

# Sumba wisdom in its ecology and semiotic meaning of rebuilding steps of Umbu Ndendo Clan's Traditional House in Wewewa, Sumba Island, Indonesia

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## ABSTRACT

This paper aims to describe Sumba local wisdom in its ecology and semiotic meaning of rebuilding steps of *Umbu Ndendo* Clan's traditional house in Wewewa society. By applying observation and interview, data were gathered. Data collected were identified, classified, and then analyzed qualitatively. Based on the analysis, it was found out that Sumba wisdom in its ecology of building traditional house were specified in the consistency of choosing and using natural materials taken from forests and home garden. They could identify and differentiate various kinds of natural resources. The main house's construction such as floor, wall, roofing were used natural resources, like wood, bamboo, string, coarse grass, palm tree. The four main big posts made of specific wood, and so were the king post, trusses, etc. By using their local wisdom knowledge, they could also build traditional house that could be sustained for years. It was also found out that before the house was built people conducted four times of ritual called *Zaiso*. This ritual aimed to ask their ancestor which forest was proposed and what kinds of natural resources were going to be used. This fact implied that people still believed *Marapu* as their religion. Therefore, there were nine steps to be followed in rebuilding the traditional house, such as (1) *ratanakallerre-tongnguparii* 'take cordage-pullposts', (2) *patomandibarrainabarraama* 'bring the materials from forest to mother and father (ancestor)', (3) *pariwo wi-kalapawi* 'clean those materials using coconut milk', (4) *kondawelli-konda parii* 'dig hole', (5) *pandendeparii-botipatenga* 'setposts', etc. All these steps used parallelism and they had metaphorical and semiotic meaning, such as the four big posts represented sub group of people from this clan. Two doors set in front of the right side represented guest and the left hand side represented the host, etc. The house did not have windows. It could be concluded that Sumba local wisdom in its ecology of building traditional house was influenced by their cultures; and the semiotic meaning was influenced by both culture and belief of *Marapu*.

**Key words:** Ecology, Rebuilding steps, Traditional house, Semiotic meaning, Sumba wisdom

## Introduction

Building a house for living in, needs a good plan that relates to its location, position, size, and materials being used. This case is the same as building a traditional clan house in Wewewa, Sumba island, Indonesia. People in Sumba applied their own local ecology wisdom to plan and manage their natural

resources as what mentioned by Berkes *et al.*, (2000) in Balleste *et al.*, (2006) that traditional strategies in the management of natural resources were based on the local knowledge about biological system. It means that local wisdom or knowledge was important in order to manage their own natural resources.

Referring to the natural resources used in rebuilding a traditional house, ecology has important

role since all natural materials needed were taken from the forest and home garden. Local knowledge of the people was important because they should choose specific natural materials suggested. Besides, builders should have local knowledge how to build a traditional house that could be sustained for years. In traditional housing, the intended climate and environment solutions within sustainable design had already been achieved by local implementation (Akyurek and Hizh, 2016). It means that climate also be considered in building traditional house.

There were many studies relating to ecology especially ecology of language, such as Sapier in Fill and Muhlhausler (2001:13-23), Steiner in Fill and Muhlhausler (2001:24-30), Muhlhausler (2001:31-40), Haugen in Fill and Muhlhausler (2001:57-65), Mackey in Fill and Muhlhausler (2001:67-73), Penman (1994), Glausiusz (1997), etc. Those studies discussed how ecology was important in language. Environment and language were related and supported to each other.

Based on to the researcher's preliminary study in Mach 2018 in which she observed people in Wewewa society, South West Sumba district built a clan traditional house, she thought that this culture was interesting to be studied from the view of its ecology and semiotic meaning. Besides it was interesting from the view of semiotic meaning and its ecology, this study could be as one strategy to sustain its culture including natural resources. It was realized by the researcher that new generation who was in 4.0 era would not understand anymore how a traditional house be built. Vocabulary used related to environment would no longer be used by 4.0 generation. Therefore, this study could be a reference for new generation to realize that building a modern house was not the same as building a traditional house. Thus, linguistically, all words, phrases, sentences using local languages would be sustained.

