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Motivations for meal and snack times: Three approaches reveal similar constructs

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ABSTRACT

Meals and snacks are conceptualized differently. Meals are structured while snacking often is not. Food choices for meals, thus, are expectedly different from food choices for snacks. By using three approaches incorporating two psychological perspectives, top-down and bottom-up, this research project investigated motivations influencing foods and beverage choices for different eating occasions at various times of the day. The first approach used a modified online Eating Motivation Survey (TEMS) to examine motivations for individual food items within specific contexts of eating. The second approach employed the Food Choice Map technique to explore motivations for individual food choices for all eating within a typical week. The last approach again used a modified TEMS to investigate choices for eating occasions, without examining what foods were eaten specifically. Findings from all three approaches supported that food patterns for meal were different from those for snacks. Choosing foods and beverages for meals were the result of the interplay of more motivation factors than for snacks. Food decision was significantly influenced by the time of the day at which the eating occurred. Although liking was most important for all eating occasions, day-time eating was driven more by function-oriented factors and night-time eating was more because of psychological or emotion-oriented needs. Findings from this project advance and reinforce knowledge in the food choice domain and show that investigating food choice from different perspectives can provide similar information.

1. Introduction

In the domain of food choice research, survey questionnaires are one of the most common techniques to approach factors influencing people's choices of foods and beverages. Among those are the Food Choice Questionnaire (Steptoe, Pollard, & Wardle, 1995), the Motivations to Eat Scale (Jackson, Cooper, Mintz, & Albino, 2003), the Affective and Cognitive Origins of Likings and Dislikes (Letarte, Dube, & Troche, 1997), the Ethical Food Choice Motives questionnaire (Lindeman & Väänänen, 2000), the Health and Taste Attitudes Questionnaire (Roininen, Lähteenmäki, & Tuorila, 1999) to name a few. The development of those questionnaires involves several steps that incorporate qualitative techniques at the early stage to identify the influencing factors in food choice and then the confirmation stages to validate the questionnaire. Similar processes were used in the development of the Eating Motivation Survey (TEMS) (Renner, Sproesser, Strohbach, & Schupp, 2012). Because TEMS takes into account many existing questionnaires and scales measuring food choice motivations it has been seen as a reasonably thorough questionnaire evaluating many aspects of food choice motivation including: liking, habits, need and hunger, price, convenience, health, weight control, traditional eating, pleasure, visual appeal, natural concerns, affect regulation, sociability, social norms, and social image. However, Phan and Chambers (2016a) added two additional categories, choice limitation and variety seeking, to the TEMS survey in their internet survey of six eating occasions.

Surveys of food choice can be conducted in various ways. The first approach is as a self-completed survey (often by computer) examining motivations for individual food choices. This approach is a bottom up approach, which investigate people's motivations for the eating occasions via the motivations they had for choosing specific food and beverage items for that occasion. The term "bottom-up" is a term borrowed from cognitive psychology to convey the method (Sabatier, 1986). The approach was in the name, which started with collecting motivations for individual choices of food and beverage items and then working its way up to summarize motivations for the eating event related to those food and beverage items. An internet-based approach often is chosen because of its ability to access individuals in distant locations, automate the process of data collection (Wright, 2005), save time and reduce cost (Evans & Mathur, 2005; Lefever, Dal, & Matthiasdottir, 2007). Online survey have been found to provide more honest responses than printed

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questionnaire (Huang, 2006). However, there are some concerns with using online surveys, such as low response rates, unclear instructions, or lack of representativeness of the subjects (Evans & Mathur, 2005; Wright, 2005). With proper pre-testing of instructions and questionnaires, proper guidance on the amount of time the questionnaire may take, and appropriate screening of consumers those issues may be somewhat ameliorated while still allowing a large group of people to be testing in a timely fashion.

A second approach is an adaptation of the Food Choice Map (Sevenhuysen & Gross, 2003). This method initially starts with a qualitative interview procedure that records the frequency of food consumption and reasons for food choices. In a FCM interview, the respondents create a map that presents foods they ate in a usual week and provides detailed information about the contexts of eating those foods. The FCM procedures was validated in the original study using 24 h recall interviews and then was revalidated by Shuaibi, Sevenhuysen and House (2008). The collection of such qualitative data in large scale studies can provide quantitative data for analysis when the data have been collected in sufficient depth to provide counts of the qualitative information (Chambers, Godwin, and Vecchio, 2000). Quantitative studies of greater than 100 consumers have been shown to provide reasonably consistent results across multiple studies (Hough et al., 2006). Thus, the FCM technique could potentially be used in a large study to collect motivations for individual choice and the use those to generate the motivation constructs for the corresponding eating occasions. Using this approach in this manner would also be a “bottom-up” process.

