RELATIONSHIPS ANALYSIS AND PUBLIC PERCEPTION OF THE HEALTHY PLASTIC AS ONE SOLUTION TO HEALTHY LIVING

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Abstract. Direct Plastics are used for various human purposes, ranging from household to industry. Tableware and drink made of plastic is very practical to use, easy to clean, durable and cost far less than tableware made of the other material. However, must also be considered in terms of security in the use of plastic containers for food storage because there are adverse effects. There are seven types of plastic based material used, namely Polyethylene, Terephthalate, High Density Polyethylene, Polyvinyl Chloride or V/PVC, Low Density Polyethylene or LDPE, Polypropylene, Polystyrene, Plastics others including polycarbonate. Experts claims that the plastic code numbers 2, 4 and 5 are used for equipment safely eat/drink because it is more stable and safe if used correctly. In this study will analyze the relationship between the recent education, family income to perception and behavior in the use of plastics in food storage daily as one solution to healthy living. The population of this research is all the people in the Solo area particularly housewife and all the people in the productive age. Data were obtained through a survey with cluster random sampling method. Statistical method used is a parametric method and Chi Square test This method is used as an alternative method of parametric when some assumptions are not met. Based on the results of Chi Square test with \( \alpha = 15\% \) was concluded that recent education and income related to the behavior of people using plastic products as one of the solutions to Healthy Living.

1. Introduction

Plastic polymer has been largely superseded manufacturing of home appliances stairs of metal, wood or ceramics into devices using plastic materials. One is a plastic bottle of drinking water. The nature of plastic does not rust, inexpensive, lightweight and unbreakable, economical advantages for the user. But behind these advantages, there is a danger that if the use of plastic bottles do not follow the rules set by the Ministry of Health and WHO.

In recent years, appeared their variety of new diseases caused by unhealthy lifestyles, particularly in terms of healthy food. One of the factors that affect food plastic containers we use. We must be selective in using food storage containers, because there are chemicals that trigger the disease. Safe

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plastic with a specific code, between 2.4 and 5. The public generally, is not too concerned about the quality of the code and plastic to health and a healthy lifestyle[1].

According Kertajaya (2002), now all consumer hearts determine consumer choice always purchase long-term considerations with more conscious and aware well as health[2]. One thing known brands society is tupperware, tupperware where is the famous name on a brand of housewares made of plastic. From Tupperware products include storage containers, container presentation and some equipment. Tupperware introduced the first time sales manager for public review in 1948 by Earl Tupper (1907-1983) in leominster, massachusetts. Tupperware pioneered the direct marketing strategy made famous by the Tupperware party [3].

Competition household plastic products lately very tight and many new emerging brands that each race shows the benefits of its products each well in terms of form, colour and durability. Based on this it will be analyzed in this study about how important the community aware of the importance of healthy plastic.

2. Experimental
The research method was conducted using cluster sampling random sampling the population of all users of plastic Solo with Total sample 55 respondents where the sampling method used was cluster random sampling method [4]. The analytical method used is descriptive analysis in order to know the characteristics respondents and also The Chi Square test to get the relationship between education and knowledge about the safety of plastic.

3. Result and Discussion
3.1 Public Attitudes toward Plastics products
The results showed that the communities are still not aware of the importance of the code on food storage equipment. It may be seen from the percentage of people who see the plastic code. Based on table 1, from the total of 55 respondents, some 14.5% stated that they sometimes see the code, some 34.5% said always see the code, 18.2% have never seen the code, and 32.7% often see the code when purchasing plastic products [5].

| Item                          | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------------------|-----------|---------|---------------|--------------------|
| do not care the code          | 10        | 18.2    | 18.2          | 18.2               |
| Some consider the code        | 8         | 14.5    | 14.5          | 32.7               |
| often consider the code       | 18        | 32.7    | 32.7          | 65.5               |
| always consider the code      | 19        | 34.5    | 34.5          | 100                |
| Total                         | 55        | 100     | 100           |                    |
While based respondents (sampling), the distribution of educational level is relatively fairly even start secondary school level to college. the majority of respondents educated PT / S2 states sometimes look at the code, which is about 53.25% said always see the code while it contained 46.75% of respondents said often pay attention to the code. respondents who educated PT states sometimes look at the code, which is about 4.76% do not and sometimes look at the code, and 52.38% said often look at the code and 38.10% always look at the code. Respondents who had high school education, some 25% said never see the code, 50% said sometimes see the code, 8.33% stated often look at the code and 16.67% of respondents said always see the code in buying plastic storage equipment. While respondents junior high school education, some 75% said never noticed codes and 25% said sometimes see code.

From this discussion it can be seen that in junior and senior secondary education mostly less attention to the plastic codes they buy. In addition, the lower the level of behavior viewed codes plastics are increasingly less attention. This is evidenced by the percentage of respondents who have never seen the code is in junior high school education (see Figure 1).

**Figure 1.** Education to consider the behavior of the code
Of the total 55 respondents, some 35.4% said that buying a plastic container according to the budget is not concerned about security of plastic and 63.6% very concerned about the safety of plastic. To buy plastic containers, the education level of respondents, showed that the level of school are junior high school education, secondary high school and college attention is still less attention to product safety, while the post graduates are very concerned about this that is equal to 75%

3.2 Analisis Chi Square
Hypothesis:
$H_0$: education and social behavior are independent (not related)
$H_1$: education and social behavior are not independent (related)
Based on analysis of the relationship with Chi square analysis with $\alpha = 5\%$ was found that education has to do with the behavior of people in view of the plastic code in any purchase or use plastic products. It is seen that the correlation values obtained spaerman sig = 0.734 and 0.00[6].

| Variable                              | Correlation value (spearman) | Sig Value | Conclusion      |
|---------------------------------------|-------------------------------|-----------|-----------------|
| Educational and behavioral see the code | 0.734                         | 0.00      | $H_0$ rejected  |
| Education and safe behavior of buying plastic | 0.733                         | 0.00      | $H_0$ rejected  |

Figure 2. Education on safe usage behavior of plastic

Table 2. Analyze data for education versus code and safe plastics
Hypothesis:
$H_0$: education and safe behavior of buying plastic are independent (not related)
$H_1$: education and behavior of buying plastic are not independent (related)

Based on analysis of the relationship with Chi square analysis with $\alpha = 5\%$ was found that education is related to the behavior of people in buying or using plastic products safely. It is seen that the correlation values obtained spaerman - sig = 0.733 and 0.00.

4. Conclusion
In general, there are still many people who are less attentive behavior on codes of plastic products and their use. Beside it, last education related to behavior using coded plastic products and plastic are also safe.

References
[1] Direktorat Pengawasan Produk dan Bahan Berbahaya Badan Pengawas Obat dan Makanan RI . 2008. Materi Talkshow di RRI tentang Kemasan Pangan. Jakarta.
[2] Kertajaya, Hermawan 2002 Marketing Plus 2000 Jakarta Gramedia.
[3] Patterson Paul G and Johnson Lester W 1997 Spreng Richard A modeling the determinants of customer satisfaction for business to business professional services. AcadMark Sci 25(1) 4-17.
[4] Sugiyono 2007 Metode Penelitian Kuantitatif Kualitatif Alfabeta Bandung.
[5] Ghozali, Imam. 2011 Aplikasi Analisis Multivariate dengan Program IBM SPSS 19 Semarang Badan Penerbit Universitas Diponegoro.
[6] Hayter, Anthony 2007 Probability and Statistics for Engineers and Scientists (3rd ed.) Victoria Australia: Thomson Brooks/Cole.