaping cigarette use behavior. This suggests the need for more GxE studies, to uncover the effects of genes and environment across the development of the cigarette use phenotype, which can help inform prevention efforts and potential interventions aimed at reducing the prevalence of cigarette use (Do, E., & Maes, 2016). Assess adolescents' and young adults' (AYAs') knowledge and perceptions of the composition and environmental harms of cigarette filters and determine how these perceptions relate to support for policy interventions. Knowledge of the environmental harms of cigarettes among AYA may strengthen support for tobacco control. Further research is needed to further understand knowledge and attitudes about the environmental impact of tobacco and to clarify how this can add to support for tobacco-related policies (Epperson, et.,al, 2021).

H.3 : Environmental factors influence the attractiveness of cigarettes

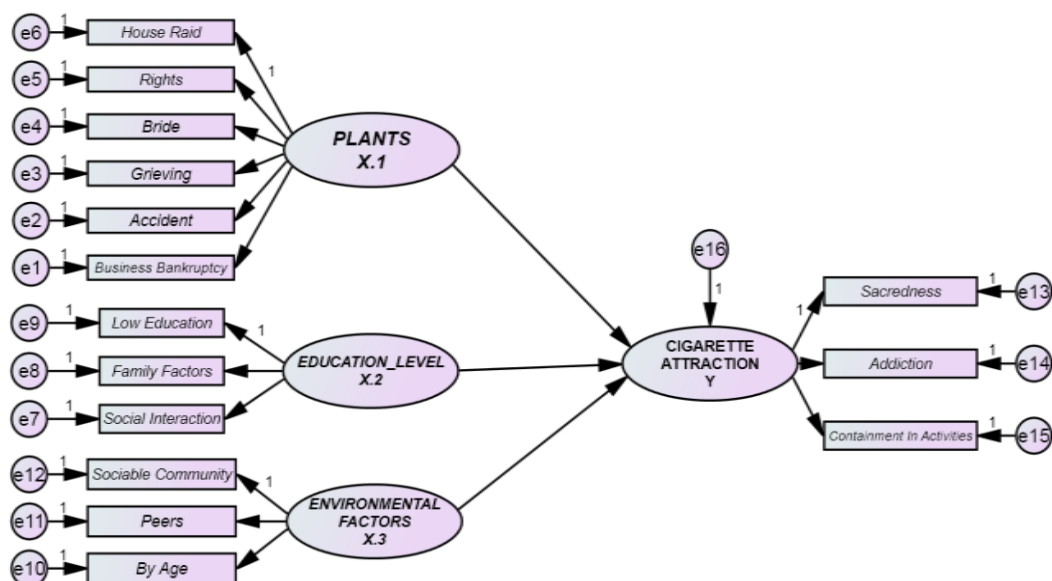


Figure 3. Framework for Thinking of the Relationship Framework between Variables and Indicators
Source: Data processed by SEM Program AMOS Ver, -2022



3 METHODOLOGY

This research was conducted in Tolotang Benteng Community in South Sulawesi Province which spread in 4 districts/cities including Sidrap, Pinrang, Pare-Pare, and Makassar. This location was chosen because South Sulawesi Province because it has distinctive customs and tribes, especially the Tolotang Benteng Community so that South Sulawesi Province is a good destination in researching tribes and customs typical of cigarette attraction. The object of research in this study is the Tolotang Benteng Community in South Sulawesi Province which is spread across 4 (four) districts / cities including Sidrap, Pinrang, Pare-Pare, and Makassar with a research focus on plants as a medium for betel leaf and areca nut, education level, environmental factors and cigarette attractiveness. The population in this study is the total number of analyzes whose characteristics can be estimated. In this study only research was conducted on the Tolotang Benteng Community in South Sulawesi Province which is spread across 4 districts / cities including Sidrap, Pinrang, Pare-Pare, and Makassar which is estimated to number $\pm 11,000$ people (Interview "Uwatta" (Uwa Mangka) (50 years Amparita, Sidrap, 2022). The sampling technique was carried out by Probability Sampling, namely multistage random sampling or determination of cluster sampling based on the division of an area / region in stages, then randomly taken for each region, the aim is that each sample in an area has the same opportunity to become a respondent. This means that any consumer who happens to meet with the researcher can be sampled. As for determining the number of samples used by researchers using the Slovin Formula with a combination of quantitative and qualitative methods (Hennink, et.,al, 2020).

Multistage random sampling above, the total population of the Tolotang Benteng Community in South Sulawesi Province which is spread across 4 districts / cities including Sidrap, Pinrang, Pare-Pare, and Makassar is $\pm 11,000$ people while the sample size is 250 people Tolotang Benteng Community in South Sulawesi Province including Sidrap population of 5,000 with a sample of 100 respondents, Pinrang population of 3,000 with a sample of 50 respondents, Pare-pare population of 2,500 with a sample of 50 respondents, and Makassar population of 500 with a sample of 50 respondents.

The data collection method used in this research is through distributing questionnaires to the Tolotang Benteng Community in South Sulawesi Province which is spread across 4 districts / cities including Sidrap, Pinrang, Pare-pare and Makassar. Data collection in this study used a questionnaire method. Respondents' answers were measured using a 5-point Likert scale. The data analysis technique used is structural equation modeling *Structure Equation Modeling* (SEM) Amos Ver, -2022.

