Dynamic Instructions in Check-All-That-Apply Questions
Tanja Kunz & Marek Fuchs, Darmstadt University of Technology, Germany

INTRODUCTION
Check-all-that-apply questions ask respondents to choose several options from a set of available response alternatives, usually without limitation of the number of response alternatives that can be selected.

Shortcoming: Respondents are susceptible to ‘weak satisfying’ and inadequate response selection.
(1) respondents choose fewer responses than actually apply because they do not read and evaluate all response alternatives carefully.
(2) respondents select more responses than actually apply because they carelessly select response alternatives that apply to them only vaguely.

Approach: Instructions requesting a specific number of responses may encourage respondents to read and evaluate all available response alternatives, clearly distinguishing between all of them, and finally select the most applicable one(s).

RESEARCH QUESTIONS
(1) Is the effectiveness of instructions increased by using dynamic instructions or combined (static and dynamic) instructions compared to static instructions?
(2) Does the extent of respondent burden differ depending on varying instruction types?

METHODS
Study Web survey among university applicants in March 2016
Design Between-subjects design with random assignment
Factor Instruction type Instruction request
(a) none
(b) static
(c) dynamic
(d) combined
Variable Measured by Expectation
Compliance % correct # of responses checked 
Burden mean time spent on responding
Equivalence % rated “very important” & checked based on all responses checked
Distinction % rated “very important” & checked based on all responses checked

MEASUREMENT
Mean number of response alternatives checked

The mean number of responses checked was decreased (3-responses) or increased (5-/7-responses requested) compared to the control group (with an average of 4.4 responses checked), irrespective of the instruction type.

No differences between the three instruction types, except with the 7-responses request: In that case, the combined instruction yielded the highest, whereas the dynamic instruction yielded the lowest number of responses.

KEY FINDINGS

Compliance: Instruction increased the percentage of respondents choosing the correct number of responses, irrespective of the instruction type and instruction request.

The combined instruction was most effective, especially with the 7-responses request. The static instruction was equally (3-responses request) or more effective (5-/7-responses request) than the dynamic instruction.

For small-format respondents (Smartphones, etc.), the dynamic instruction was least effective, irrespective of the number of responses requested.

Burden: With all three instruction types, it took significantly longer to complete the check-all question (irrespective of the # responses requested).

No differences between the three instruction types, except with the 7-responses request: In that case, the combined instruction took longest.

Similar patterns for respondents using large-format and small-format devices.

SUMMARY
Compliance with instructions: Combining dynamic and static instructions yielded the highest compliance rate, whereas dynamic instructions alone failed to achieve higher compliance than static instructions. Expectations were partly confirmed.

Respondent burden: Combining dynamic and static instructions did not take more time to complete compared to the static or dynamic instruction, except a high number of responses is requested. Expectations were partly confirmed.

Equivalence rate: Irrespective of the three instruction types, equivalence between the rating and check-all question increased as the requested number of responses was increased. Expectations could not be confirmed.

Distinction rate: Irrespective of the three instruction types, the distinction between applicable and not applicable response alternatives decreased as the requested number of responses increased. Expectations could not be confirmed.

CONCLUSIONS
The findings of the present study showed that static and dynamic instructions are principally suitable to convey a requested number of responses in check-all-that-apply questions in order to either limit or extend the responses that would have been selected spontaneously.

Highest compliance is achieved by using combined instructions without substantially increasing respondent burden:
- Combining the permanent effect of the static instruction and the additional temporary effect of the dynamic instruction (appears when it is needed) seems to be most effective in achieving high compliance.
- By contrast, solely relying on the temporary effect of the dynamic instruction involves the risk of respondents ignoring the instruction.

However, findings on compliance, equivalence, and distinction imply that high compliance with instructions specifying the number of responses does not necessarily mean a more thoughtful response selection process and high data quality.

When the number of responses that would be selected spontaneously without an instruction is exceeded, the likelihood of including not applicable response alternatives in the response selection process is increased.

Thus, specifying the requested number of responses below this critical value and presenting the instruction request using a combination of a static and dynamic instruction is likely to achieve highest effectiveness in terms of compliance, equivalence, and distinction in check-all-that-apply questions.

Further information: kunz@ifs.tu-darmstadt.de