



(RESEARCH ARTICLE)



Attitudes of the original people of Papua in consuming areca

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World Journal of Advanced Research and Reviews, 2024, 21(01), 1780–1787

Publication history: Received on 08 December 2023; revised on 17 January 2024; accepted on 19 January 2024

Article DOI: <https://doi.org/10.30574/wjarr.2024.21.1.0136>

Abstract

The people of Papua have long been consuming areca nut. The embodiment of a person's thoughts and feelings to make a decision to take the act of consuming areca nut is an important attitude for a person. Attitude concerns knowledge, feelings, and the embodiment of actions that will direct someone to behave. This study aims to examine the attitudes of the Papuan people regarding the activity of chewing areca nut, chewing health, and maintaining environmental cleanliness as a result of chewing areca nut. The research was conducted in Manokwari City, West Manokwari District using a survey method with interview techniques of 120 respondents from indigenous Papuans. The measurement indicator uses tiered scores with the lowest score 1 to the highest score 5. Data is analyzed using simple tabulations and partial least squares test. The results of the study conclude that the Papuan people agree that chewing areca nut creates self-confidence, feelings of pleasure, and creates a friendly atmosphere. The Papuan people agree that consuming betel nut causes strong teeth and an odorless mouth. The attitude of the Papuan people in keeping the environment clean as a result of chewing areca nut is manifested in a statement not to throw spit and betel dregs anywhere, but this statement of attitude is not followed by any real behavior. There is a positive relationship between the attitude of chewing and the health of chewing areca nut on the attitude of keeping the environment clean.

Keywords: Attitude; Chewing Areca Nut; Papuan people; Living habits; Environmental Hygiene

1 Introduction

The areca plant (*Areca catechu* L) has been widely cultivated by the community, where the part of the areca plant that is widely used is the betel nut. Areca nut seeds are used for cosmetics, wedding ingredients, medicinal raw materials, construction materials, food ingredients and consumption materials [1]. The use of areca seeds along with betel, gambier and lime in the process of chewing areca nut is an activity that is widely carried out by people in the regions of Papua, Sumatra and Java. The results of chewing areca seeds combined with betel, gambier and lime will produce a red color in the saliva. Some people argue that there are benefits to chewing areca nut for consumers who eat areca nut, including making their teeth stronger, their mouth not emitting an unpleasant odor, and it is even believed to be a herbal medicine for diseases in the mouth area [2]. A different thing was stated by [3] that the habit of chewing areca nut if you do not pay attention to dental health, especially the frequency of brushing your teeth, will result in incomplete, irregular teeth, tooth loss, dental caries and even black teeth.

Papuan people have known the areca nut plant for a long time, where it is used for roads, house walls, hut roofs, decorations, gifts for traditional ceremonies, and as a symbol of proposing to a girl. In particular, areca nut is used as a delivery in traditional marriage ceremonies, proposals/minang, births, deaths and as a dish for joint consumption [4]. Areca nuts are even used in traditional ceremonies to resolve conflicts between feuding tribes in Papuan society [5]. The Papuan people's habit of consuming areca nuts along with betel and lime aims to foster a shared life, closeness and unity of life in the Papuan people [2]. It was also confirmed by Pendidikan et al., [6] that Papuan people chew areca nut to foster kinship relationships, as a medicine to eradicate germs in the teeth, eliminate bad breath, and even as a magical medium.

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Papuan people consume areca nuts along with lime betel which causes red betel nut saliva. The red color of betel nut saliva is caused by the presence of tannin and catechin compounds in the leaves of the gambier plant, and anthocyanin compounds in betel leaves [7]. Papuan people chew areca nut with quite high frequency and pay little attention to where they throw their betel nut saliva. As a result of dumping betel nut saliva in any place, the environment becomes dirty and unsightly. The same thing applies to the remaining chewed betel nut pulp. Ismawari.R et al., [7] stated that the habit of spitting carelessly creates a dirty environment and even provides opportunities for infectious diseases to arise through saliva.

