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**How representative are sentiments expressed in the social media for the marketing target audience? A comparison of a web content mining study with an online survey.**

Web content mining, the systematic analysis of social media such as forums or blogs, plays an increasingly important role in online market research. More and more clients are interested in using this approach complementary to "traditional" online research.

A question often posed in relation to web content mining is whether the results of this method are representative for the target audience of the client's product, or whether they mirror the orientation of opinion leaders or other biased sub-groups (e.g. very critical consumers)?

To answer this question empirically, a sentiment analysis for the dieting product 'Weight Watchers' was conducted in which the results of a web content mining study and a 'traditional' online survey were compared. Our hypothesis was that the themes and valence of the product evaluations are biased in the direction towards opinion leaders. In order to identify opinion leaders in the online survey, a scale for measuring this attribute was constructed.

For the web content mining, a combination of quantitative and qualitative approaches was carried out. In the first step, about 10,000 posts from 14 forums were gathered and classified as "positive", "negative" or "neutral" by using a support vector machine (SVM). Samples of positive, negative and neutral posts were then semi-automatically coded by means of a qualitative data analysis.

To compare both methods, the pre-codes of the online survey were used as the references for the coding of the posts. Moreover, new codes were built to cover new themes in the forums.

This procedure identified both the quantitative and qualitative differences between the two methods. Apart from the results of this comparison, the general importance of social media for the buying decision process is discussed on the basis of current market research results. And finally, the advantages and disadvantages of web content mining compared with online surveys are dealt with.

# How representative are sentiments expressed in social media for the marketing target audience?

The comparison of a web content mining study with an online survey.

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# 1. Background, Hypotheses and Operationalisation

## Background

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- Increasing importance of Research 2.0 methods
- Web Content Mining (WCM) as a Research 2.0 method to analyse online media buzz systematically
- Open question: representativeness of online buzz for the marketing target audiences
- Barrier against wider acceptance of WCM