Sumba island recently has become well known as beautiful panorama and those panorama are still nature. One interesting thing is its traditional houses. Generally, all traditional houses uses natural resources that are taken from forest and home garden. There are no traditional houses were built using modern materials, such as cement, ceramic, zinc, etc. On the other side, it is realized that all natural resources were difficult to be found because of ecosystem changing. For example, materials for roofing that use coarse grass or *alang-alang* was difficult to be found out.

Beside Sumba wisdom in its ecology of rebuilding traditional house, semiotic meaning of the traditional house was important to be studied since the house had some signs that exactly had meaning based on its cultures. For example, style of a clan traditional's house had unique variety that was associated with a specific cultures of a clan. Thus, in order to understand it completely, the meaning of the language including cultural meaning was important to be studied. "Meaning change often comes through the extension in the denotative scope of a lexicon item on either a literal and a metaphorical basis...." (Allan 1986). It means that language be understood not just from lexicon or literal meaning but from its context or metaphorical meaning including semiotic meaning.

Sumba island as one island in East Nusa Tenggara Province has its own cultures that was different from other islands. One specific cultures that makes it different from other was the steps of building a traditional clan house and some ritual conducted. The style and form of a traditional house in Sumba island has its own style, signs and meaning in which from the view of linguistic according to Saussure in Hodge and Kress (1988), Halliday (1989), and Pierce 1839-1914 in Hodge and Kress (1988), it was known as semiotic or semiosis. Saussure proposed dualistic notion of signs, relating to the signifier as the form of the word or phrase uttered, and to the signified as the mental concept. Semiosis as an irreducibly triadic process, namely an object, a sign and an interpretation or interpretant. Pierce in Hodge and Kress (1988) classified signs into three major types: icons (based on identity or likeness: e.g. road sign), index (based on contiguity or causality: e.g. smoke as a sign of fire) and symbol (a merely conventional link, as in Saussure's 'arbitrary' sign). While social semiotics expands the interpretable semiotic landscape to include all cultures codes (Halliday, 1989).

Concerning to steps of rebuilding a traditional clan house happened in Wewewa society, a society living in South West Sumba district, needs a long process to state which materials being used, such as for its roof, its posts, its string, etc. Those kinds of materials were in a forest and the forest should also be stated by following a traditional ritual called *zaiso*. *Zaiso* was a kind of ritual followed by wewewa society who still believe *Marapu*. In this ritual they asked an agreement from their ancestor relating to a rebuilding process a traditional clan

house including kinds of natural materials would be used, places of forest to take all natural materials needed, time to take all the materials and time to rebuild the traditional clan house. therefore, all the process of taking materials from a forest, time to take all materials and time to bring all materials to a village in which the house be built were suggested by their ancesstor through a ritual called *zaiso*, akind of ritual for people who believe *Marapu*. This ritual was conducted by mediators.

Based on those explanation, this recent study focused on local wisdom in ecology and semiotic meaning of rebuilding steps of traditional house. It discussed some semiotic meaning of the steps and then it followed by a view relating to ecological linguistic.

## Methodology

This study was descriptive qualitative. Data informing this study were gathered from observation and interview as proposed by Marshall and Rossman (1995); Bogdan and Biklen (1982). Observation was done in Sumba island especially in South West Sumba District in a village called *Puu Naga*. It was used to collect data relating to the structures of the house, natural materials used and its signs. Interview was used to collect data relating steps followed in building a traditional house and data relating to semiotic meaning. Therefore, by applying purposive sampling strategy there were only four men as informans be interviewed. Those informants were took part in the process of building and really understood the language and its ecology and cultures including process of building traditional house. All data garthered were identified, classified, and then analyzed qualitatively by focusing its local ecology wisdom and the signified (mental concept/content) and signifier (mental image/expression) of the signs as proposed in semiotic system.

## Result and Discussion

### Ecological wisdom of rebuilding a traditional house

Ecology especially ecological language relates to the linguistic corpus that was about enviroment, culture and human beings. Ecology of language relates to spacial, natural and cultural demention in which language was used. There was a strong tendency to

ascribe many elements of human culture to the influence of the environment (Sapir in Fill and Muhlhausler, 2001). Language ecology may be defined as the study of interaction between any given language and its environment (Haugen in Fill and Muhlhausler, 2001). Thus, it can be stated that culture including language used were influenced by environment.

Concerning to ecolinguistic, it is realized that local wisdom or local knowledge was cultural heritage. This happened to the people in Sumba. This local wisdom was realized in spoken text or signsused in any kind of their discourse. One of these discourse was rebuilding traditional house.