Human behavior that pollutes the environment due to saliva and areca nut dregs is a challenge and problem that needs to be studied from behavioral tendencies, namely attitudes. Human attitudes are an indicator of daily behavior, but attitudes sometimes cannot determine a person's actions [8]. The attitude of chewing areca nut is a manifestation of a person's thoughts when consuming areca nut seeds and then thinking about making a decision to throw away saliva and areca nut dregs. Attitudes can be studied through the cognitive domain, affective domain and conative domain [9]. Through the manifestation of attitudes, a person's tendency to make decisions to realize real actions will be known. Therefore, the aims of this research are (1) to examine the attitudes of the Papuan people regarding the activity of chewing areca nut, (2) to examine the attitudes of the Papuan people regarding the health of chewing areca nut, (3) to examine the attitude of the Papuan people in maintaining environmental cleanliness due to betel nut chewing, and (4) to examine The relationship between the attitude of the Papuan people regarding chewing and the health of chewing areca nut with the attitude of maintaining environmental cleanliness due to chewing areca nut.

2 Material and methods

The research location is Manokwari City, West Manokwari District, Manokwari Regency, Papua. The reason for determining the location was determined deliberately on the grounds that it was the center of population distribution in the West Manokwari district. The research subjects were 120 indigenous Papuan people who consumed areca nut. The research was designed in a quantitative descriptive manner using survey methods with interview techniques and field observations. The observation variables studied include people's attitudes about chewing areca nut, attitudes about the health of chewing, and attitudes towards maintaining environmental cleanliness due to betel nut chewing. Variable measurement uses a tiered scale which is categorized into 5 (five) attitude categories, namely strongly agree, agree, doubtful, disagree, strongly disagree. Data processing was carried out by tabulation and partial least squares (PLS) test. Tabulation testing to answer questions about Papuan people's attitudes about chewing areca nut, chewing health, environmental cleanliness. Meanwhile, the PLS test is to answer the relationship between betel nut chewing attitudes.

3 Results and discussion

3.1 Attitudes of Papuan People regarding the Activity of Chewing Areca Nuts.

Attitude is a person's tendency to act after evaluating a particular object. The object observed was the areca nut chewing activity of the Papuan people. The achievement scores for the attitude of the Papuan people regarding chewing areca nut are presented in Table 1.

Table 1 Papuan People's Attitudes regarding Areca Nut Chewing Activities

No.	Position statement	Score achievement	Information
1	After eating, you must continue to chew areca nut	3.7	Agree
2	To chew areca nut you have to use betel and lime	4.5	Strongly agree
3	Chewing areca nut without betel is unpleasant	3.9	Agree
4	Dried areca nut seeds are tastier than fresh areca nut seeds	2.7	Doubtful
5	Chewing areca nut gets better and better over time	3.8	Agree
6	In official ceremonial activities it is not permitted to chew areca nut	3.3	Agree
7	Areca nut is only used as a delivery object for traditional events	2.5	Doubtful
8	Chewing areca nut only during traditional ceremonies	2.1	Don't agree

9	Chewing areca nut can make you full	2.5	Don't agree
10	Chewing areca nut tastes good	4.1	Agree
11	Not chewing areca nut makes your mouth feel bad	3.4	Agree
12	Chewing areca nuts with friends creates a friendly atmosphere	4.3	Strongly agree
13	Chewing areca nut makes you feel happy, happy	3.9	Agree
14	Chewing areca nut can make people addicted	4.0	Agree
15	Chewing areca nut makes people confident	3.7	Agree
16	Chew areca nut only at home/boarding house	3.4	Agree

Attitudes regarding the activity of chewing areca nut are expressed in 16 (sixteen) attitude statements. Overall, statements of attitude of agreeing to strongly agree dominate (62.5%) the attitude statements of the Papuan people regarding the activity of chewing areca nut. This means that Papuan people are accustomed to the activity of chewing areca nut. The habit of chewing areca nut has been known since teenagers with the frequency of chewing almost every day. The chewing habit is also not limited to a certain age group or gender. Kamisorei R.V & Shrimarti R.D, [10] stated that the entire community, including employees, students and the general public in Papua, regardless of educational level or city or village area, are fanatical consumers of areca nut which is eaten together with whiting.

The activity of chewing areca nut has become a daily habit of the Papuan people to strengthen fraternal relations in society [2]. The activity of chewing creates self-confidence, feelings of joy and if consumed together in a community creates a friendly atmosphere. The consumption of areca nut is known through information from the family environment such as grandparents, parents, siblings and friends. If linked to the concept of attitudes that occur due to individual needs including self-actualization and self-esteem [8], it can be said that consumption of areca nut for the Papuan people has become a necessity of life. The way to chew areca is done by mixing betel and lime, where the areca nut consumed is mostly undried areca nut. Siagian, [2] stated that Papuan people such as the Arfak, Serui, Biak and Jayapura tribes chew areca nut by mixing betel and lime. The activity of chewing areca nut is considered inappropriate or impolite in ceremonial situations such as celebrations, worship and official meetings. On the other hand, if it is an informal situation where everyone is more relaxed in a crowd telling stories with friends then chewing areca nut is permitted. There is doubt that dried areca nut is tastier than fresh betel nut and areca nut is only intended as an intermediate item at traditional events.