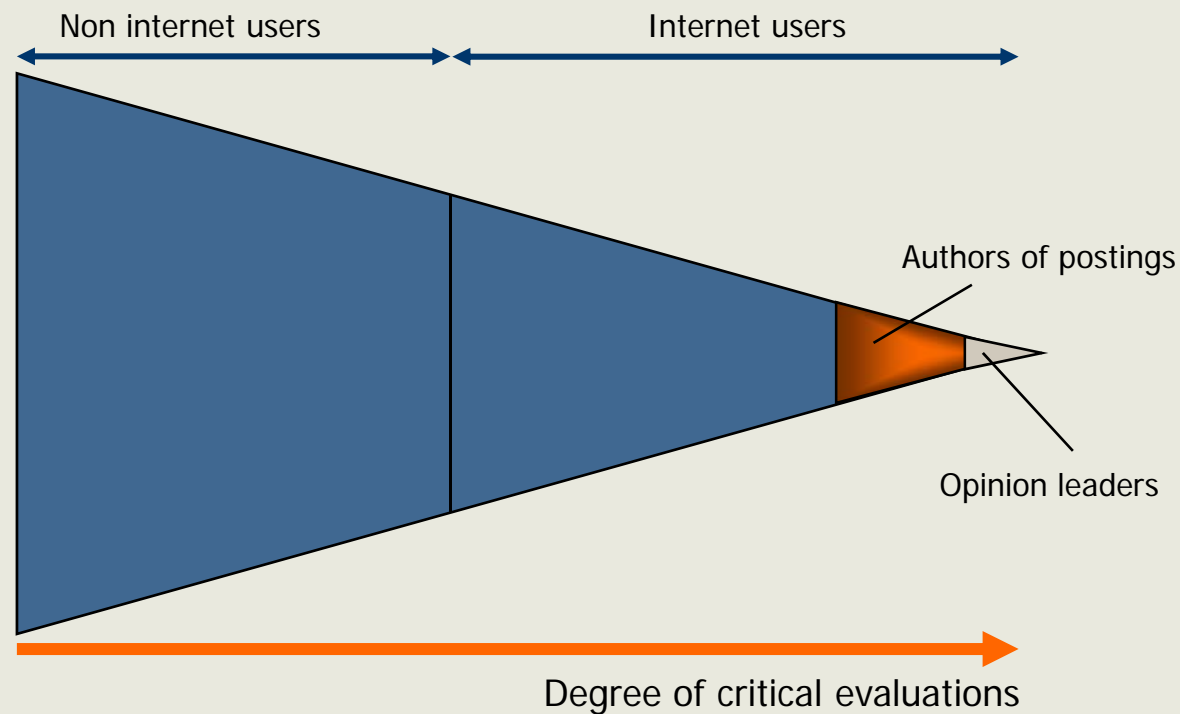
**Implications**

- Comparison of consumer buzz with the results of an online survey to determine differences

# Hypotheses

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- 1) 'Onliners' are more critical than 'offline'.
- 2) Authors of postings are more strongly associated with the group of opinion leaders.
- 3) Opinion leaders should be more critical than other internet users.



## Main hypothesis of the study

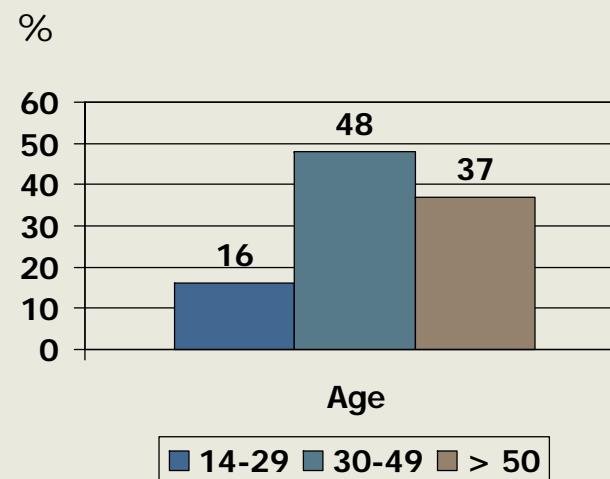
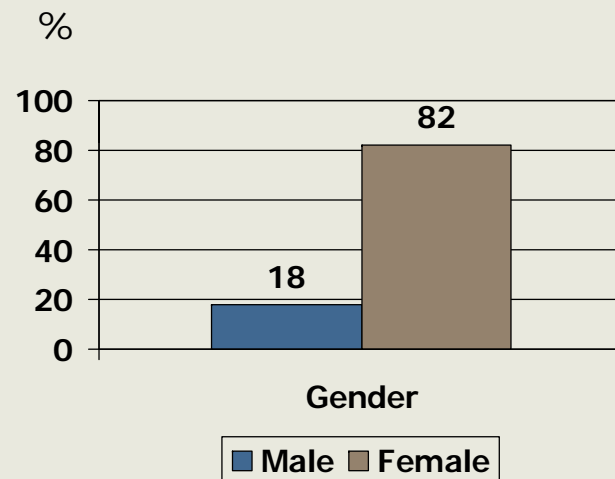
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**The evaluation of brands is more critical on social media platforms than in online surveys.**

