

# Time series analysis of orthodontic patients' satisfaction and the result of interventions

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Patient's compliance is an essential criterion for successful orthodontic treatment. It is necessary to know more about the conditions of compliance in order to analyse and control the motivation for cooperation and to have the chance for well-directed interventions.

For over 10 years, we have collected data systematically. Since 2003 we use a standardized questionnaire twice a year. In a typical week all our patients are requested to fill in the questionnaire anonymously. It takes about five minutes while they are waiting. We rely on a sample of at least 100 respondents. Validity and reliability is tested and evaluated externally.

The analysis shows that the following categories are the main drivers of patients' satisfaction:

- Treatment result so far
- Duration of treatment so far
- Treatment procedure
- Pre-treatment information
- Information during treatment
- Pleasantness of staff
- Waiting time during appointment

### Patients' questionnaire (extract)...

If you are in the office, waiting time is  
O short O adequate O too long?

The treatment result so far is  
O very good O good O mediocre O bad?

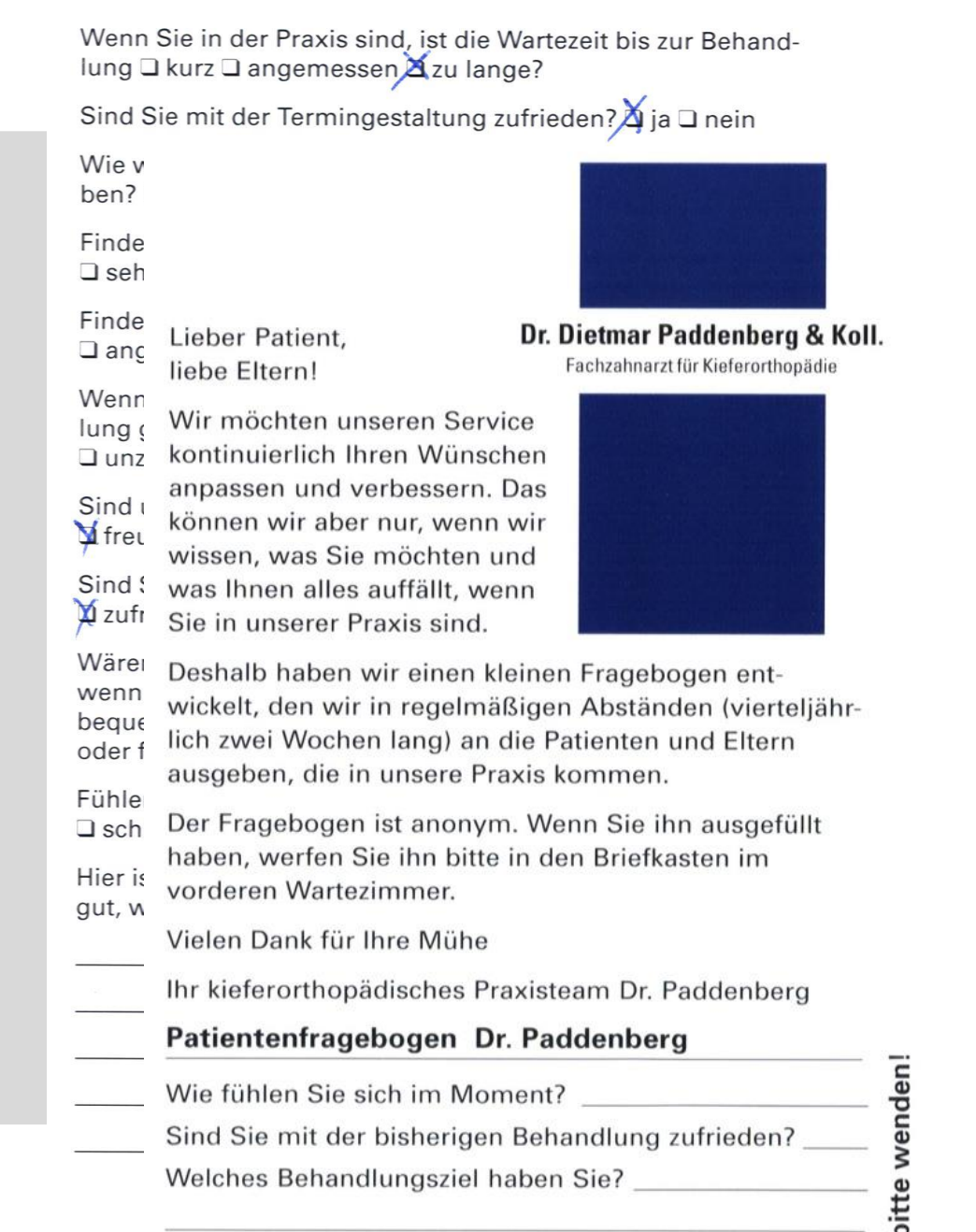
Do you think the duration of treatment so far is  
O adequate O too long O don't know?