Local wisdom of rebuilding traditional house could be seen from the use of natural resources or materials that were taken from the forest and home garden, such as special trees chosen to be used as posts, specific or varieties cordage to tie. Other natural materials such as palm trees were taken around the garden. They were consistence to use natural resources as mentioned by their ancestors. People who designed and built the house had local knowlege how to build a traditional house. They were not architects but they could build the house. This fact proved that traditional strategies in the management of natural resources were based on the local knowledge about biological system (Berkes *et al.*, 2000 in Balestee *et al.*, 2006), but also respond to historical, economic, social land cultural factor (Caballero 1994; Balee, 1998; Hertog and Wiersum, 2000, Ruiz-Perez *et al.*, 2004 in Balestee *et al.*, 2006). Based on data it was found out that generally the traditional houses could stand for years or period of time, it was around 30 years or more. This fact implies that local wisdom of ecology was important, and therefore it should be sustained.

It was stated that people could differentiate varieties of trees, cordage, bamboo, and other natural materials used. From this fact, the writer could state that this knowledge could be sastained if the traditional houses still use natural resourcesthat can be taken from forests or home garden. So that, forest should also be sastained. The problem faced by all clans in rebuilding traditional houses in Sumba was related to roofing which used coarse grass. This natural resources was difficult to be found. Therefore, some traditional houses in Sumba when it rebuilds nowadays rarely use coarse grass anymore. It has been changed to zinc.

Ecological structure of the house consisted of

roofing made of coarse grass and bamboo or palm trees. Using coarse grass or alang-alang as roofing was good keep warm and cold in both rainy and hot season. It was good insulation against heat and it was nice to look at either from inside or outside. Floor made of bamboo, the two doors made of wood and bamboo. There was no sofa in it except *bale-bale* made of bamboo. If guests comes, they put a plaited mat on *bale-bale*. The house's wall was made of bamboo and the house did not have windows. The two doors were at the front which was set at the right hand side and left hand side. The right hand side door was for the guests and the left hand side was for the host.

### Steps in rebuilding the traditional house

Based on data gathered and data analysis it was found out that there four times of ritual called *zaiso/urata* done in rebuilding a traditional house, namely

- 1) The first *zaiso* (ritual) aimed to ask ancestor relating to place and kinds of materials such as wood, cordage and other materials used. The ancestor answered/ told them through duodenum of chicken. After having this ritual, the ancestor told them which specific wood or posts and cordage that can be used. It was also told which forest to take all the natural materials.
- 2) The second *zaiso* was aimed to tell the ancestor that they would take cordage-pull posts, bring all the materials from the forest to the village in which the house would be built, clean the materials, and dig four holes to set the main posts of the house.
- 3) The third *zaiso* was aimed to tell the ancestor that the four main post would be set '*pandende parii- boti patenga*'. The answer of the ancestor would be seen in the lever of chicken or pig. After setting the four main posts, then it was followed by setting the king post and the tower of the house *boti karambo na -pandede tolaka na*
- 4) The fourth *zaiso* was aimed to ask/ tell the ancestor that all steps relating to setting the four main posts, and others materials had been done. Then they also asked or told for roofing *tau na ngaingo- botingge roo na*.
- 5) The fifth *zaiso* was aimed to tell the ancestor that '*Marapu*' would be stated back in the house because whenever the house was in process of building *Marapu* was stated in a

small place in front of the house and it looked after by a man called *Rato Kabubu*. After rebuilding the house this man had to bring *Marapu* back to the house. Linguistically this event called *papenne bali ndi Marapu*, 'bring back *Marapu* to the house.' It was also called *woleka* 'ceremony'

This event was attended by many people from either *Umbu Ndendo* clan or other clans and it looked like a traditional ceremony. Some pigs and buffalows were killed. People celebrated it because their traditional clan house had been rebuilt again.

Based on the five rituals (*zaiso*) it could be seen that there were nine steps followed in rebuilding the traditional clan house. All these nine steps linguistically used paralelism of Wajiewa language. There were four phases/ paralelisms had metaphorically meaning and the five of them had lexical meaning.