## The study: Evaluation of Weight Watchers (diet program)

### Online survey

- 501 users of Weight Watchers in Germany
- 20 minutes



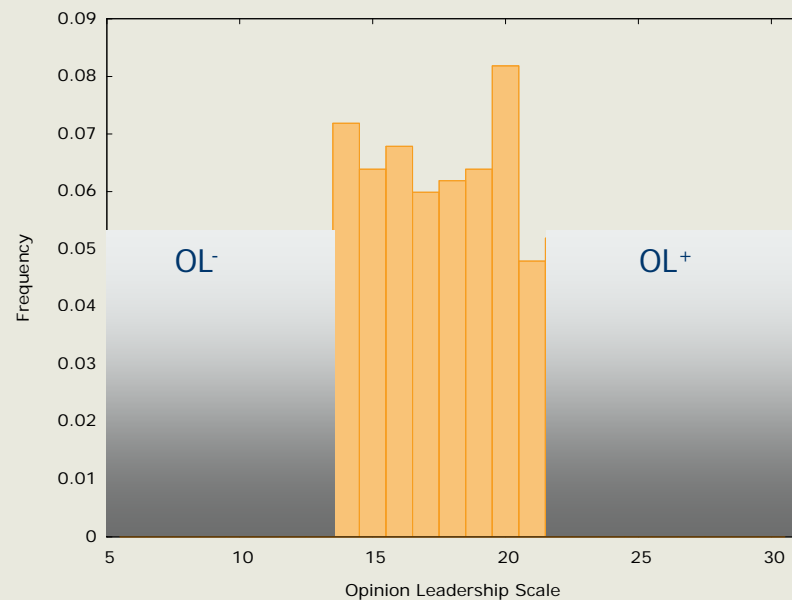
Median = 44 years

**Weight:** median = 90 kg

**Height:** median = 170 cm

## Opinion leadership scale

- Adapted opinion leadership scale by Solomon, Bamossy & Askegaard (2001); monomorphic experts
- Scale of six items which determine the strength of opinion leadership in the domain of weight reduction; Example: *"Do you speak with your friends and neighbours about various methods for reducing weight?"*



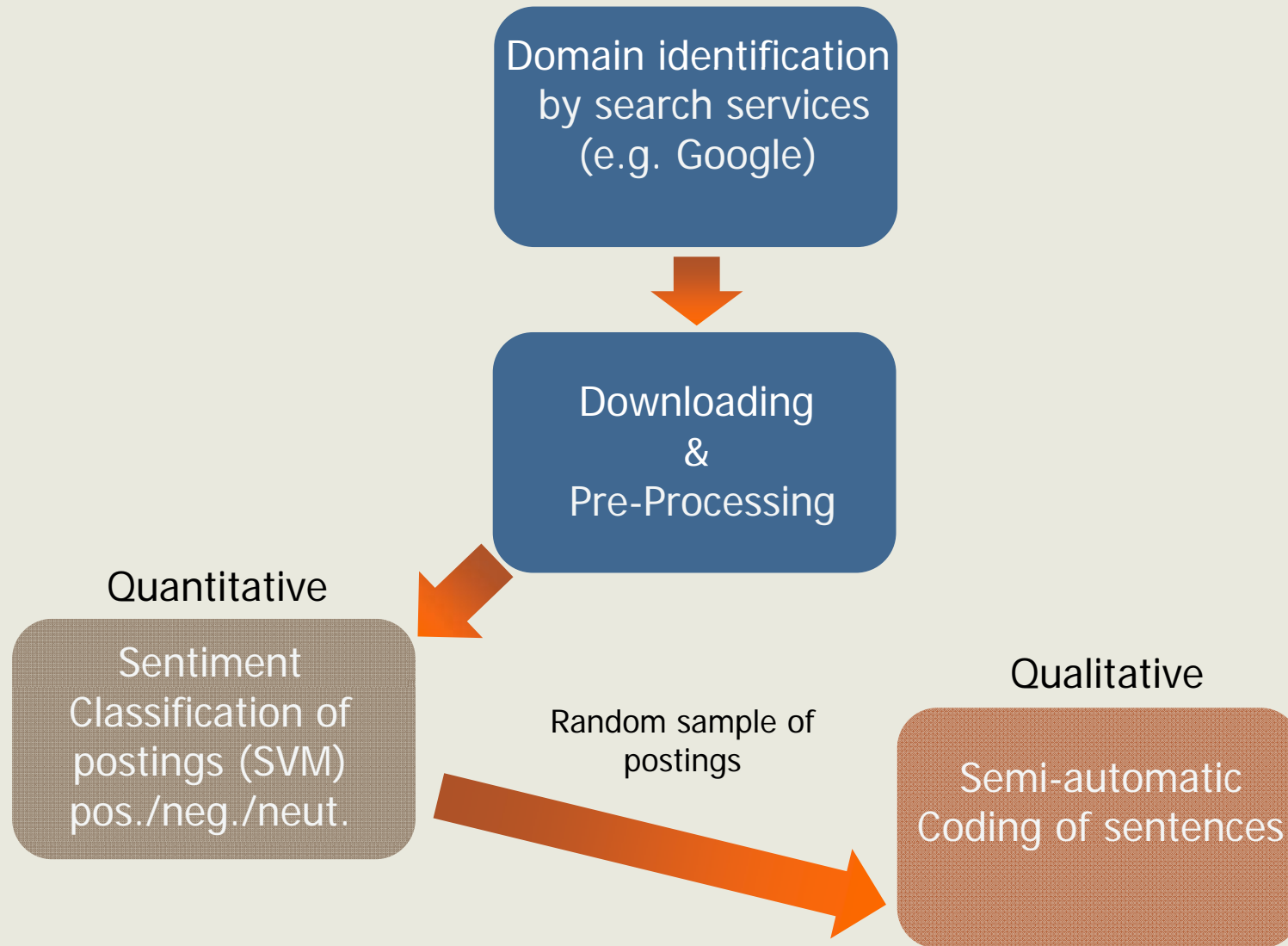
Opinion Leader (high)<sup>+</sup> > 21  
118 respondents