4 RESULT AND DISCUSSION

4.1 Result

The classification of respondents based on gender, age, education, occupation and marital status of respondents is as follows:

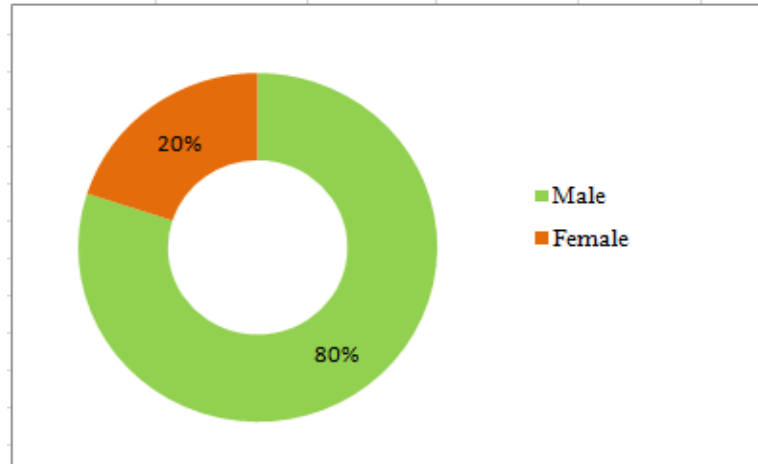


Figure 4. Classification by Gender

Source: Data processed from Tolotang Benteng Community in South Sulawesi Province centered in Amparita Sidrap, (N=250), 2022.

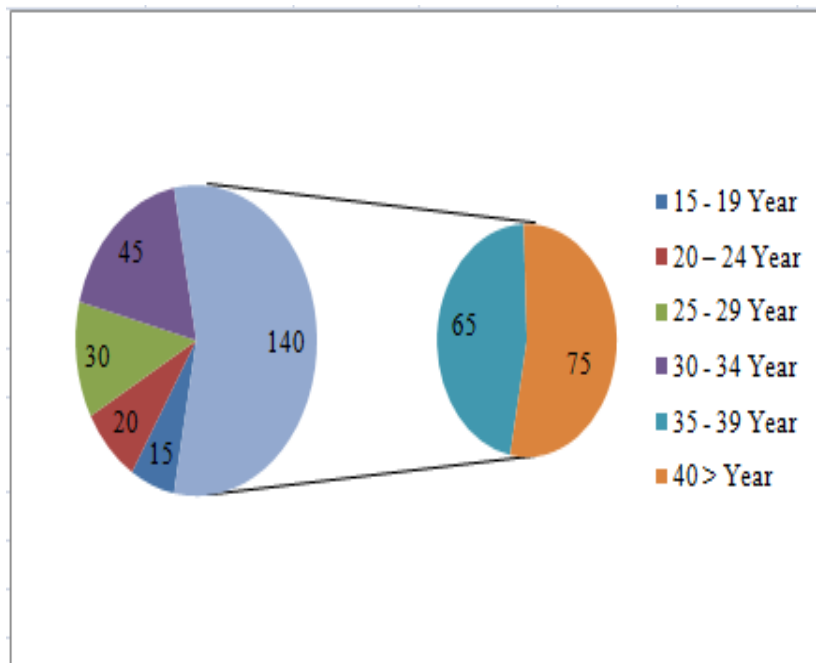


Figure 5. Classification by Age of Respondents

Source: Data processed from Tolotang Benteng Community in South Sulawesi Province centered in Amparita Sidrap, (N=250), 2022.

Based on Figure 4. most of the respondents of the Benteng Tolotang Community are male as many as 200 people or 80%, while the female gender is as many as 50 people or 20% of respondents. Furthermore, Figure 5. classification by age, 15 to 19 years as many as 15 people or 6%, 20 to 24 years as many as 20 people or 8%, 25 to 29 years as many as 30 people or 12%, 30 to 34 years as many as 45 people or 18%, 35 to 39 years as many as 65 people or 26% and 40 years and over as many as 75 people or 30%.

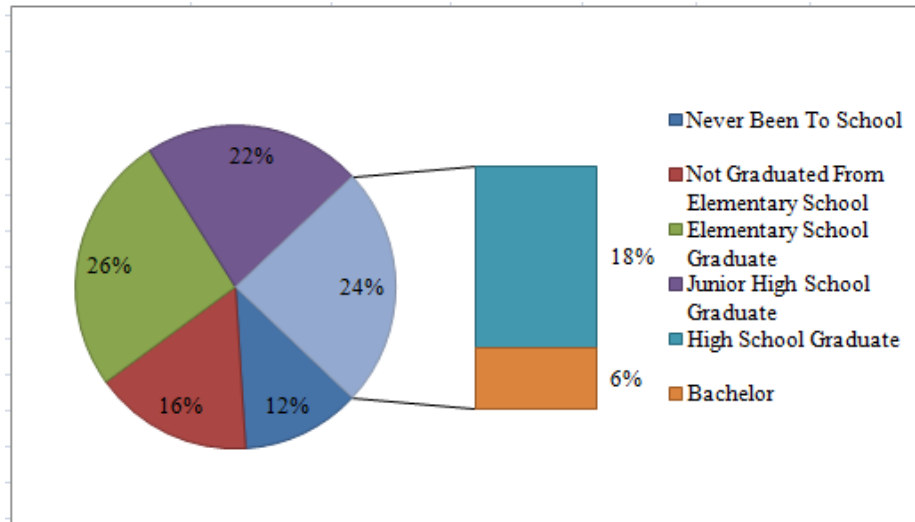


Figure 6. Classification by Education Level

Source: Data Processed Community in South Sulawesi Province centered in Amparita Sidrap, (N=250), 2022.

