Nudging Towards Health in a Conversational Food Recommender System Using Multi-Modal Interactions and Nutrition Labels

Media Futures.

SCAN ME

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Background

The majority of existing conversational recommender systems (CRSs) rely solely on natural language or basic click-based interactions. The goal of this project is to compare the impact of three user-system interaction and explanation modalities (textual, multi-modal, and multi-modal with nutritional labels) on both behavioral aspects (what type of recipe is chosen? How healthy is that recipe?) and evaluation aspects (how does the user evaluate the system or their chosen recipe?

Proposed Solution

Multi-modal conversational food recommender system, with three modalities as shown in figure 1:

➤ Pure textual
➤ Multi-modal (text plus visuals)
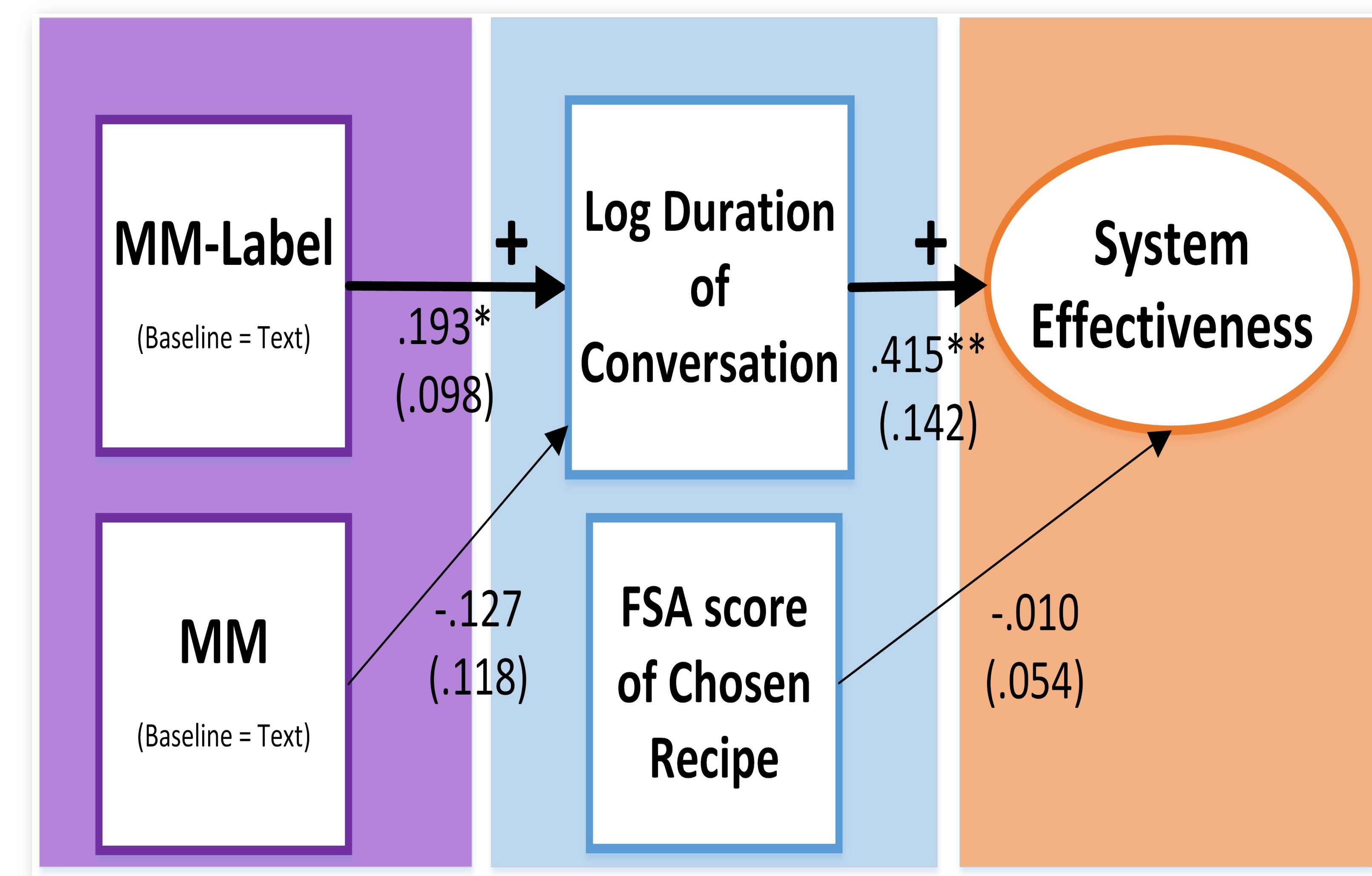➤ Multi-modal supplemented with nutritional labelling