Opinion Leader (low)<sup>-</sup> < 14  
123 respondents

Cronbach's alpha = 0.89

## Procedure of the web mining project for Weight Watchers

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# The study: Evaluation of Weight Watchers (diet program)

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## Web Content Mining

- 10,636 postings
- The top ten social media with the highest frequency of postings were:

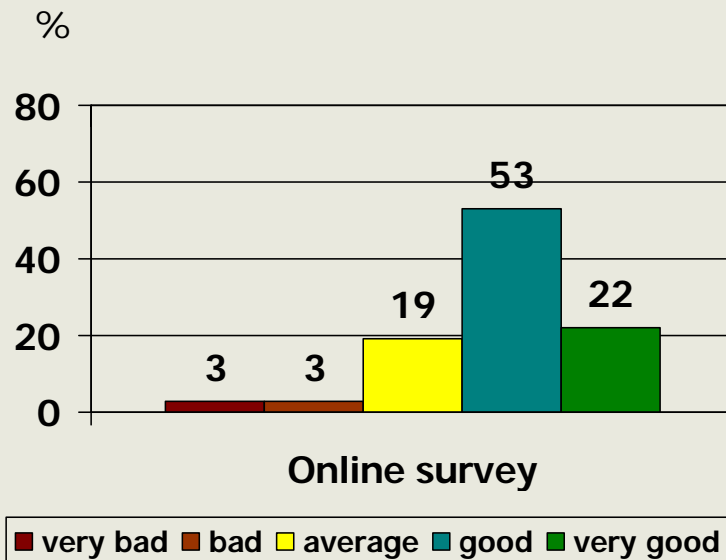
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kiloweg.de\weight-watchers	823
pfundsweib.de	754
duelle-sport-und-quasseltreffs	725
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turkish-talk.com	299
essen-und-trinken.de	205
naehrwerte-und-sonstiges	117