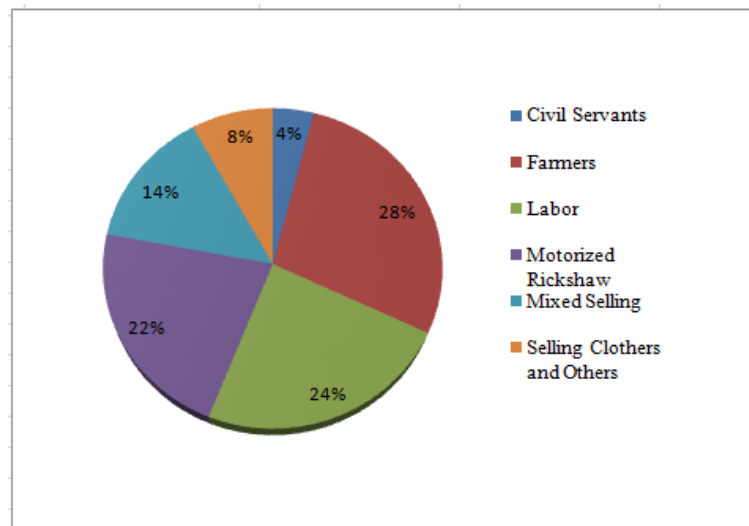


Figure 7. Classification Based on Respondents' Occupation

Source: Data Processed Community in South Sulawesi Province centered in Amparita Sidrap, (N=250), 2022.

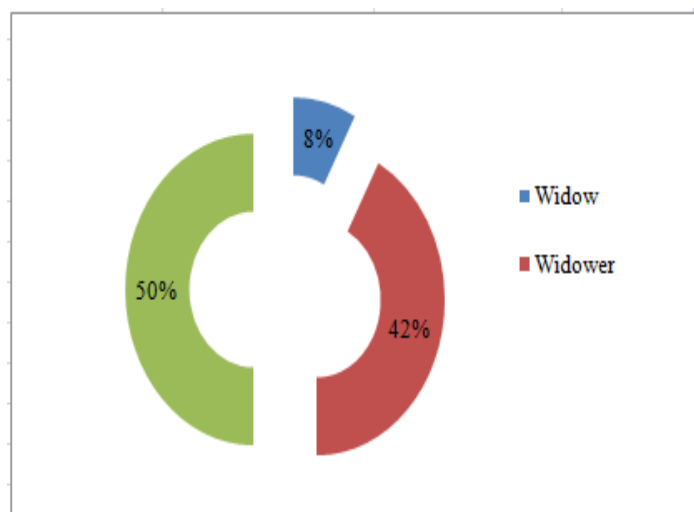


Figure 8. Classification by Marital Status

Source: Data Processed Community in South Sulawesi Province centered in Amparita Sidrap, (N=250), 2022.



Based on Figure 6. the classification based on the level of education of respondents of the Tolotang Benteng Community in South Sulawesi Province includes never going to school by 30 or 12%, not finishing elementary school by 40 or 16%, finishing elementary school by 65 or 26%, finishing junior high school by 55 or 22%, finishing high school by 45 or 18% and undergraduate by 15 or 6%. Furthermore, in Figure 7. above, the classification based on the occupation of respondents of the Tolotang Benteng Community in South Sulawesi Province includes civil servants by 10 or 4%, farmers by 70 or 28%, laborers by 60 or 24%, bencor drivers by 55 or 22%, mixed selling by 35 or 14% and other selling by 20 or 8%. Based on figure 8. above, the classification based on the marital status of respondents from the Tolotang Benteng Community in South Sulawesi Province includes widow status as many as 20 people or 8%, widower status as many as 105 people or 42% and married status as many as 125 people or 50%.

Data analysis testing was carried out with 2 (two) methods, the first was regression testing using the SPSS Ver.-2022 software program and the *Structur Equation Modeling* (SEM) Amos Program, by conducting validity testing first which showed that all question items / statements to measure the betel leaf and areca nut plant variables (X.1), education level (X.2), environmental factors (X.3) and cigarette attractiveness (Y) in this study have a correlation coefficient greater than $t_{table} = 0.165$ (t_{table} value for $n = 250$) (Cooper and Schindler, in Zulganef, 2006). Reliability testing r_{table} above 0.7 Cronbach's Alpha (Walizer, 1987); (Sugiharto and Situnjak, 2006). So, it can be concluded that all question items/statements from the variable indicators of betel leaf and areca nut plants, education level, environmental factors and cigarette attractiveness are valid and reliable.

Furthermore, classical assumption testing according to Billy Nugraha (2022) is a statistical requirement that must be met in multiple linear regression analysis based on ordinary least square (OLS). Data normality testing based on SPSS Ver.-2022 calculations, the probability number value or Asymp. Sig (2-tailed) with a significance level above 0.05 or 5%, then the data is declared normally distributed. Autocorrelation testing shows that it produces a Durbin-Watson value of 1.989. This value is not less than -2 and not more than 2 so it can be concluded that there is no autocorrelation in this study. As well as testing multicollinearity, the results of calculating the Tolerance value, no independent variable has a Tolerance value of less than 0.10 with a Tolerance value of each independent variable having a plant value of 0.990, an education level of 0.532 and environmental factors of 0.535. Meanwhile, the results of the calculation of the Variance Inflation Factor (VIF) value also show the same thing, namely the absence of the VIF value of the independent variable which has a VIF value of more than 10 with the VIF value of each independent variable having a betel leaf and areca nut plant value of 1.010, an education level of 1.880 and environmental factors of 1.869. Referring to the results of the calculation of the Tolerance and VIF values, it can be concluded that there is no multicollinearity between the independent variables in the regression model.