Is our staff typically  
O friendly O neutral O unfriendly?

Are you  
O satisfied O dissatisfied O undecided  
with the treatment procedure?

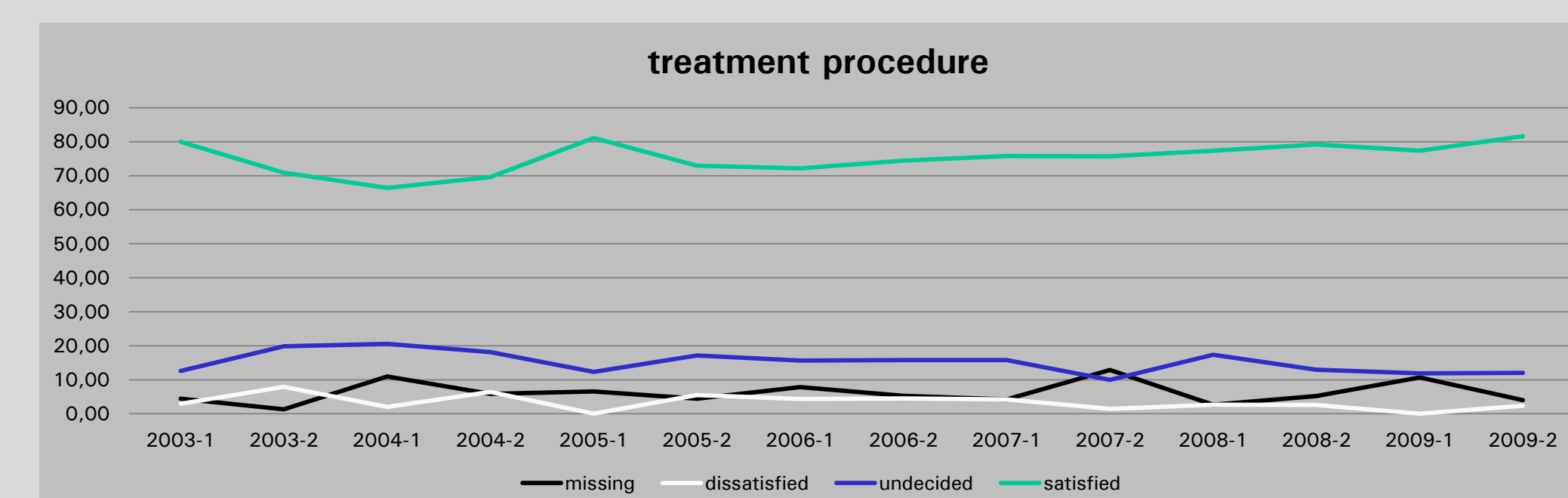