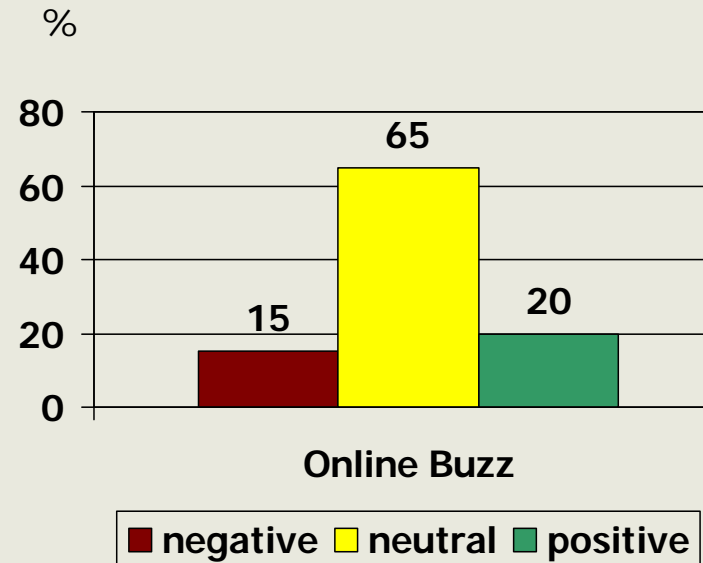
# 2. Main Results

The overall evaluation of Weight Watchers is more positive in the online survey **Confirmation of the main hypothesis**

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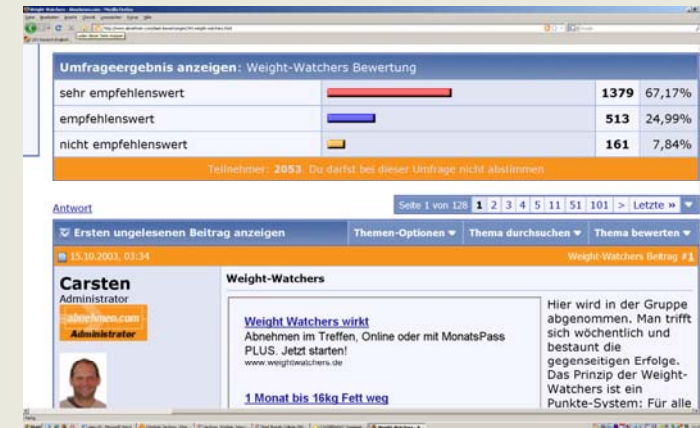
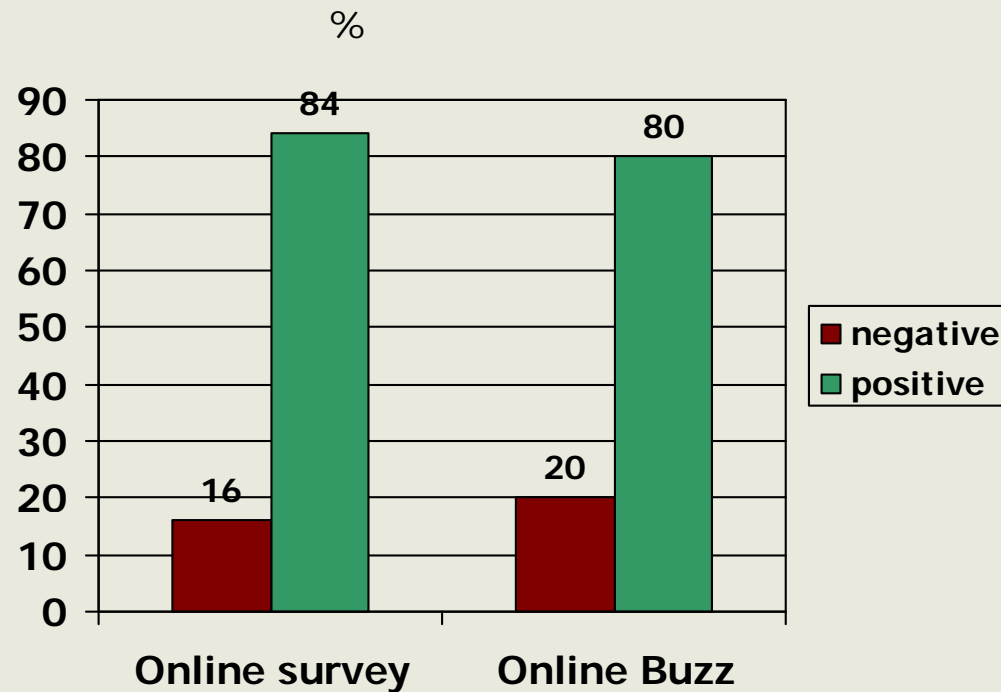
Sample Size = 501