Then multiple regression testing is a statistical technique that simultaneously develops a mathematical relationship between two or more independent variables and the dependent variable (Billy Nugraha, 2022). The simultaneous testing above together shows a regression value of 3657.838, residual 1306.287, df 3, mean square 1219.279, f value count 229.615 and $sig.$ 0.000 which means that together directly betel leaf and areca nut plants, education level and environmental factors have a significant direct influence on cigarette attractiveness. Further partial testing, the structural equation can be formulated as follows: $Y_1 = 0.102 X_1 + 0.497 X_2 + 0.427 e_1$ The structural equation can be interpreted as: (1) the plant variable has a coefficient of 0.102, which means that the plant has a significant effect on the attractiveness of cigarettes, meaning that if the plant increases, it has an impact on increasing the attractiveness of cigarettes. (2) the education level variable has a coefficient value of 0.497 which means that the level of education has a significant influence on the attractiveness of cigarettes, meaning that the lower



the level of education, the attractiveness of cigarettes will increase. (3) the variable environmental factors has a coefficient value of 0.427 which means that environmental factors have a significant influence on the attractiveness of cigarettes, meaning that the higher the level of environmental factors, the attractiveness of cigarettes will increase. As well as testing the value of the coefficient of determination (R²) and the error variable (e) In the calculation of the total coefficient of determination obtained of 0.858, it is concluded that 85.8% of the variable cigarette attractiveness of respondents of the Tolotang Benteng Community of South Sulawesi Province is influenced by betel leaf and areca nut plant factors, education level and environmental factors, while the remaining 14.2% is influenced by other factors not included in the research model or outside the research model.

In finding the findings carried out with the Confirmatory Factor Analysis (CFA) Model which has been carried out with the program (AMOS) obtained the following values:

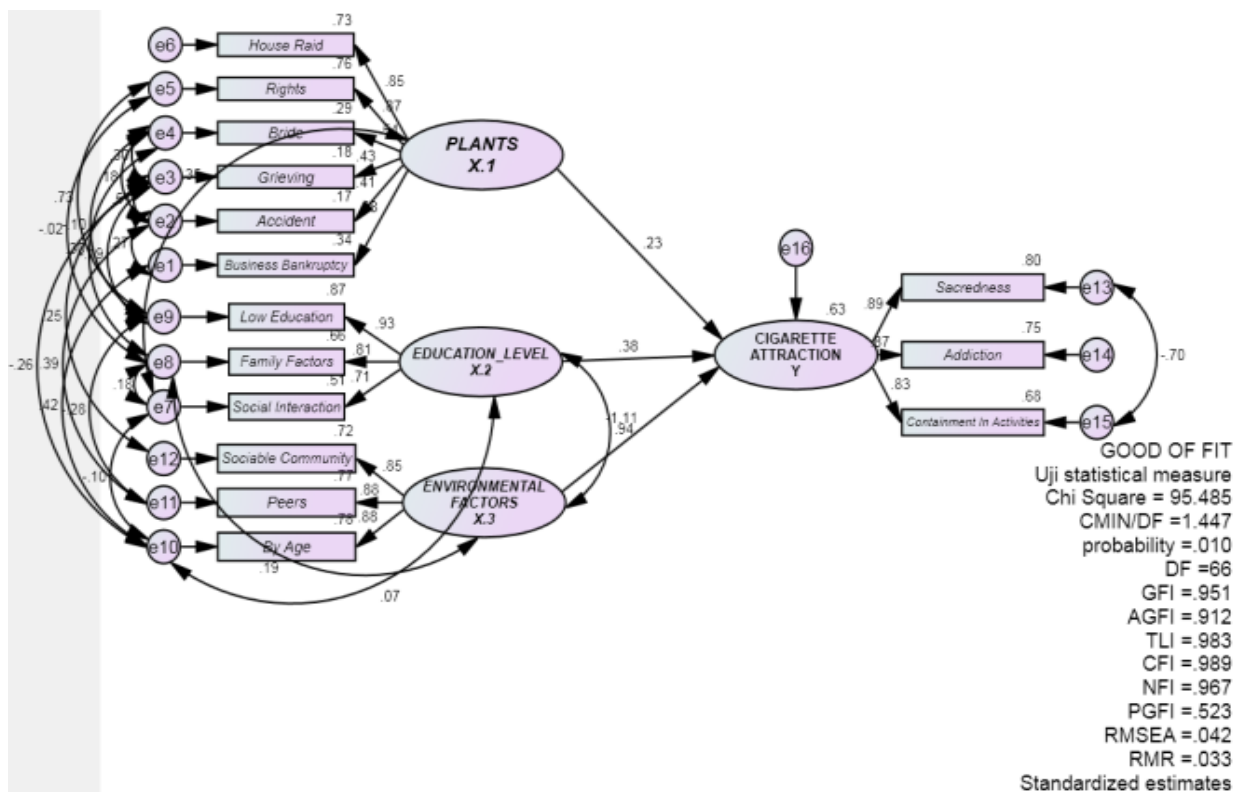


Figure 9. Final CFA Good of Fit Analysis of Exogenous and Endogenous Analysis

Source: Data processed by SEM Program AMOS Ver, -2022

Table 1. Regression Analysis

Path	Estimates	S.E	C.R	P	Label
Y ← X.1	.337	.072	4.703	***	Par-12
Y ← X.2	.415	.175	2.371	***	Par-13
Y ← X.3	.513	.403	3.958	***	Par-14

Source: SEM Calculation Results AMOS Ver,- (N=250), 2022

4.2 Hypothesis Test

Hypothesis 1

Based on hypothesis testing, it is evidenced by a t-value of 4,703 > 1.96 with a significance P-value of 0.000 < 0.05 (5%), this shows that plants have a significant effect on cigarette attractiveness, which means that the first hypothesis is accepted.