The attitude of doubt is because the quality of chewing dry and wet areca nuts both provide a pleasant and delicious taste. There is doubt that betel nut seeds are only an intermediate object in traditional events, because the use of areca nut seeds has now spread to all dimensions of people's lives, such as daily consumption and thanksgiving consumption. The attitude of not agreeing that betel nut makes you full because it is the right time to consume areca nut before eating to get rid of bad breath.

3.2 Papuan People's Attitudes Regarding the Health of Chewing Areca Nut.

Papuan people's attitudes about the health of chewing areca nut are measured by statements about dental and oral health. Achievement scores are presented in Table 2.

Attitudinal responses regarding the health of betel nut chewing were expressed in 10 attitude statements. Overall, statements of agree to strongly agree were the most frequently chosen statements (80%). This means that people understand dental and oral health if they consume areca nut. People believe that chewing areca nut causes the growth of tartar, after chewing areca nut you have to brush your teeth, the color of your teeth changes, making your teeth strong and your mouth odorless. Iptika, A. [3] stated that chewing areca nut can result in black teeth, tooth loss, incomplete teeth, and the emergence of dental caries. Because the activity of brushing your teeth after chewing areca nut is very necessary [3]. An agreement was expressed that chewing areca nut will make people dizzy/drunken and cause infections in the mouth. People will feel dizzy when they first learn to chew areca nut, but then the dizziness will gradually disappear. Kamisorei R.V & Shrimarti R.D, [10] stated that areca nut seeds contain alkaloids with the compound arecolin which can cause dizziness and nausea. This arecolin compound also causes dependence on areca nut consumption [11].

The response is doubtful that chewing areca nut can cause teeth to fall out and the tongue to burn. This attitude of doubt arises because if brushing teeth is carried out regularly, damaged teeth will not occur. However, sometimes Papuan

people forget to brush their teeth because they feel comfortable and relaxed when chewing areca nut. Tarigan S.Br, [12] chewing areca nut can create a feeling of comfort in continuing to consume areca nut.

Table 2 Attitudes of Papuan People regarding the Health of Chewing Areca Nut

No .	Position Statement	Score achievement	Information
1	Chewing areca nut makes teeth strong	4.2	Strongly agree
2	Chewing areca nut causes teeth to fall out	3.0	Doubtful
3	Chewing areca nut causes the growth of tartar	3.4	Agree
4	Swallowing betel nut saliva is dangerous, so it should be thrown away	3.9	Agree
5	Chewing areca nut causes the color of teeth to change	3.3	Agree
6	After eating, chewing areca nut, you should brush your teeth	4.4	Strongly agree
7	Chewing areca nut makes people dizzy/drunken	3.5	Agree
8	Chewing areca nut makes the tongue burn	3.3	Doubtful
9	Chewing areca nut causes infections in the mouth	3.5	Agree
10	Chewing areca nut can overcome bad breath	4.2	Strongly agree

3.3 Papuan People's Attitude to Maintain Environmental Cleanliness Due to Chewing Areca Nut.

Community attitudes are indicated by cognitive, affective and conative statements in maintaining environmental cleanliness after chewing areca nut. The results of achieving the attitude score for maintaining environmental cleanliness are presented in Table 3.

Table 3 Attitudes of Papuan People to Maintain Environmental Cleanliness

No .	Position Statement	Score achievement	Information
1	Dispose of the betel nut spit in the soil or sand	3.5	Agree
2	Throw away betel nut spit in any place	2.2	Don't agree
3	You can dispose of the betel nut spit in a mineral glass plastic container	3.9	Agree
4	Areca nut saliva stains are difficult to clean	4.0	Agree
5	Places of worship, lecture halls/schools, offices, chewing areca nut is not permitted	3.9	Agree
6	Areca nut dregs can be thrown away anywhere	2.1	Don't agree
7	Markets and ports are not permitted to dump spit and areca nut dregs	3.1	Doubtful
8	There must be a special place for betel nut spit in churches, offices and schools	3.8	Agree
9	Don't eat betel nut while talking to other people	4.2	Strongly agree

Statements responding to attitudes towards environmental cleanliness due to chewing areca nut were given in 9 statement items. Overall, the attitude statements agree to strongly agree dominate the attitude statements (67%). This means that the Papuan people are aware that chewing areca nut can have an impact on environmental cleanliness. The attitude of agreeing to strongly agreeing can be seen from the statement that throwing areca nut spit must be on the ground or sand, areca nut stains are difficult to clean, public spaces such as places of worship, campuses, offices are not

permitted to chew areca nut, there must be a special place for areca nut spit/areca pulp in public places, and don't communicate with other people while chewing areca nut.