- (1) *ratanakallerre-tongnguna parii'*: take cordage-pullposts, take art. cordage - pull art. post 'take the cordage-pull the posts.'
- (2) *patomandibarraina - patoma ndi barraama*: bring them near mother- bring them near farther 'bring them to the mother and farther' 'bring those materials from forest to mother and farther (ancestor)',

This phrase means that all those materials taken from the forest were bought to the village in which the house would be built.

- (3) *pariwo wi-kalapawi*  
bath them – grease them  
'clean those materials'  
'clean them (the posts)'  
This phrase has metaphorical meaning that the four king post must be polished.
- (4) *kondawelli-konda parii'* dighole- dig posts  
dighole - dig post  
'dig the holes - dig the posts.'
- (5) *pandendeparii-botipatenga'* put posts, stand post put truss 'set posts-set trusses
- (6) *boti karambo na- pandende tolaka na* put buffalow possst and tower poss 'set its king post- set its tower'
- (7) *tauna ngaingo - taunalawurru* put coarse grass – put roof edge  
'put coarse grass – put roof edge'  
'set its roof – set its roof edge.'
- (8) *wokota tolaka na - pandende kadu na*  
cover tower poss - stand horn poss 'cover its tower – set its horn.'
- (9) *pakako kamumbu ngaingonapakako kamumbu*

*wazu na* walk dust coarse grass poss walk dust  
wood poss  
'clean its coarse grass dust – clean its wood  
dust.'

All these paralelisms/phrases hadleccial meanings (as number one, four, five, seven and eight) and metaphorical meaning (as number 2, 3 and 6). The first step as shown in number one *ratanakalerretongnunguna parii'* take the cordage-pullthe posts'. People in this step had to go to a forest that had mentioned by their ancestor to take all materials needed for rebuilding the tradtional house. The people had to choose the specific tree used for posts, cordage and other materials as mentioned by ancestor.They never ignored message from their ancestor. If they did not follow the message they would get trouble.

The second step was *patomandibarraina-patoma ndi barraama'* bring those materials from forest tomother and farther (ancestor). This paralelism had metaphorically meaning that all the materials taken from the forest had to be brought to the vilage in which the house would be built.

The third step was *pariwo wi -kalapawi* 'bath them – grease them' or clean them. This paralelism had metaphorically meaning that the posts taken from the forest and had been brought to the village had to be polished in order to fulfill the criteria or size as posts for traditional house. Each post of the four posts belonged to sub group of family that had been stated by their ancestors.

The fourth step was *kondawelli-konda parii'* digholes - dig posts. This step had meaning that people dug holes for the four posts. Every sub group of family had responsibility to dig a hole for their own post as what had been done at the step three.

The fifth step was *pandendeparii - botipatenga'* setposts – settrusses. This step was the step in which the four post be set. After the four postsbe set, then trussesbe set. People had responsibility for setting the trusseses . In other words that all people (men) worked together to set trusses.

The sixth step was *boti karambo na - pandende tolaka na* 'set its king post. – set its tower'. The lexical word of *karambo*is buffalow. This word had metaphorically meaning as king post . This step was step in which the king post and the tower of the house wasset.

After the sixth step was completely done, then the seventh step was *tauna ngaingo - tauna lawurru*

'put coarse grass – cover roof edge.'This step was the step of roofing. The roof used was made of coarse grass. Since course grass was difficult to be found, it replaced with zinc. The replacement of course grass to zinc had previously asked and agreed by their ancestor.

The eight step was *wokota tolaka na - pandende kadu na'*cover its tower – set its horn.' This step was a step which people covered its tower and set its horns. There were two horns put at the top left and right hand side of the house. Having finished covering its tower and seting it horns, then nine step was done.This step was *pakako kamumbu ngaingo na - pakako kamumbu wazu na* ' clean its coarse grass dust - clean its wood dust.'The meaning of the step was that people realized their weaknesses or faulty during the process of building the house. They realized that it might be something wrong done during the process of building, such as the position of any materials used, put or set. Therefore, by following this step they hoped that they could be aplogized by their ancestors. In other words, if there were something wrong during the process of building the house they hoped that their ancestor could aplogized them.

Other important thing found was a man called *ratokabubu* who just sit/sleep at home without doing anything when the house was building. He was not allowed to go around the house. If he went around, something bad could be happened. Those facts indicated that some people from this clan still believed their own religion, *Marapu* and they were influenced by their culture and religion, *Marapu*.