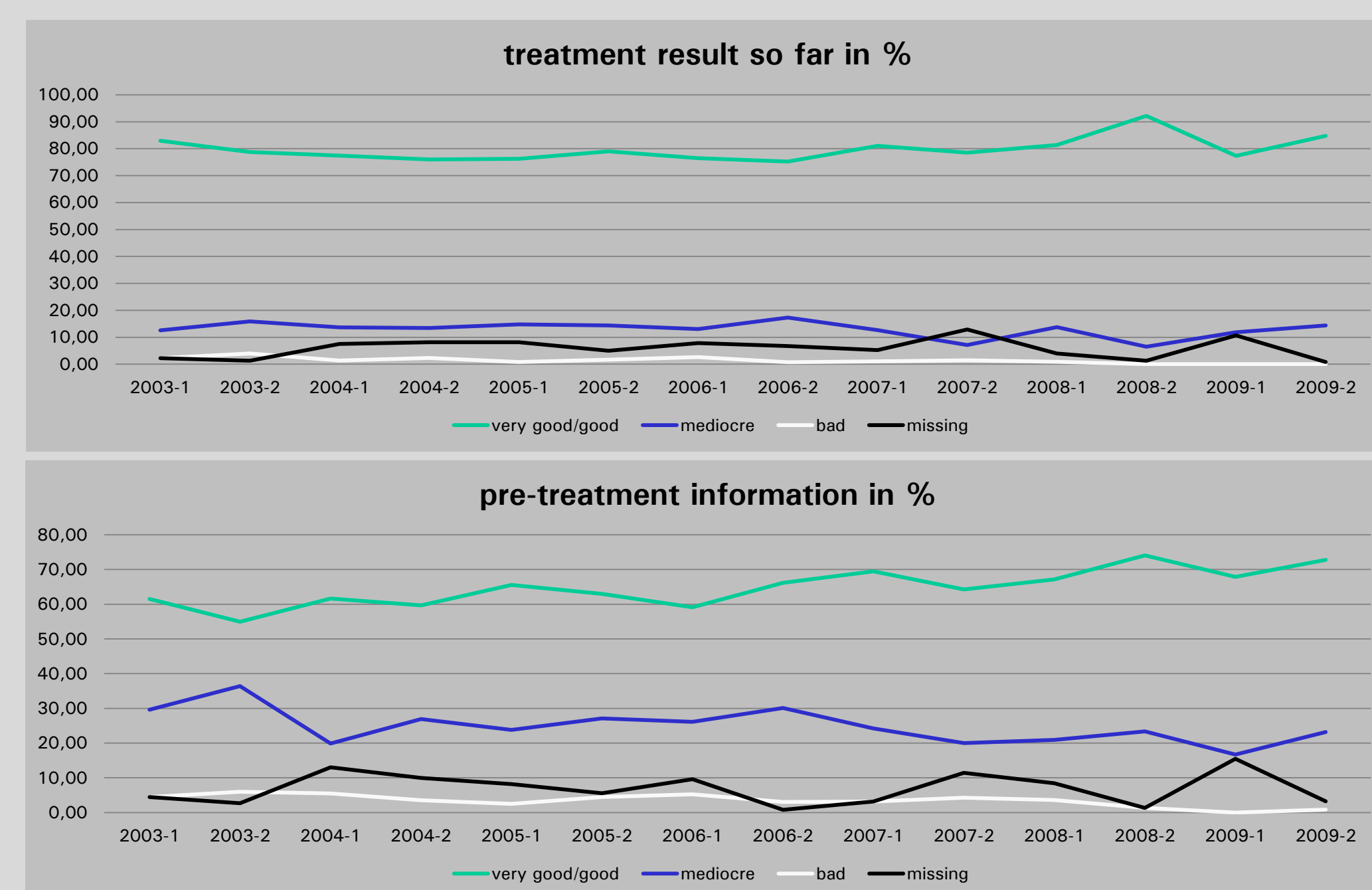
Is pre-treatment information is  
O very good O good O mediocre O bad?

Is the information during the treatment  
O very good O good O mediocre O bad?