Hypothesis 2

Based on hypothesis testing, it is proven that the t-value is $2.371 > 1.96$ with a significance P-Value of $0.000 < 0.05$ (5%), this indicates that the level of education has a significant effect on the attractiveness of cigarettes, which means that the second hypothesis is accepted.

Hypothesis 3

Based on hypothesis testing, it is evident that the t-value is $3.958 > 1.96$ with a significance P-value of $0.000 < 0.05$ (5%), this indicates that environmental factors have a significant effect on cigarette attraction, which means that the third hypothesis is accepted.

5 DISCUSSION

5.1 Plant Factors Affect the Attractiveness of Cigarettes

The results showed that plants directly (direct effect) affect the attractiveness of cigarettes of the Tolotang Benteng Community in South Sulawesi Province with a loading factor value of 0.294 with a path coefficient of 0.337 with a calculated t-value of $4.703 > 1.96$ with a p-value < 0.005 . This means that if the factory will be functioned, it will affect the attractiveness of cigarettes. The achievement of the attractiveness of cigarettes is inseparable from how to process plants in the form of betel leaves and areca nuts given by the Tolotang Benteng Community of South Sulawesi Province. Where plants through traditional activities in the form of betel leaves and areca nuts from a positive perspective include going up to the house, hakikah and brides, from a negative perspective including bereavement, accidents and business bankruptcy of the Tolotang Benteng Community of South Sulawesi Province as a form of fulfillment of traditional events. If you look at the results of the study which show that plants in the form of betel leaves and buahpinang affect the interest in consuming cigarettes, then the Tolotang Benteng Community in South Sulawesi Province provides interest in cigarettes in the form of sacredness, addiction and a container for activities.

The results of the initial Confirmatory Factor Analysis (CFA) of plant variables in the form of betel leaves and buahpinang consist of indicators from a positive perspective including moving house, hakikah and brides, from a negative perspective including grief, accidents and business bankruptcy. The variable attractiveness of cigarettes consists of indicators of sacredness, addiction and a container for activities. In line with research conducted by showing that plants have a significant effect on the attractiveness of cigarettes (Hussain, et.,al, 2019).

The final results of Confirmatory Factor Analysis (CFA) and the results of the hypothesis of plant variables in the form of betel leaf and areca nut consist of indicators in positive terms including housewarming, hakikah and bride, in negative terms including bereavement, accident and business bankruptcy and cigarette attractiveness variables consist of indicators of sacredness, addiction and container in activities. In line with research understanding of the technical feasibility of plant-based nicotine reduction technologies, along with the potential for appropriate changes in alkaloid or toxic profiles, is needed by regulators to develop effective nicotine control strategies with minimal barriers or unintended consequences (Lewis, 2019). That these plants need to be managed properly so that the level of harmful risk in consuming cigarettes can be well suppressed through plant-based nicotine reduction technology in order to achieve plants used in the traditional events of the Tolotang Benteng Community of South Sulawesi Province through betel leaves and areca nut have an effect on cigarette appeal (Maidin, et.,al, 2015). Also supported by health research states that



various dimensions of attitudes towards death in the elderly in Malaysia are influenced by one or several factors, including the number of illnesses suffered, discussions about life and death, marital status, and income. These findings contribute to expanding knowledge about attitudes towards death among the elderly and provide a reference for understanding attitudes towards death in the elderly by (Ngah, et.,al, 2023).

5.2 Education Level Affects the Attractiveness of Cigarettes

The results showed that the level of education directly (direct effect) affects the attractiveness of cigarettes in the Tolotang Benteng Community of South Sulawesi Province with a loading factor value of 0.367 with a path coefficient of 0.415 with a t-value of $2.371 > 1.96$ with a p-value < 0.005 . This means that if the level of education is activated, it will affect the interest in cigarettes. The achievement of interest in cigarettes is inseparable from how the level of education of an area of the Tolotang Benteng Community of South Sulawesi Province. Where the level of education knowledge of the impact of smoking includes low education, family factors and community association. Tolotang Benteng Community in South Sulawesi Province as a form of fulfillment of interest in cigarettes. If you look at the results of research showing that the level of education of an area affects the interest in consuming cigarettes, then the Tolotang Benteng Community in South Sulawesi Province provides interest in cigarettes in the form of sacredness, addiction and a forum for activities.

The results of the initial Confirmatory Factor Analysis (CFA) of the education level variable include low education, family factors and social interaction. The cigarette attractiveness variable consists of indicators of sacredness, addiction and a container for activities. In line with research conducted by Palallo, et.,al. (2019) shows that the level of education affects the attraction to tobacco or cigarette consumption at the adolescent level to the elderly level.