An interesting condition of the statement of agreement is that betel nut spit is allowed to be thrown away in containers such as plastic mineral cups. In the current situation, areca nut chewers put betel nut saliva in plastic mineral cups as temporary containers, but then the containers are not placed in the trash but just left. Placing a container of betel nut spit in a plastic mineral cup that is left unattended will have a dirty effect if the container is touched, causing the betel nut spit to fall and scatter out of the container. This situation is often found in public areas and creates a dirty environment due to areca nut stains.

The attitude of doubt that markets and ports are not permitted to dump spit and areca nut dregs. This is because the community believes that this location is a public location where many people gather and are involved, so it is difficult to regulate people's behavior not to throw saliva and areca nut dregs in the places provided. This is different from the location of churches, offices and schools, which even though they are public spaces, the number of people can be controlled by social regulations that are adhered to by the community.

The attitude of not agreeing that saliva and areca nut dregs can be thrown anywhere. This statement of disagreement is very helpful in maintaining environmental cleanliness even though in reality spit and areca nut dregs are still found in public locations, churches, offices, and even schools which already have regulations for maintaining environmental cleanliness. In public locations such as markets, ports, hospitals where communities gather, you can often find spit and areca nut dregs. This means that, even though the Papuan people have a disapproving attitude about not throwing spit and areca nut dregs anywhere, the actual behavior found is that there is still a lot of spit and areca nut dregs thrown anywhere. Ismawari.R et al., [7] reported that the habit of spitting everywhere and throwing away areca nut dregs does not provide a clean environment.

3.4 The Relationship between Papuan People's Attitudes regarding Chewing Activities and the Health of Areca Nut Chewing to Attitudes to Maintaining Environmental Cleanliness Due to Betel Nut Chewing.

The relationship between the attitude of chewing activity and chewing health with the attitude of maintaining environmental cleanliness was tested using PLS. The relationship estimation results are presented in Figure 1.

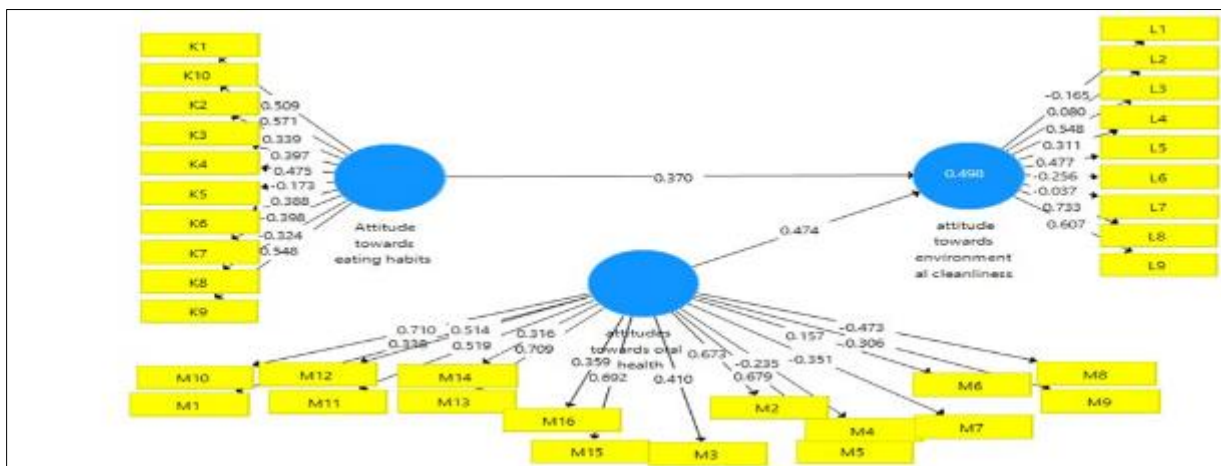


Figure 1 Estimated Parameters of the Relationship between Chewing Activity Attitudes and Chewing Health on Attitudes to Maintain Environmental Cleanliness Due to Betel Nut Chewing

The relationship parameter estimation model (Figure 1) shows that several variables have outer loading values that are below 0.5. This means that the resulting model parameter estimates are not yet valid and reliable, so it is necessary to remove several variables from the main model.