### 3. Semiotic meaning analysisof the traditional house

Based on the data gathered from observation it can be seen that herewere manysigns used at the traditional house. Those signs represented or had signifiant and signifie as mentioned in analysing semiotic system (Saussure, Pierce in Hodge and Kress, 1988; Halliday, 1985). All these signs are described as follows.

#### Signifiant and signifie of main posts

The four main posts showing semiotic meaning. The front right side post called *parii bali kawana aro umma* (signifiant) represented the son*paana mane'* (signifiant); the front left side post called *parii bali wello aro umma* (signifiant) represented *pawasse* 'the son's wife' (signifie); the back right side *parii bali*

*kawana* (signifiant) represented *paama* 'the farther' (signifie), and the back left side *parii kere padalu bali wello* (signifiant) represent *paina* 'the mother' (signifie). This fact implied that the house belongs to all families that have the same clan, called *Umbu Ndendo clan*. Therefore, when the house was going to be built, each family/the family who had been included based on posts mentioned had responsibility to find the post in forest mentioned by ancestor, bring it at the village and fix it as one of the main posts at its position. It also the same as other posts. This fact implied that all people from this clan should help and work together in order to be rebuilt. So before rebuilding the house all people who belonged to this clan should discussed and planned together relating to exact the time for rebuilding the house. They discussed the time to start the first process up to the end.

It was also found out that the four main posts have signifiant like plates and bowl *skobba lillo-engnga ngaa'* mangkuk sayur – piring makan' that consisted of 14. This bowls and plates had signifie, meals and water. There was also *lambe* like a big ring that consists of four rings at the top of each post. They had signifies as a way for the only son *ana mane kanuwa* to go down. *Ana mane kanuwa* (signifiant) represented their God (signifie).

This fact implies that environmental structure relates to built form, as well as physical form and culture. This fact supports to Fawett, all (1984) who stated that the study of environment structure had as its focus the underlying properties of built forms.

### Signifiant and signifie of roof

The roof of the traditional house consisted of four sides. The front roof side called *api kalada aro umma* (signifiant) represented guest (signifie), the back roof also called *api kalada bali umma* (signifiant) represented host (signifie). There other two sides of roof were right and left hand side. These roofs were called *api kii na umma* (signifiant) represented others family (signifie). The right side roof called *appi kii bali kawana* (signifiant) and the left side called *api kii bali wello* presented other family who had moved to other clan because of marriage (signifie).

### Signifiant and signifie of doors

The traditional house had two doors *binna* only, right hand-side and left-hand side doors. They were both at the front side. The right hand-side called *binna bali tonga* (signifiant) was for the guest

(signifie) whereas the left hand-side called *binna kere pandalu* (signifiant) was for the host (signifie). The house did not have windows except the two doors.

### Conclusion

Rebuilding traditional houses in Sumba island needs local knowledge since there were many factors to be considered. Ecological view of rebuilding a traditional house especially to ecological of language were important since it considered local knowledge to state natural materials used and also to set or build the house. It was influenced by its cultures or its context. This related to Berkes et.al. in Balestee et al., (2006)'s statement that traditional strategies in the management of natural resources were based on the local knowledge about biological system, and also to respond to historical, economic, social land cultural factor (Caballero, 1994, Balee 1998, Hertog and Wiersum, 2000; Ruiz-Perez et al., 2004 in Balestee et al., 2006). Moreover, generally language used in society were influenced also by context of culture and ideology (Ngongo, 2013).

Therefore, ecological knowledge played important roles in rebuilding traditional houses. Language is, the first instance, a resource for making meaning (Halliday and Matthiessen, 2014). The people in Wewewa society just used natural resources taken from the forests suggested by their ancestor through their rituals. The main structures of the house consisted of floor, wall, roofing which used natural resources. In this recent study, roofing was replaced by using zink since natural materials of coarse grass was difficult to be found.