Hasil akhir Confirmatory Factor Analysis (CFA) dan hasil hipotesis variabel tingkat pendidikan meliputi pendidikan rendah, faktor keluarga dan interaksi sosial dan variabel daya tarik rokok terdiri dari indikator kesakralan, ketagihan dan wadah kegiatan. Sejalan dengan hasil penelitian yang menunjukkan bahwa pendidikan kesehatan efektif dalam mengubah sikap terhadap rokok. Disarankan bahwa program pendidikan kesehatan yang berkelanjutan tentang merokok harus diselenggarakan oleh lembaga, asosiasi dan komunitas di dalam dan di luar sekolah karena hal ini akan membuat mereka mendapat informasi yang baik untuk perubahan perilaku (Adekunle, 2011). Selain itu, penelitian menunjukkan bahwa ras, etnis, dan status sosial ekonomi (SES) memiliki efek pengganda dan bukan efek aditif terhadap risiko merokok. Dalam sampel nasional perokok dewasa Amerika, penelitian ini meneliti (1) efek ras, etnis, tingkat pendidikan, dan status kemiskinan pada rasa rokok pertama pada sampel nasional perokok dewasa Amerika, dan (2) perbedaan ras dan etnis dalam efek tingkat pendidikan dan status kemiskinan pada rasa rokok pertama (Assari, 2021). Supported by research, the greatest influence on Sustainable Development is Model 3, with a moderate intensity of influence (46.20%), which is the relationship between circular economy and sustainable development. In this context, it is worth mentioning that natural resources are limited, and the world's population is growing exponentially, which demands new products, food, housing, health, education, employment, and income, which indicates that organizations should reduce the consumption of natural resources and their impact on the environment, where environmental strategies and circular economy can effectively contribute to sustainable development by (Severo & De Guimaraes, 2022).



5.3 Environmental Factors Affect Cigarette Interest

The results showed that environmental factors directly (direct effect) influenced cigarette interest in the Tolotang Benteng Community of South Sulawesi Province with a loading factor value of 0.546 with a path coefficient of 0.513 with a t-value of $3.958 > 1.96$ with a p-value < 0.005 . This means that if environmental factors are activated, it will affect interest in cigarettes. The achievement of interest in cigarettes is inseparable from how the environmental factors of an area in the Tolotang Benteng Community in South Sulawesi Province. Where environmental factors that have an impact on cigarette interest include social communities, friends and age. If you look at the results of research showing that environmental factors in an area affect the interest in consuming cigarettes, then the Tolotang Benteng Community in South Sulawesi Province provides cigarette interest in the form of sacredness, addiction and a place to do activities.

The results of the initial Confirmatory Factor Analysis (CFA) of environmental factor variables include social community, professional friends and based on age. The cigarette attractiveness variable consists of indicators of sacredness, addiction and a container for activities. In line with research conducted by Heckman, et.,al. (2019) which shows that the environmental factors of NVP and vaping regulations on cigarette demand are unknown. In a hypothetical purchase task, non-daily smokers showed lower price elasticity if they used e-cigarettes than if they did not, while there was no clear difference in elasticity between e-cigarette users and non-users among daily smokers or according to their country's regulatory environment with respect to e-cigarettes.

The final results of Confirmatory Factor Analysis (CFA) and the results of the hypothesis of environmental factor variables include social community, professional friends and based on age and the cigarette attractiveness variable consists of indicators of sacredness, addiction and container in activities. In line with research conducted by Do, E., & Maes. (2016) where tobacco use is still the leading cause of preventable death in the United States, emphasizing the need to understand what genes and environments are involved in shaping cigarette use behavior. However, to date, there has been no comprehensive review of the influence of genes, environment and their interactions on cigarette use. This suggests the need for more GxE studies, to uncover the influence of genes and environment on the development of the cigarette use phenotype, which can help inform prevention efforts and potential interventions aimed at reducing the prevalence of cigarette use. Further research examines adolescents' and young adults' (AYA) knowledge and perceptions of the composition and environmental harms of cigarette filters and determines how these perceptions are associated with support for policy interventions. Knowledge of the environmental hazards of cigarettes among AYA may strengthen support for tobacco control. Further research is needed to further understand knowledge and attitudes about the environmental impact of tobacco and to clarify how this may add to support for tobacco-related policies Epperson & Halpern-Felsher. (2021), and reinforced by previous research on Uwatta Leadership in the Tolotang Benteng Community in Amparita Sidereng Rappang South Sulawesi (Maidin, et.,al, 2015). Supported by research discussing our theories and proposals for a new architecture of transnational legal governance that privileges sustainability as a driving element of Law for the creation of a Constitutional State of Environmental Law, with the theoretical basis brought by Nicholás Georgescu-Roegen who, through Entropy and Thermodynamics (second Law of Physics) and contrary to the structure of neoclassical economic thought, considers the environment and the limitations of natural goods as sources of energy, raw materials and waste during economic processes, maintaining the current way of life in the world and which, according to science, can bring serious consequences for humanity in the present and future generations by (Flores & da Cruz, 2021). As well as research with analytical results showing the ineffectiveness of environmental



licensing as an instrument of State regulatory policy for environmental protection, a fact that jeopardizes the effectiveness of the Socio-Environmental State by (Catao & Carneiro, 2022).