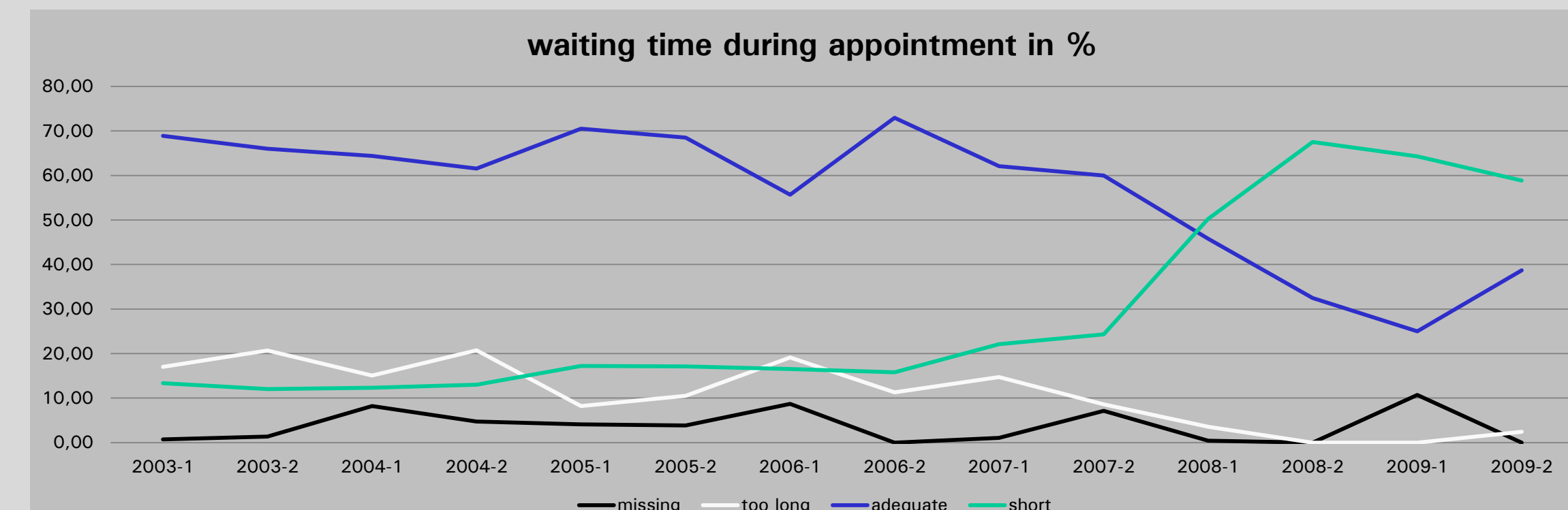


The continuous interviewing of orthodontic patients does not only show weaknesses or strengths in different areas at one point in time. It identifies regressive or incremental trends from which recommendations to act successfully can be interferred. Some of the categories can be influenced in the short term while others show long-term trends.

