Part I: create a list of basal attributes

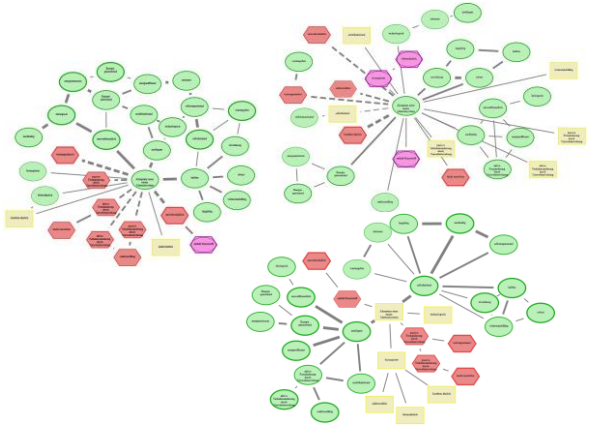
(a) Conducted 14 guided expert interviews to create an initial list of basal attributes

(b) Reduced initial lists by three raters

(c) Got ratings of 21 experts for (a) the relevance of remaining basal attributes and (b) possible missing's

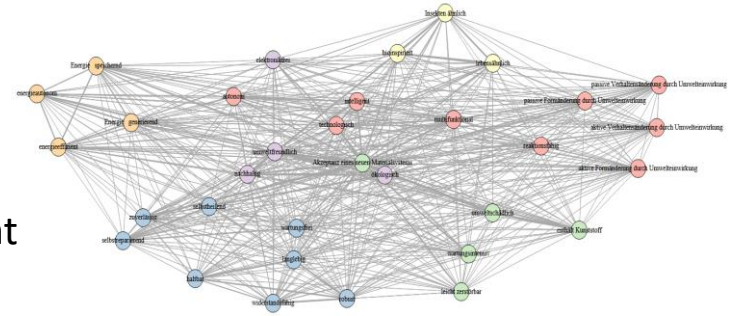
(d) Automatically scanned all *liv*MatS for possible relevant adjectives using part-of-speech tagging

Part II: Cognitive-Affective Maps study



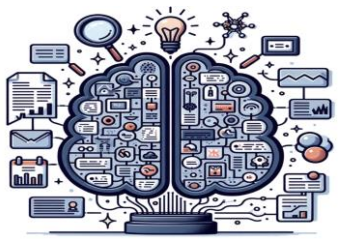
Conducted large-scale CAM study with N=192 laypersons

Applied analyses on different levels of the CAMs, using especially community detection algorithms



Identified clusters of basal attributes surrounding the central concept

Part III: use LLMs to create textual descriptions



Applied LLMs to create textual descriptions of future material systems using identified clusters

Scenario # 1

Dave Smith is developing an advertisement for a new housing development his firm is about to start. The development is located in a low area which has flooded in the past. The company has recently done some work to reduce the danger of flooding in the future. In the preliminary advertisement, Smith has included a statement indicating that the firm has solved the flooding problem. The fact is that if a flood occurs, the homes are still likely to have up to a foot of water standing in the yards.

Positive description

Scenario # 1

Dave Smith is developing an advertisement for a new housing development his firm is about to start. The development is located in a low area which has flooded in the past. The company has recently done some work to reduce the danger of flooding in the future. In the preliminary advertisement, Smith has included a statement indicating that the firm has solved the flooding problem. The fact is that if a flood occurs, the homes are still likely to have up to a foot of water standing in the yards.

Negative description

Used ratings of X experts to check the plausibility of textual descriptions

Conducted large-scale study with N=X laypersons to get the acceptance of differently described material systems