Concerning to the semiotic meaning, it can be seen that there were some rituals conducted from the preparation up to the finishing steps. It was found out that there were nine steps followed during the process of rebuilding the traditional house: (1) *ratanakalerre-tongnguna parii'* takethecordage - pullthe posts.' (2) *patomandibarraina - patoma ndi barraama'* bring those materials from forest to mother and farther (ancestor)', (3) *pariwo wi - kalapawi'* clean them (the posts)', (4) *kondawelli- konda parii'* digthe holes - dig the posts.', (5) *pandendeparii - botipatenga'* setposts – set trusses, (6) *boti karambo na - pandende tolaka na* 'set its king post - set its tower', (7) *tauna ngaingo -tauna lawurru* 'set its roof – set its roof edge.', (8) *wokota tolaka na - pandende kadu na'* cover its tower – set its horn.' and (9) *pakako kamumbu ngaingo na - pakako kamumbu wazu na* '

clean its coarse grass dust – clean its wood dust’. All those steps linguistically used paralelism and had lexical and metaphorical meaning. This fact implied that message delivered should be really understood either lexically and metaphorically. Understanding metaphor was not only understood from its linguistic phenomenon but also it needs cognitive competence since this phenomenon covers human’s process of thingking completely to catch a meaning behind a word, phrase or sentence be listened or read in a certain text or situation (Ngongo 2016:134). The house had signs: signifier and signified. Semiotically, those signs showed the cultures and their believe of God called *Marapu*.

It was realized that this study was limited and need more research about it, therefore other reserachers could study it on other view of the traditional house such as its context of culture, ideology, etc. Every place has its own cultures that can be interpreted from its structure of life such as houses, languages, believes, etc. These are important to be studied in order to sustain and broader local wisdom and then it can be applied to accept, understand and appreciate others people from different cultures and places.

## References

- Allan, K. 1986. *Linguistic Meaning*. Volume 1. Monash University. Routledge & Kegan Paul: London and New York
- Akyurek, B.K. and Hizh, N. 2016. Learning from Vernacular Architecture: Ecological Solutions in Traditional Erzurum Houses. Article (pdf) in *Procedia Social and Behavioral Sciences* <https://www.researchgate.net>>publication cited on June 5, 2019
- Balleste, A.M., Martorell, C. and Caballero, J. 2006. Cultural or Ecological Sustainability? The effect of Cultural change on Sabal Palm Management Among the Lowland Maya of Mexico. *Ecology and Society*. 11 (2):27 <https://www.ecologyandsociety.org> > art27 pdf. cited on June 5, 2019
- Bogdan, R.C. and Biklen, S.K. 1982. *Qualitative Research for Education: An Intoduction to Theory and Methods*. Allyn and Bacon, Inc. Boston London
- Brown, G. and Yule, G. 1983. *Discourse Analysis*. Cambridge University. London: Press Cambrige,
- David, R. 2006. A Systemic Functional approach to Language Evolution. *Cambridge Anthropology Journal* 16:1, 73-96 Koori Centre University of Sydney NSW: Australia
- Fill, A. and Muhlhausier, P. 2001. *The ecolinguistics reader. Language, Ecology and Environment*. Continuum. London and New York
- Fawett, R., Halliday, M.A.K., Lamb, M.S. and Makkai, A. 1984. *The Semiotic of Culture and Language*. London: Trances Pinter Publisher.
- Glausiusz, J. 1997. *The Ecology of Language*. Link between Rainfall and Language Diversity. Discover p.30
- Halliday, M.A.K. and Hassan, R. 1989. *Language Context And Text: Aspect of Language in a Social Semiotic Perspective*. Deakin University Australia
- Halliday, M.A.K. and Matthiensen, M.I.M.C. 2014. *Halliday's Introduction to Functional Grammar*. Oxford University Press: Inc. New York
- Haugen, E. 1972. *Ecology of Language*. Stanford: Stanford University Press
- Hodge, R. and Kress, G. 1988. *Social Semiotic*. Polity Press. Great Britain
- Marshall, C. and Rossman, B.G. 1995. *Designing Qualitative Research*. Second Edition. SAGE Publications. International Educational and Professional Publisher. Thousand Oaks London
- Ngongo, M. 2013. Teks Kette Katonga Weri Kawendo pada Masyarakat Adat Wewewa di Pulau Sumba: Analisis Linguistik Sistemik Fungsional.” (*Disertasi*) Denpasar: Universitas Udayana
- Ngongo, M. 2016. Systemic Analysis of Grammatical Metaphor in Text of Waijewa Language. *International Refereed Journal. Researchers world, Journal of Arts, Science and Commerce*. 7(4) : October 2016. E- ISSN 2229-4686, E-ISSN 2231-4172
- Penman, R. 1994. Environmental Matters and Communication Challenges. *Australian Journal of Communication*. Pp 26-39.