The third approach would be to conduct a TEMS style survey targeting eating occasions rather than individual foods. This approach could be considered a “top-down” approach, again borrowing a term from cognitive psychology (Kinchla & Wolfe, 1979). It uses the idea that people are asked to directly respond to a statement such as “Consider all the foods and drinks I eat for breakfast (mid-morning snack/lunch/mid-afternoon snack/dinner/late-night snack), I eat those foods because …”. This procedure makes people first think about their breakfast eating as a whole and then determine the motivations (from the TEMS statements) that they consider “appropriate” for that eating occasion. This approach also could be employed as a self-administered survey, similar to the first approach, but does not require that the individual first name the foods he/she ate.

One issue with various approaches is that they sometimes can produce different results. This impact of research methodologies is sometimes found in other consumer studies either because of differing main methods of data collection (e.g. Eldesouky, Pulido, & Mesias, 2015) or more minor differences in such things as reference products (e.g. de Saldamando, Antúnez, Giménez, Varela, and Ares, 2015) where differences in results may be more dependent on the details of the specific method (i.e. the range of reference samples) rather than the method itself. A comparison of eating motivation research methods using similar motivation criteria has not been found. For the cases mentioned, the first and third approaches use reasonably short survey methods, while the second approach uses a more extensive and time consuming interview process. The first process provides responses to foods for the most recent eating occasion, while the third process provides no information on individual foods, rather it only provides information on a general eating occasion. The second method provides the most detailed information on the broadest range of food products, but clearly takes the most time both in the interview process and in data decoding. Naturally each method has advantages and disadvantages that could make any of them appropriate depending on other specific needs of the research. However, a major question remains – “Do they provide similar information on Motivations for Eating Behavior”. Fig. 1 presents the rationale behind the top-down and bottom-up approaches.

Thus, this study was designed to determine whether the methods provide similar information on eating motivations for meals and snacks. In short, this study used the three approaches and incorporated both qualitative and quantitative methodologies to explore the motives underlying people’s food choices for different eating occasions, meals vs. snacking. Findings from this study were expected help determine whether the formats for testing provided differing answers to the question of what differences are there in motivations for meal and snacking eating behavior.

2. Materials and methods

2.1. Online survey questionnaires targeting motivations for individual food and beverage choices (TEMS individual choices)

The survey questionnaire took in the brief version of TEMS (Renner et al., 2012) which included fifteen motivational factors and incorporated two additional factors into the questionnaire, i.e. Choice Limitation and Variety Seeking (Phan & Chambers, 2016a, 2016b). Each of the motivational factors was measured by three scales with the exception of Convenience (four scales, i.e. because it is quick to prepare; because it is the most convenient; because it is easy to prepare; because someone made it for me and it is the choice), Choice Limitation (two scales, i.e. because it was what was served; because it was the only choice) and Variety Seeking (two scales, i.e. because I don’t like to eat the same food for the same meal every day; because I like to eat a variety of different foods each day). The core of the questionnaire was to ask the respondents to report which was the latest meal/snack they had by choosing from the list of six convenient names for main meals and snacks, including breakfast, mid-morning snack, lunch, mid-afternoon snack, dinner, and late-night snack. If their eating was not one of these six options, then they could choose option ‘other’ and specify the name of that eating. Those six convenient names were chosen due to the fact that breakfast, lunch, and dinner are the common preferable English words used to label the three main meals in a day and snacks are often defined relative to meals in term of time. For instance, snack is ‘a small amount of food eaten between meals’ (Oxford dictionaries.com). Therefore, time of the day was used to be the main criteria for naming meals and snacks in this study.

Upon reporting the latest meal or snack, the respondents were asked to specify how many food and beverage items they consumed for that eating occasion, and what those items were. The respondents were then provided with one TEMS per item to indicate the reasons why they chose to eat that food or beverage item. If one reported eating three items for breakfast, for instance ‘a fried egg’, ‘a cup of coffee’ and ‘an apple’, then s/he filled out three modified TEMS for those three items to report all motivations underlying those choices. The minimal number of item was one and maximal was seven. If a respondent ate more than seven items then s/he was instructed to report for only seven representative items.

There were a total of 198 respondents who completed this survey questionnaire. They were people living in the Midwest of the United States (Manhattan, Kansas), 18 years or older. Fifty-six percent were employed full-time. More than 50% of the sample was staff, and faculty at local universities or colleges. Their demographic information is presented in Table 1.

2.2. The food choice map targeting motivations for individual choices (FCM)

One hundred people who were recruited via the consumer database of the Sensory Analysis Center at Kansas State University for this study. The respondents were older than 18 years old, mostly were White/Caucasian American, and about half were in the middle-class income range ($25,000–$100,000) (Table 1). The respondents were invited to come to the testing facility to participate in a one-on-one interview about their diet in a typical week. Each interview lasted for about 90 min. The respondents were first asked to sort through a pile of 700 pictures depicting different food and beverage items and to select those