Number of postings = 10,636

Method: Linear SVM/manual classification

## Applicability of Weight Watchers for reducing weight



Evaluation on [www.abnehmen.com](http://www.abnehmen.com)

Sample Sizes: Online survey = 501 (Aggregation of five open-ended questions: Spontaneous Associations, Experiences, Likes and Dislikes, Improvements);  
Online Buzz = 1035 postings

## Reasons for a **positive** evaluation

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### Online Survey (Spont. Assoc.)

Good weight reduction experience	14 %
General concept is liked	14 %
Healthy method for losing weight	10 %
Without compromising enjoyment of food	10 %
Simply to apply	6 %

Sample Size = 501

### Online Buzz

Good weight reduction experience	47 %
General concept is liked	14 %
Simple to apply	11 %
Healthy method for losing weight	9 %
Without compromising enjoyment of food	5 %

Number of postings = 1035

## Reasons for a **negative** evaluation

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### Online Survey (Spont. Assoc.)

Too expensive	19 %
Too complicated	13 %
Bad weight reduction experience	7 %
Peer pressure	2 %
General concept is disliked	2 %
Yo-yo effect	2 %

Sample Size = 501

### Online Buzz

Too complicated	26 %
Bad weight reduction experience	23 %
Yo-yo effect	22 %
Too expensive	14 %
Lack of self-discipline	13 %

Number of postings = 1035

## Most important attributes for a high overall evaluation

### Attribute

### Ranking of topics on social media platforms

Good weight reduction experience	.67*	←	1 Good/bad weight reduction experience
The WW program is fun (r=0.62 with good weight reduction experience)	.65		
Healthy method for losing weight	.59	←	5 Healthy method for losing weight
Fits in well with everyday life (r=0.56 with simple to apply)	.58	←	2 Simple to apply / too complicated
Long-term weight reduction	.56	←	3 Yo-yo effect