6 CONCLUSION

Based on the results of testing and discussion above, the conclusion of this study is that plant variables through betel leaves and betel nuts directly (direct effect) have a significant effect on the interest in smoking Tolotang Benteng Community through indicators from a positive point of view if cigarettes, betel leaves, and betel nuts are an even number of signs of good news such as moving to a new house, hakikah, and brides. Indicators of negative aspects if cigarettes, betel leaves and an odd number of betel nuts are a sign of sad news such as accidents, death and business bankruptcy. Furthermore, the variable level of education directly (direct effect) has a significant effect on the interest in smoking Tolotang Benteng Community through indicators including low education, family and social factors. As well as variable environmental factors directly (direct effect) influence and significant interest in smoking Benteng Tolotang Community through indicators of community association, friends and age level. Of the three variables directly and significantly influence the attractiveness of cigarettes through indicators of sacredness, addiction and place in the activities of the Tolotang Benteng Community in the Regency / City of South Sulawesi Province including Sidrap, Pinrang, Parepare and Makassar.

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REFERENCES

- Abd Rasyid, R., Putera, W., Azis, M., Yahya, I. L., & Azis, F. (2023). Factors Affecting the Improvement of Marketing Performance of Indonesian MSMEs Products. *International Journal Of Capacity Building In Education and Management*, 5(3), 1-13.
- Adekunle, S. (2011). Effects of health education on cigarette smoking habits of young adults in tertiary institutions in a northern Nigerian state. *Health science journal*, 5(3), 0-0.
- Assari, S. (2021). Race, ethnicity, education, poverty, and first cigarette flavor. *International Journal of Travel Medicine and Global Health*, 9(3), 132-138.
- Azis, M., Azis, F., & Putera, W. (2023). Digital Transformation in Encouraging the Advancement of Accounting Learning in the Industrial Era 5.0 Through Optimizing Learning in Schools and on Campus. *International Journal of Innovative Science and Research Technology*, 8(3), 341-351.



- Azis, M., Azis, F., Sulolipu, A. A., Putera, W., & Abd Rasyid, R. (2023). Achieving Accounting Digitalization on University Campuses. *International Journal of Accounting and Public Sector Management*, 1(3), 1-17.
- Catão, C. L. M., & Carneiro, R. (2022). The Promotion of the Socio-Environmental State and Environmental Justice in the Mining Activities Chamber of Minas Gerais. *Revista de Gestão Social e Ambiental*, 16(2), e02964-e02964.
- Do, E., & Maes, H. (2016). Narrative review of genes, environment, and cigarettes. *Annals of medicine*, 48(5), 337-351.
- Epperson, A. E., Novotny, T. E., & Halpern-Felsher, B. (2021). Perceptions about the impact of cigarette filters on the environment and smoking-related behaviors. *Journal of Adolescent Health*, 68(4), 823-826.
- Flores, G. N., & da Cruz, P. M. (2021). Sustainability as an Inducing Element for an Environmental State of Law. *Journal of Law and Sustainable Development*, 9(2), 6.
- Haustein, K. O., & Groneberg, D. (2009). *Tobacco or health?: physiological and social damages caused by tobacco smoking*. Springer Science & Business Media..
- Heckman, B. W., Fong, G. T., Borland, R., Hitchman, S., O'Connor, R. J., Bickel, W. K., ... & Cummings, K. M. (2019). The impact of vaping and regulatory environment on cigarette demand: behavioral economic perspective across four countries. *Addiction*, 114, 123-133.
- Hennink, M., Hutter, I., & Bailey, A. (2020). *Qualitative research methods*. Sage.
- Hurd, L. E., & Wolf, L. L. (1974). Stability in relation to nutrient enrichment in arthropod consumers of old-field successional ecosystems. *Ecological Monographs*, 44(4), 465-482.
- Hussain, T., Al-Attas, O. S., Alamery, S., Ahmed, M., Odeibat, H. A., & Alrokayan, S. (2019). The plant flavonoid, fisetin alleviates cigarette smoke-induced oxidative stress, and inflammation in Wistar rat lungs. *Journal of food biochemistry*, 43(8), e12962.
- Indonesia, P. P. R. (2003). Peraturan Pemerintah Republik Indonesia No. 19 Tahun 2003 tentang Pengamanan Rokok bagi Kesehatan Smet, B. 1994. *Psikologi Kesehatan*.
- Jain, V. K. (2017). *Fundamentals of plant physiology*. S. Chand Publishing.
- Kalla, T. P. H. (2022). Revenue Factors, Service Quality and Location Affect Consumer Purchasing Decisions In Mediating Prices and Product Dealers Products.
- Karimi, M., Kaveh, M. H., & Morowatisharifabad, M. A. (2020). The viewpoints of urban high school male students, parents and teachers about cigarette smoking by adolescents: a social marketing-based qualitative study, Shiraz, Iran. *Shiraz E-Medical Journal*, 21(10).
- Lewis, R. S. (2019). Potential mandated lowering of nicotine levels in cigarettes: a plant perspective. *Nicotine and Tobacco Research*, 21(7), 991-995.
- Maidin, A. M. R., Rajamemang, R., Yudhie, W. P., Wahyuti, W., Ulmi, A. T., & Yahya, I. L. (2023). Determinants of Attractiveness of the Sacred Area of Pakkwarue Wells. *International Journal of Artificial Intelligence Research*, 6(1.2).



