ABSTRACT

Along with the rapid development of the times, research methods are also increasingly varied, and it feels increasingly easy to find methods that match the research to be planned. This includes research that can be done by a brand in studying the market and consumer behavior. How can a brand communicate products so that consumers are interested and make decisions to buy the product either impulsively or not. To communicate products directly, brands often use stimulus by utilizing the human senses. However, qualitative methods are considered inappropriate in studying the influence of stimulus on consumer decisions. Researchers cannot articulate the unconscious impression of the results of decisions on the influence of stimulus through the human senses.

With neuromarketing studies, consumer behavior towards marketing can be learned by utilizing neuroscience. Measurements of the human brain's response in this study were made using electroencephalograph (EEG) signals. These EEG signals will later be triggered by olfactory stimulus, which is a receptor cell in the human brain for the sense of smell. Thus, the results of a person's decision making can be analyzed through the pattern of the respondent's brain signals to an object (product) affected by the stimulus.

The result of data acquisition that is obtained from 10 respondents, is processed through the pre-processing stage with butterworth bandpass filter order 5 and cut-off frequency of 13 Hz - 30 Hz. Then the signal is extracted using statistical methods so that the character of the feature is obtained in the form of mean, energy, entropy, kurtosis and deviation standards. Data classified with support vector machine (SVM) linear until obtained the highest accuracy of 0.62 with a combination of features consisting of energy, entropy, kurtosis and deviation standards that will be used as parameters to determine signal character patterns.

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Keywords: *electroencephalograph (EEG), neuromarketing, decision making, support vector machine (SVM).*