DRIVER ANALYSIS (PENALTY-REWARD-ANALYSIS)

What really excites your customers?

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A **driver analysis** (or: **PRA**, **Penalty-Reward-Analysis**) provides essential insights into the causal relationships between various properties of a product or service and the overall assessment.

With the results, product development and marketing activities can be systematically assessed and controlled.

Driver analyses answer the following questions:

- What influence does a product property or single aspect of a service offer - such as price or quality – have on the perceived overall rating?
- What action needs to be taken and what are the limits in the over- or non-fulfillment of individual product features or performance dimensions?
- Upward from what performance level does the improvement of a driver, e.g. the product property "sweetness" (or the quality of a service) not lead to any significant effect on the dependent variable, for example, the willingness to purchase the product or overall satisfaction with the offer?
- Determine the strength level of a product feature or performance level of an offer at which acceptance drops, i.e. the point at which the overall satisfaction and performance are not rated positively?

The direct query of the importance - often asked for as "importance" or "ideal strength" of an individual product property or service, results in information of low reliability. Also, unconscious drivers remain mostly hidden. Moreover, direct questions often lead to an inflationary and exaggerated claim level and frequently deliver hardly reliable and differentiating importance levels for the tested properties or services.

In order to gain more reliable information numerous statistical procedures were developed that determine the influence of various drivers implicitly by means of indirect queries.

Experience shows that particularly the **Penalty-Reward Analysis (PRA)** provides much better results than direct or simple indirect methods. The PRA offers a **significant added value in the analysis of the causal relationships for the development and optimization of a product or service offer**.

Linear Causal Relations

In order to determine linear correlations the driver analysis usually includes a Shapley value regression which takes multi-collinearity into account to deliver meaningful results. (Multi-collinearity occurs when two or more of the independent variables in a regression model not only correlate with the dependent variables, but also with each other).

Non-Linear Causal Relations

Not all relevant drivers cause the same effect in a comparable, linear way, such as willingness to pay and satisfaction:

Some drivers can, if not present at all or present in a very low strength, produce only dissatisfaction. And even if present very strongly they don't really increase satisfaction (**Basic Factors**).

Other drivers work exactly the opposite way: they disproportionately increase satisfaction if positive, but do not necessarily cause but dissatisfaction if negative (**Delighter**).
Drivers that work in both directions are referred to as **Performance Factors**.

Kano Model

The distinction between Basic Factors, Delighters and Performance Factors is based on the Kano model and provides the background of the **Penalty-Reward Analysis**.

It offers many advantages in terms of the

quality and interpretability of the results compared to linear driver analyses:

- The non-linear measurement and the classification of the drivers into Basic, Performance and Delighter requirements allows detailed statements for concrete and efficient improvements of a product or a service offer.
- Based on the determined importance, nature of requirement and achieved average performance evaluation relevant product or service features can be identified and compared with competitors.
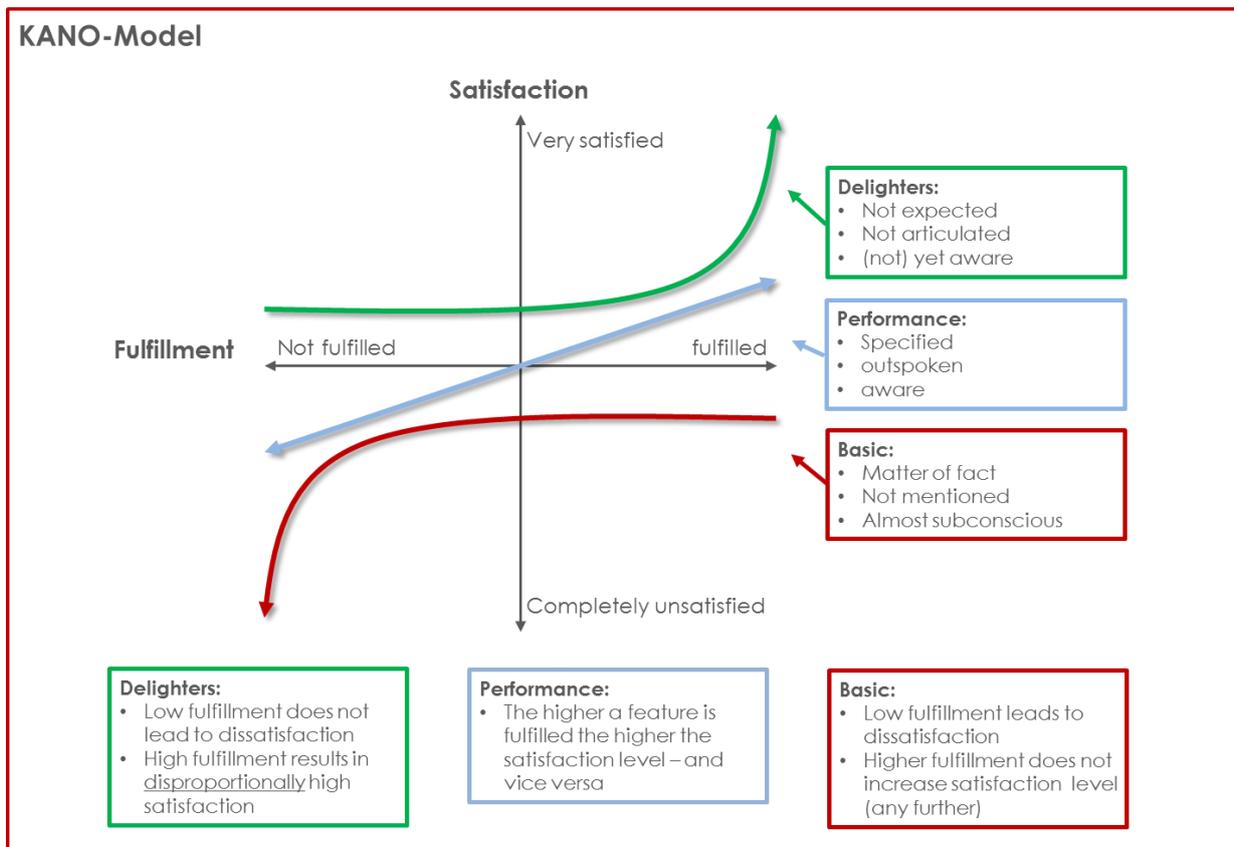
The penalty-reward analysis is based on a Shapley value calculation, in order to take account of multicollinearity.

performance of each single driver, it can be determined which drivers are particularly valuable for future action.

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Exemplary Results: Product assessments and driver functions

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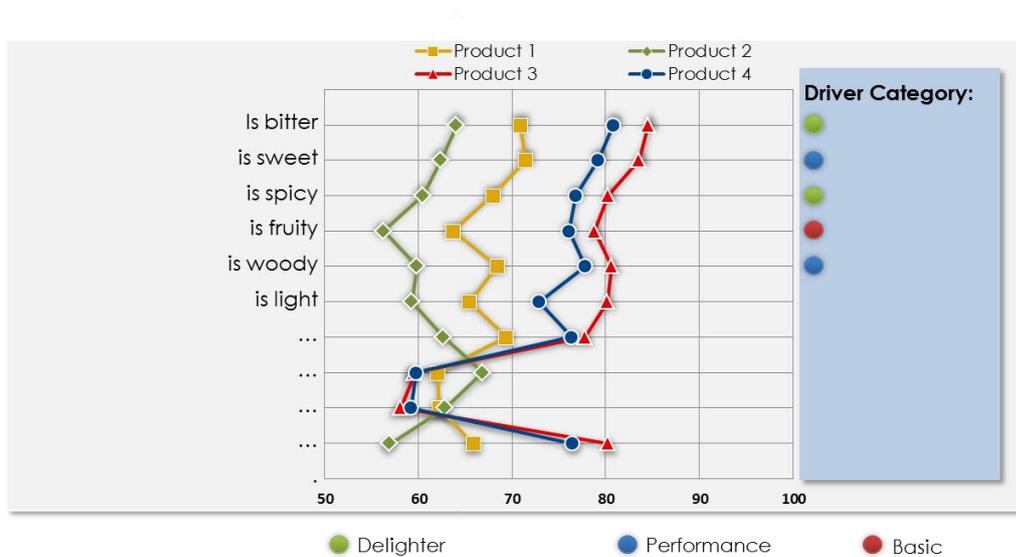
In addition to the quantified impact of the driver on the evaluation (driver strength), the "quality" of the driver is identified. By taking into account the current

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Example: Clear recommendation for product 4 in comparison to product is …

1. Priority: Increase bitterness and spiciness

2. Priority: Increase sweetness and woodiness

3. Priority: Maintain fruitiness

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