Cumulus Data: The Truth of Shopping?

Project:463

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Predominantly in Western countries, increasingly more people are suffering from obesity and other secondary diseases related to diet. In addition to the numerous health problems and the people suffering from them, there are also very high costs for the society. This thesis will investigate the shopping and nutritional behavior of normal and overweight people and will analyze the differences between these two groups.

Direct methods to collect nutrition behavior data are time-consuming and costly, and may experience participant biases during data collection, such as a modification in their eating behavior or misreporting of their consumption (under-/overeating and under-/overreporting, respectively). The goal of this thesis is to use Cumulus data from Migros to avoid these biases and to investigate the extent of these biases in comparison to a food frequency questionnaire. The advantage of using Cumulus data is that participants cannot be influenced since the data was collected before the participants knew they would take part in the study.

A total of 34 participants were analyzed. In the first step, the correlation between the body mass index (BMI) and the consumption volume was investigated. There were some relevant differences between the two methods that always had the same direction. For example, soft drinks had a negative correlation (the higher the BMI, the less soft drinks) in the food frequency questionnaire data, but had a positive correlation (the higher the BMI, the more soft drinks) in the Cumulus data. Such a pattern was also found for milk and dairy drinks, salads and raw vegetables, semi-hard and hard cheese, fish, and sweet bakery products. It is significant to note that the pattern was observed with both healthy and unhealthy foods.

Comparing aspects of the self-reported (food frequency questionnaire) and calculated (Cumulus data) sample allowed for an examination of underreporting trends. This was the case for "soft drinks", "milk and dairy drinks", "vegetables (prepared warm)", "fruits and berries", "butter and margarine", "semi-hard and hard cheese", "mayonnaise", "chocolate, Nutella and bars", and "sweet bakery products". Overreporting, on the other hand, was observed with "pulses", "potatoes", "crispbread", "sweet corn", "soft cheese", and "poultry".

The applied method to understand the shopping and nutritional behavior of normal and overweight people using Cumulus data generated a number of interesting starting points. As this was a pilot study, however, the results should be interpreted attentively and further elaborated. Advancement of the method will enhance existing data that will incite for more targeted prevention work.