Results

Figure 2: Structural Equation Model (SEM). Numbers on the arrows represent the β-coefficients, standard errors are denoted between brackets. Effects between the subjective constructs are standardized and can be considered as correlations, other effects show regression coefficients. Aspects are grouped by color: Objective system aspects are purple, behavioral indicators are blue (note: the FSA score represents recipe unhealthiness) and experience aspects are orange. The thinner arrows are non-significant relations, in addition:***p <0.001,**p <0.01,*p <0.05.
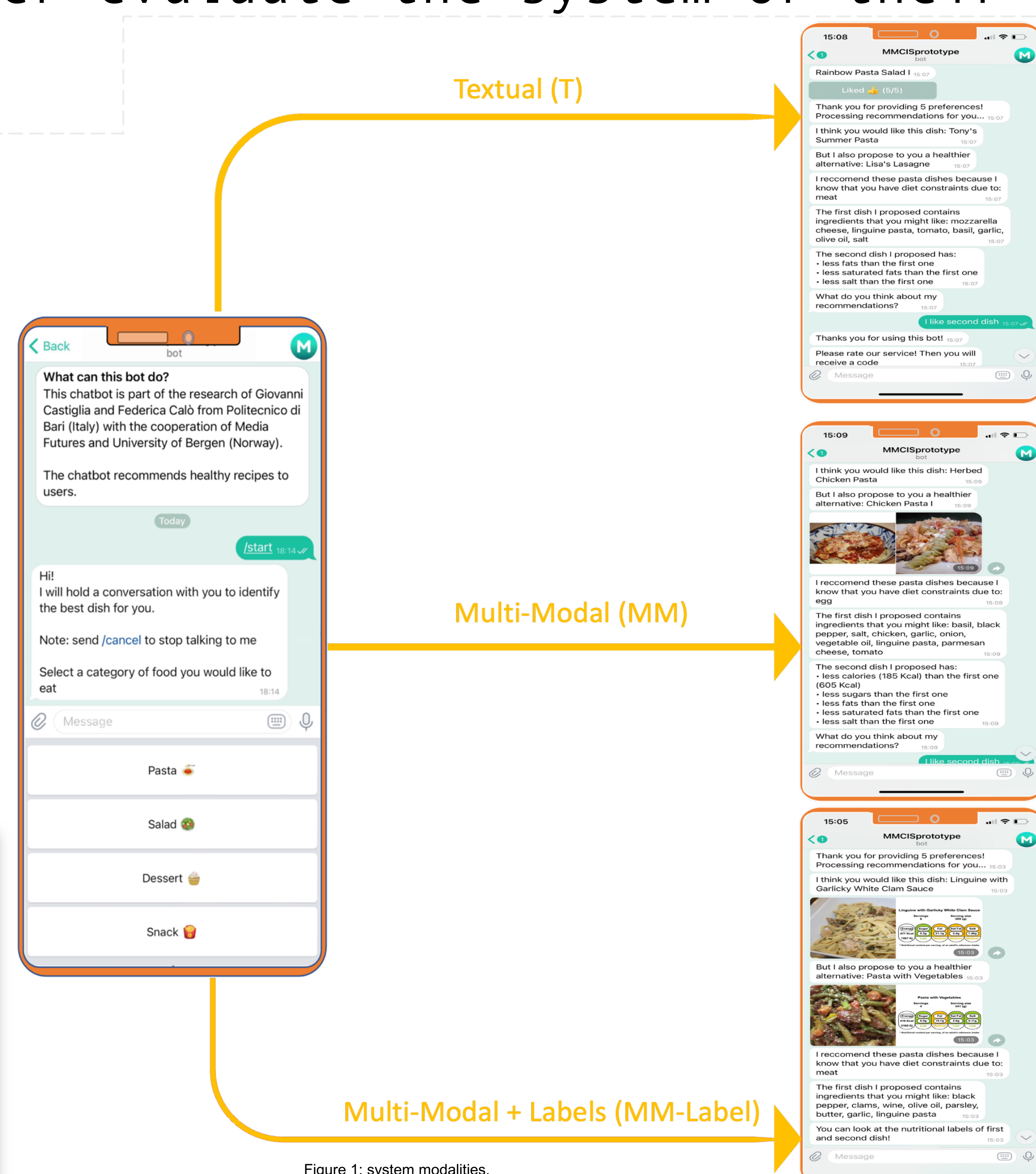

Figure 1: system modalities.

Textual (T)

Multi-Modal (MM)

Multi-Modal + Labels (MM-Label)

❖ The usage of nutrition labels affected conversation time, on top of the other modalities

❖ users who interacted with the chatbot for longer periods of time indicated greater levels of system effectiveness

HOST

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