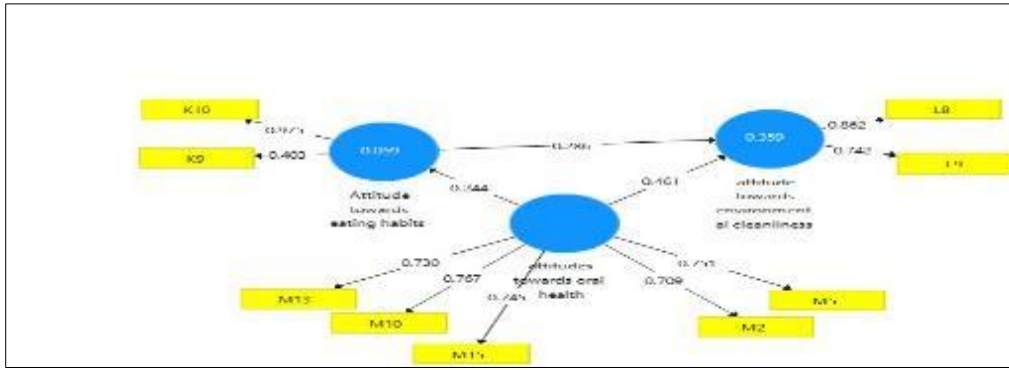


Figure 2 Parameter Adjustment Model for the Relationship between Chewing Activity Attitudes and Chewing Health on Attitudes to Maintain Environmental Cleanliness Due to Betel Nut Chewing

Information: M10: Chewing areca nut tastes good; M2: Chewing areca nut must use betel and lime; M13: Chewing areca nut makes you feel happy; M15: Chewing areca nut makes people confident; M5: Chewing areca nut gets better and better over time; K9: Chewing areca nut causes infection in the mouth; K10: Chewing areca nut can overcome bad breath; L8: There must be a special place for betel nut spit in churches, offices and schools; L9: Don't eat betel nuts when talking to other people

The results of the adjustment model by eliminating several variables from the main model are shown in Figure 2. The adjustment model (Figure 2) shows that the AVE and Composite reliability values (Table 1) are above 0.5, which means that the adjustment model formed is valid and reliable. Furthermore, from the results of the path coefficient test (Table 2), it appears that there is a relationship between attitudes towards chewing activities and attitudes towards maintaining environmental cleanliness, attitudes about chewing health influence attitudes towards maintaining environmental cleanliness, and attitudes towards chewing activities influence attitudes about chewing health. The relationship between variables in the adjustment model (Figure 2), shows that the attitude of maintaining environmental cleanliness is characterized by the variables of providing a special place (L8) and not talking (L9). Attitudes to maintain environmental cleanliness are influenced by chewing attitudes and attitudes about chewing health. Variables that characterize chewing behavior include: it tastes good (M10), creates a happy atmosphere (M13), tastes better for longer (M5), uses betel and areca nut (M2), and self-confidence (M15). Chewing attitudes influence attitudes about chewing health, where variables that characterize attitudes about chewing health include overcoming bad breath (K10) and resulting mouth infections (K9).

Table 4 Reliability and Validity Test Results for Attitude Variables

Attitude Variable	Composite	Average Variance Extracted
Attitude to maintain environmental cleanliness	0.78	0.65
Attitudes about Chewing Activities	0.86	0.55
Attitudes about Chewing Health	0.68	0.56

Table 5 Test Results for the Relationship between Attitude Variables

Attitude Variable	Original value	Statistical table	Opportunity value	Information
Attitudes regarding the activity of chewing areca nut towards the attitude of maintaining environmental cleanliness due to chewing areca nut	0.461	4.926	0.000	Positive influence
Attitudes about the health of chewing towards attitudes towards maintaining environmental cleanliness due to chewing areca nuts	0.286	3.227	0.001	Positive influence
Attitudes about betel nut chewing activities towards attitudes about chewing health	0.244	2.666	0.008	Positive influence

3.5 The relationship between chewing activity attitudes and chewing health and environmental cleanliness due to betel nut chewing

Chewing areca nut for the Papuan people can be categorized as a habit. This can be seen from the attitude of the Papuan people who state that chewing areca nut tastes good, makes you happy, makes you feel confident and the longer you chew, the better it is. Attitude is a simple expression given by someone to like or dislike a certain object [13].