- Maidin, R., Kasnawi, T., Makkulau, A., & Samad, S. (2015). THE LEADERSHIP OF UWATTA IN TOLOTANG BENTENG COMMUNITY IN AMPARITA SIDENRENG RAPPANG SOUTH SULAWESI. *International Journal of Academic Research*, 7(1). SOUTH SULAWESI. *International Journal of Academic Research*, 7(1).
- Maidin, R., Nurdin, M., Putera, W., Aliza, N., Qalsum, A. T. U., & Yahya, I. L. (2022). Implementation of the Targeted Electricity Subsidy Policy at the Office of PT. PLN (Persero) ULP Sinjai. *International Journal of Public Administration and Management Research*, 8(3), 29-41.
- Ngah, F. H., Manap, J., Sitinjak, C., & Sobirov, B. (2023). Exploring the Impact of Social Factors on Attitudes Toward Death in Elderly Adults in Malaysia's. *Revista de Gestão Social e Ambiental*, 17(2), e03333-e03333.
- Nugraha, B. (2022). *Pengembangan uji statistik: Implementasi metode regresi linier berganda dengan pertimbangan uji asumsi klasik*. Pradina Pustaka.
- Palallo, U. D., Syafar, M., Amiruddin, R., & Yani, A. (2019). The Effect of Life Skill Education on Cigarette Control in Adolescents. *Indian Journal of Public Health Research & Development*, 10(9).
- Putera, W., Alimuddin, A., Yahya, I. L., & Magfirah, M. (2021). Factors that Affect Employee Welfare in Improving Employee Performance at Pt. Semen Indonesia (SIG) Persero TBK. *Asian Journal of Social Science and Management Technology*, 3, 1-92.
- Putera, W., Rakib, M., & Sahabuddin, R. (2021). Competitive Advantages Influence on Marketing Performance: Study on Food and Beverage MSMEs. *The American Journal of Humanities and Social Sciences Research (THE AJHSSR)*, 4(1), 75-83.
- Putera, W., Sahabuddin, R., Rakib, M., & Girikallo, A. S. (2020). Effect of Service Quality on Customer Satisfaction Through Customer Value in PDAM Kota Makassar (Customer Approach in Developing Clean Water Product Services to Customers). *International Journal of Innovative Science and Research Technology*, 5(10), 1129-1137.
- Putera, W., Sahabuddin, R., Rakib, M., & Lestari, I. (2021). The Influence of Facilities and Innovation in Improving Consumer Satisfaction through Creativity in MSMEs Micro Handicraft Products in South Sulawesi Province. *American Journal of Humanities and Social Sciences Research (AJHSSR)*, 5.
- Rajamemang, A. M., Nurdin, M., Putera, W., & Wahyuti, A. T. Effectiveness of Licensing Services for Issuing Business Identification Numbers Through the Oss-Rba System at the Investment and One-Stop Integrated Service Office of Sinjai Regency.
- Rajamemang, R., Kasnawi, T., Anshari, A., Kahar, F., & Maidin, R. (2019). Determinant Factor of Transformational Leadership in the Age of Globalization. *Jurnal Ad'ministrare*, 6(1), 73-78.
- Rakib, M., Azis, M., Putera, W., Samad, S., Jusuf, Y., & Iriani, N. (2023). Determinants of Entrepreneurial Attractiveness of MSMEs Café and Coffee Stalls. *International Journal of Public Administration and Management Research*, 8(6), 1-17.
- Rakib, M., Sahabuddin, R., & Rajamemang, I. L. Y. (2022). SOCIAL PROBLEMS AND PUBLIC SERVICES IN INFLUENCING THE FULFILLMENT OF THE NEEDS OF THE



PEOPLE OF MAROS REGENCY THROUGH THE PERFORMANCE OF THE GOOD GOVERNMENT GOVERNMENT.

Raskind, I. G., Prochaska, J. J., Epperson, A. E., & Henriksen, L. (2023). Plant-based menthol cigarettes? Food industry trends and farm-to-pack cigarette advertising. *Tobacco control*, 32(e1), e132-e133.

Reitsma, M. B., Kendrick, P. J., Ababneh, E., Abbafati, C., Abbasi-Kangevari, M., Abdoli, A., ... & Gorini, G. (2021). Spatial, temporal, and demographic patterns in prevalence of smoking tobacco use and attributable disease burden in 204 countries and territories, 1990–2019: a systematic analysis from the Global Burden of Disease Study 2019. *The Lancet*, 397(10292), 2337-2360.

Saripuddin.,Kadir, D., Putera, W., & Yahya, I. L. (2022). Government Policy Through Market Orientation in Supporting the Business Performance of Maros Bread Business in Maros Regency. *INTERNATIONAL JOURNAL OF CAPACITY BUILDING IN EDUCATION AND MANAGEMENT*, 5(2), 1-21.

Severo, E. A., & De Guimarães, J. C. F. (2022). The Influence of Product Innovation, Environmental Strategy and Circular Economy On Sustainable Development in Organizations in Northeastern Brazil. *Journal of Law and Sustainable Development*, 10(2), e0223-e0223.

Situnjak, S. D. (2006). Sugiharto dan Situnjak.

Walizer, M. E. (1987). " *WATCH WITH BOTH EYES*": *NARRATIVES AND SOCIAL SCIENCE. SOURCES OF INSIGHT INTO TEACHERS'THINKING*. Harvard University.

Zulganef, Z. (2006). The existence of overall satisfaction in service customer relationships. *Gadjah Mada International Journal of Business*, 8(3), 301-321.

Zull, J. E. (2020). *The art of changing the brain: Enriching the practice of teaching by exploring the biology of learning*. Stylus Publishing, LLC.