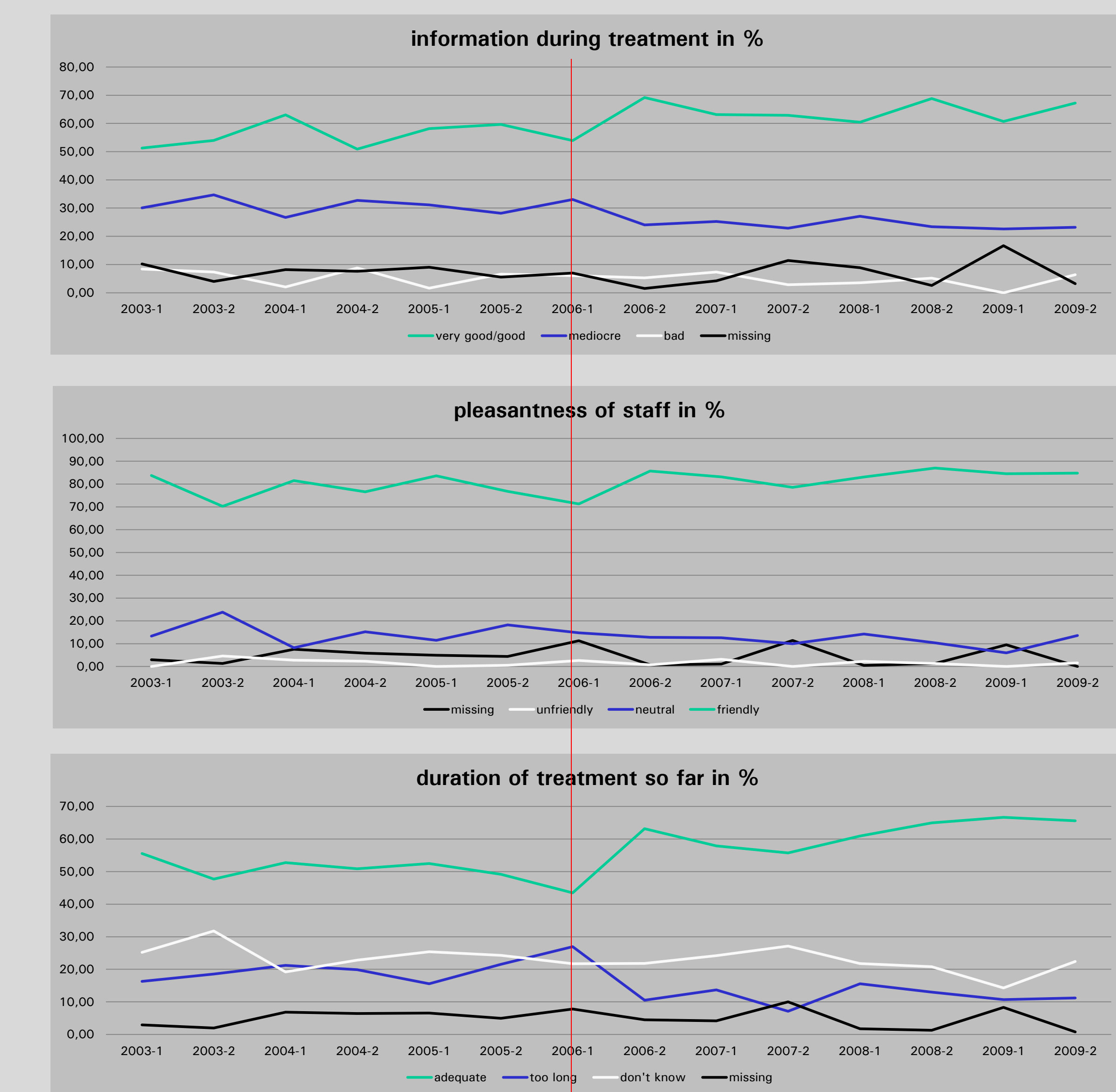
„Treatment result so far“, „treatment procedure“ and „pre-treatment information“ are long-term trends which, in the eyes of the patients, represent the continuous development of the orthodontic office. These categories are basic factors for patients' satisfaction and their compliance.



The time series analysis of „satisfaction with the waiting time during the appointment“ produced a special result: in the second half of 2007 it increased enormously. Due to the expansion of the office, we had analyzed the patient's tracks in the office to reorganize them completely, resulting in a significantly lower waiting time and increased satisfaction.



We see that „duration of treatment so far“, „information during treatment“ and „pleasantness of staff“ can be influenced in the short term. The satisfaction concerning treatment duration did not show the trend we expected. In 2006 we analyzed the correlations in the questionnaires so far, especially with regard to the quality of information. As a result, we increased the information and communication abilities of the staff. In the next questionnaire the duration-, the information- and the pleasantness-value increased., showing that the improvement of the staff's abilities had an immediate influence on patients' satisfaction.



Time series analysis of orthodontic patients' satisfaction leads to reasons for good or bad compliance, helps to increase the cooperation with the patients and shows the results of interventions based on the questionnaire. This approach could be one factor for a better orthodontic treatment and quality management.