The chewing activity is carried out by adding lime betel which makes the saliva red. The habit of chewing areca nut affects chewing health and environmental cleanliness. This can be explained by the fact that the Papuan people's habit of chewing areca nut almost all the time accompanied by lime and betel and over a long period of time can cause mouth infections but has a good effect on overcoming bad breath. Oral infections are understood by the Papuan people to cause dental caries. This happens because of the habit of not continuing to brush your teeth after chewing areca nut, which triggers tooth decay. Unbanu D.K et al., [14] stated that the habit of chewing areca nut without brushing your teeth can cause dental caries. Tooth decay is also caused by the alkaloid content in areca nut and whitening which creates a wet atmosphere resulting in thickening of the gums and buildup of tartar.

The response to chewing as a reason to overcome bad breath originates from people's belief and experience that chewing areca nut will relieve toothache, teeth will become strong and the mouth will not smell. Holle [8] suggests that attitudes are formed from past experiences and beliefs that arise from various experiences throughout life. This public belief is related to the compound in areca nuts in the form of arecaldine which is an astringent, then the hemostatic compound from tannin which is beneficial for the gums and provides a fresh mouth aroma [15]. People have beliefs and experiences about the benefits of areca nut, so they sometimes forget about brushing their teeth after chewing areca nut. The condition of people who pay less attention to dental hygiene is what causes various dental diseases. Diseases that may arise include black teeth, tartar buildup and can even cause more serious diseases. Arisjulyanto et al., [11] stated that the Papuan people believe that chewing areca nut will ensure healthy teeth and mouth and subsequently forget about having to brush their teeth, which can cause various oral and dental diseases.

The response to the attitude of chewing areca nut has a positive influence on the attitude of maintaining environmental cleanliness. Papuan people always chew their food with betel lime, where the combination of areca nut, lime and betel leaves will create red saliva. People's habit of throwing betel nut saliva anywhere, such as on walls, walls, gutters or floors, creates a dirty environment. The community is of the view that specifically in public locations such as churches, offices, schools, special containers need to be provided to collect areca nut saliva and areca pulp so that the environment can be clean. The continued attitude of agreeing that in public locations such as churches, offices and schools, special containers or places for spit and areca nut dregs must be provided must be in line with the real behavior of the community to dispose of spit and dregs in the places provided. However, the reality is that the attitude response of agreeing to the availability of containers for storing areca nut saliva and dregs is not followed by the actual behavior of throwing away the areca nut saliva and dregs in the available containers. The impact of disposing of saliva and betel dregs not in an available container results in areca nut stains on building walls, gutters and fence walls.

Another thing is also stated that when chewing areca nut a person is not permitted to communicate verbally with other people. This situation is because communicating while chewing areca nut is not polite. The Papuan people's habit of chewing betel nuts is always in a crowd or in certain groups where talking or discussion activities are sometimes carried out. This communication activity is considered impolite when in the process of chewing.

3.6 The relationship between chewing health attitudes and environmental cleanliness attitudes due to chewing areca nuts

Attitudes about chewing health influence attitudes towards maintaining environmental cleanliness. This can be explained by the fact that, if a person does not pay attention to the health of his mouth when chewing areca nut, it will cause disease in the mouth, and then if he spits anywhere, he can spread infectious diseases through saliva. Ismawati, [7] stated that saliva production from the activity of chewing areca nut can release toxic substances. Therefore, it is recommended that in public locations such as schools, offices, places of worship, special containers are provided to accommodate betel nut spit and also when talking the person does not communicate.

4 Conclusion

The results of the research conclude that the Papuan people agree that the activity of chewing areca nut creates self-confidence, feelings of joy and creates a friendly atmosphere. Papuan people agree that consuming areca nut causes strong teeth and an odorless mouth. The attitude of the Papuan people in maintaining environmental cleanliness is by stating that they do not throw saliva and areca nut dregs anywhere, but this is not followed by any real behavior. There

is a relationship between the influence of chewing attitudes and the health of chewing areca nuts on the attitude of maintaining environmental cleanliness. There needs to be a study of the behavior of Papuan people in consuming areca nut which is linked to the attachment of social and cultural norms and institutions.

Compliance with ethical standards

Acknowledgements

The author would like to express his thanks to the students of the agribusiness study program at the University of Papua who helped with data collection.

Disclosure of conflicts of interest

The authors declare no conflict of interest regarding the publication of this paper.

Statement of informed consent

Informed consent was obtained from all participants included in this study.

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