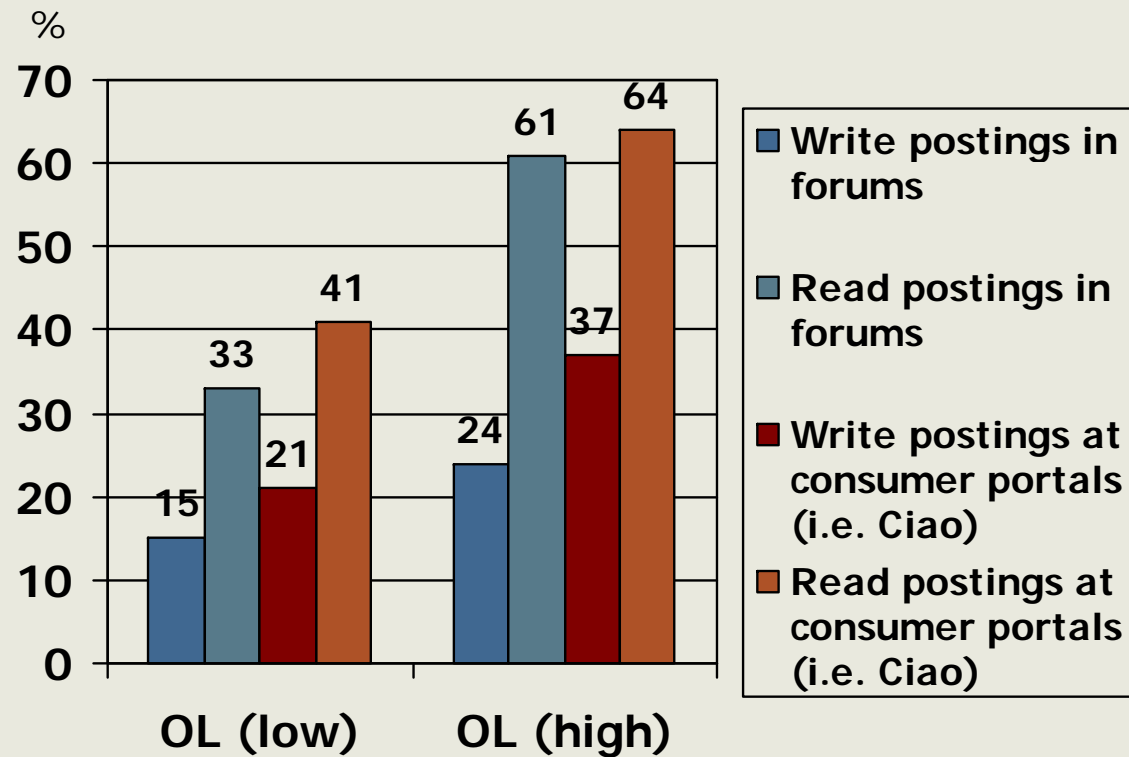
\* Correlation Attribute – Overall evaluation (all correlations are highly significant)

Sample Size = 501

# Opinion leaders are more active on social media platforms

## Confirmation of hypothesis 2

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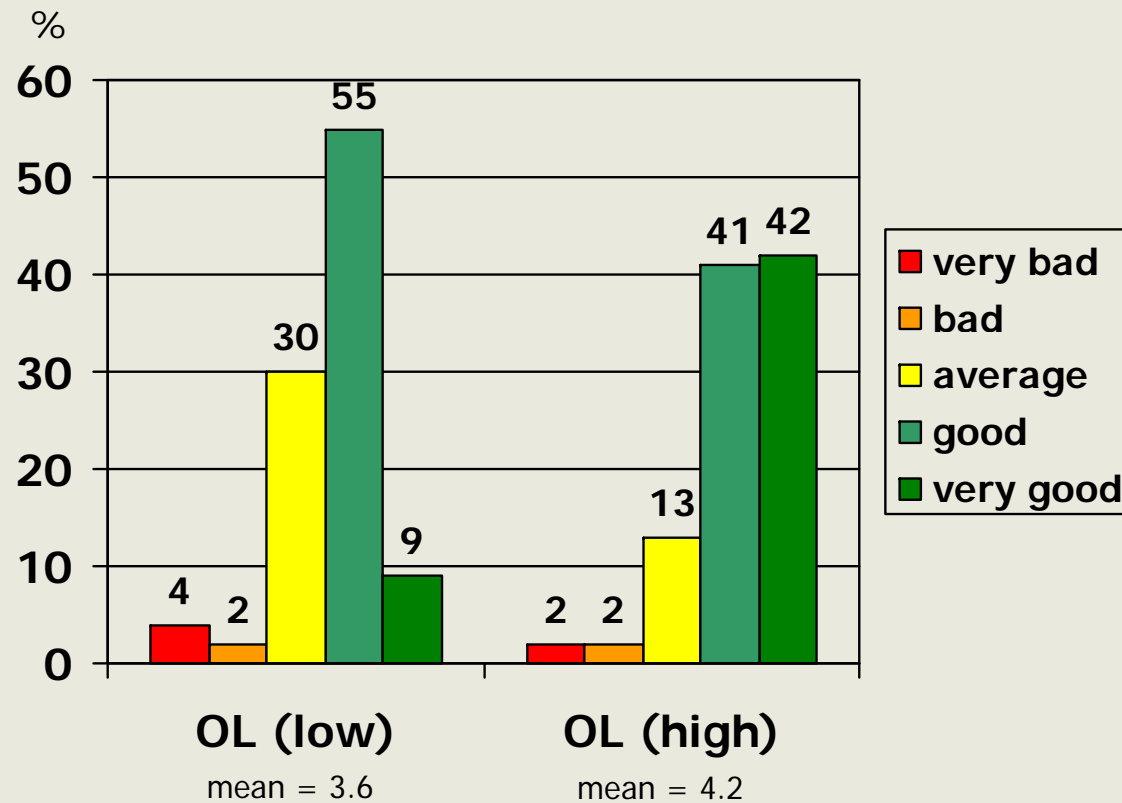


