

Re-exam

Question 1.

The questions on this page are based on Verhagen, M. P., de Reuver, G. A., & Bouwman, W. A. G. A. (2021). Implementing Business Models Into Operations: Impact of Business Model Implementation on Performance. IEEE Transactions on Engineering Management, 1-11

Business models (BMs) help firms to translate abstract strategic decisions into their daily operations. We adopt an empirical approach, by analyzing the results of a large-scale, representative survey among European small and medium-sized enterprises (SMEs). In line with the existing literature, the research confirms that spending time and effort on creating new BMs has a positive impact on the firm performance. This positive impact on firm performance is, in part, mediated by BM implementation (i.e., translating new BMs into operating models and enterprise architectures). This article provides empirical support for the argument that BM innovation is not just a matter of strategic thinking and experimenting with BM components and BM architecture, but that also aligning BMs to operations and enterprise architectures.

1. Formulate an **explanatory** research question that corresponds with the study. Make sure that the research question includes at least two constructs that are referred to in the abstract. Make sure the research question is not normative and not prescriptive (2 points)

Correct answers (2 points)

- To what degree do time / effort / BM implementation explain firm performance?
- How does firm performance depend on time / effort / BM implementation?
- To what extent does BM implementation mediate the impact of time / effort on firm performance?

Incorrect (0 points)

- Descriptive questions: what is / what are types of ...
- Questions that are about only one concept, e.g. What explains firm performance? Or What is the result of BM implementation?
- Normative / prescriptive questions: e.g. How should firms do BM implementation? How to increase profits?

Partly correct:

- Yes/no question (1 point)
- Objects are used in the question rather than their properties (e.g. 'what is the impact of BMs on performance') (1 point)

Question 2

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2. The authors write about two limitations of the study:

"Limitation 1: The results are based on a cross-sectional survey.

Limitation 2: Relevant control variables, like industry sector, technology or country, could not be included in the statistical analysis. This is because there was a limited sample size.

Therefore, we only have controls related to size (i.e. micro, small or medium); gender of the CEO; the age of the firm; and family versus non-family business. "

For each of the limitations, state whether they relate to internal or external validity. Motivate your answer (2 points)

Correct:

Limitation 1 relates to internal validity (0.5 point), by collecting survey data at one point in time, it cannot be concluded that (change in) the independent variable precede (changes in) the dependent variable (0.5 point). The answer should clearly refer to the *time order* between the independent and dependent variable.

Limitation 2: two possible answers:

- Answer 1 (model answer): relates to internal validity (0.5 point), the control variables that are not included *could explain the dependent variable* (0.5 point).
- Answer 2 (alternative answer): relates to external validity (0.5 point), because controls could not be tested, it becomes more difficult to assess whether results can be generalized *to different subsets of the population* (0.5 point). Incorrect: the representativeness of the sample cannot be assessed (this is not what control variables in statistical analysis are for: 0 points); the study is not representative / cannot be generalized (this cannot be assessed: 0 points); sample size is too small (this is not the main limitation being mentioned: 0 points)

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3. In the paper, the authors write:
“Survey data were collected through a telephone interview, with the respondent being the manager, owner or another core manager within the SME. “
Define the unit of observation and the unit of analysis for the study. (2 points)

Correct answer:

- Unit of analysis = SME (1 point)
- Unit of observation = owner/manager (1 point)

Question 4.

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4a. Formulate a semantic differential item to measure the construct 'time spent on creating new business models' (1 point). Please include the item and the answer categories.

Correct answer:

A question about time spent with a bipolar answer category (1 point). Both the question and answer category should be provided to earn points. The answer category should be antonyms (e.g. happy-sad)

Example:

How often do you work on your business model?

Never All the time

How much time do you spend on your business model?

None ... All my time

How much effort do you spend on experimenting with new business models?

No effort at all.... A lot of effort

4b. Suggest a way to evaluate concurrent validity (1 point)

Correct answer: Any somehow practical way that differentiates that invest time from those that do not (1 point)

Example: Compare the answers with time sheets of the company

Incorrect answers: Predictive validity (differentiating SMEs in relation to a *future* characteristic [e.g. future timesheets]) or other forms of validity, test-retest reliability etc

Question 5.

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5. The authors would like to assess whether the size of the SME is a moderator. Specifically, they want to compare small and medium-sized businesses. One of the authors observes that there are 1.2 million small businesses in the EU and only 200,000 medium-sized businesses. The author therefore argues that they should not use simple random sampling.

5.a. Provide an argument against the use of simple random sampling, given the considerations above (1 point)

Correct: There is a risk that the moderating effect cannot be studied (0.5 point) because simple random sampling will give you much less medium-sized companies in the sample (0.5 point)
Incorrect: Explaining only what simple random sampling is (0 points) or other arguments (0 points)

5.b. Suggest an alternative probability sampling form that could resolve the problem (1 point)

Correct: Cluster sampling (1 point) or stratified sampling (1 point).