Sample Sizes: OL (low) = 123; OL (high) = 118

# High opinion leaders evaluate WW better than low opinion leaders

## Falsification of hypothesis 3

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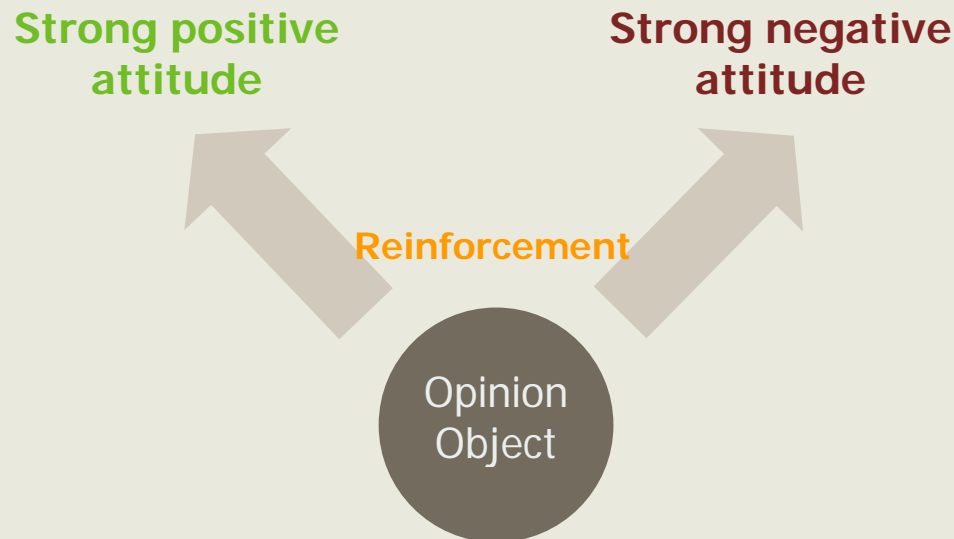
$t(239) = 5.47^{***}$

Sample Sizes: OL (low) = 123; OL (high) = 118

## Explanation of the effects observed

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**Opinion leaders appear to reinforce both positive and negative trends of thought: they develop a strong attitude to an object which is more positively or negatively biased compared with other consumers. This attitude is then communicated to others.**



# 3. Conclusions

## Confirmation and falsification of hypotheses

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- The evaluation of Weight Watchers is more critical on social media platforms than in online surveys. **TRUE in the case of the ratio between positive and negative evaluations**
- Authors of postings are more strongly associated with the group of opinion leaders than non authors. **TRUE**
- Opinion leaders should be more critical than other internet users. **WRONG for the online survey**

## Summary

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- The online survey and the analysis of online buzz come to comparable conclusions
- Online buzz is characterised by a strong exchange of factual information which shows no sentiment
- There is a tendency in online consumer buzz to report more negative experiences
- The importance of attributes for the overall evaluation of WW corresponds with the frequency of postings on social media platforms
- Web content mining can be seen as a new qualitative method which can inform the preparation of representative, quantitative online surveys