

Question 1

The questions on this page are based on Liu, A., Gu, J., & Liu, H. (2021). The fit between firm capability and business model for SME growth: a resource orchestration perspective. R&D Management.

Despite the increasing attention on the role of the business model in affecting firm performance, knowledge of how to leverage the influence of business models remains scarce. Drawing on resource orchestration theory, we theorize how firm capabilities, such as technology capability and marketing capability, moderate the relationship between the business model and firm performance in the context of small and medium-sized enterprises (SMEs). Matched survey data and objective performance data were collected from 140 Chinese manufacturing SMEs in two waves to test our model. The results reveal that the interaction of the efficiency-centered business model with technology capability and the interaction of the novelty-centered business model with marketing capability both positively impact SME performance. Theoretical and practical insights on how firm capabilities can leverage the performance impact of business models are discussed.

1. In the conclusions of the paper, the authors mention a practical insight from the study: 'When SMEs adopt novelty-centered business models to improve performance, managers should emphasize the development and leverage of marketing capability' A management consultant has read this practical insight. The consultant now starts to wonder how SMEs could increase their marketing capability. Formulate an exploratory research question that addresses his curiosity. Make sure that your research question is **not** descriptive, **not** normative and **not** prescriptive. (2 points)

Correct answer: One sentence, exploratory question, about the topic of marketing capabilities growth (2 points)

Partially correct: Exploratory question that does not have a 'how' component (e.g. 'to what extent') (1 point)

Example answers:

- How do marketing capabilities grow / increase?
- How can marketing capability growth be explained?

Incorrect answers:

- Descriptive questions (0 points). For example: What are marketing capabilities? What are types of marketing capabilities?
- Normative questions (0 points): How to increase marketing capabilities?
- Explanatory questions (0 points): To what extend does marketing capability depend on factor X?
- Not the right question content-wise (e.g. what is the impact of marketing capabilities, how to leverage marketing capabilities, how does the business model affect marketing capabilities, etc)

Question 2

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2. Formulate a moderation hypothesis, based on the abstract. (2 points)

Correct answer: Tentative statement (not a question) that links three constructs (2 points)

Example correct answers:

- The impact of efficiency-centered business models on performance is (positively) moderated by technology capability
- The impact of novelty-centered business models on performance is (positively) moderated by marketing capability
- For companies with a high technology capability, the impact of efficiency-centered business models on performance is higher / different
- For companies with a high marketing capability, the impact of novelty-centered business models on performance is higher / different
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Incorrect answers:

- A (research) question (0 points)
- A direct effect hypothesis (0 points), e.g. Efficiency-centered business models affect performance
- A mediation hypothesis (0 points), e.g. Firms with technology capacity have efficiency-centered business models, which in turn increase performance

Imprecise formulations, e.g.:

- Interaction with efficiency-centered business models increases the impact of technology capability on SME performance (1 point)
- Firm capabilities, such as technology capability and marketing capability, moderate the relationship between business model and firm performance. (1 point)
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Question 3

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3. In the paper, the authors write:

'We collected the research data in two waves. In Wave 1, we invited the entrepreneurs (i.e., CEOs or presidents) and two top managers (marketing managers and R&D managers) from each firm to participate in an online survey. In the survey, questions were asked about business models and capabilities. In Wave 2, we obtained objective firm performance data from the collaborating government agency a year later because this agency collects business data such as the firm's sales, operating profit, and total assets every year.'

The decision to collect data in two waves can have impact on the causality claims that the authors can make. List the four conditions of causality as taught in class. For each condition, state if the choice to collect data in two waves has an impact (yes/no). If you answer 'yes', then state in one sentence what the impact is. (2 points)

Correct answer:

Condition	Impact	Explanation if yes
The independent variable (IV) and dependent variable (DV) should co-vary	No	
The IV should precede the DV	Yes	by measuring at two points in time, the researcher has more confidence that the independent variables (e.g. business models) precede performance
No other (confounding) factor should cause a change in the DV	Yes	By measuring at multiple points in time, maturation or other disturbing effects may arise (e.g. a financial crisis happens in the meantime, managers change their behaviour, ...)
The relation between IV and DV should derive from a logical explanation (theory)	No	

- Listing all four conditions: 1 point; Listing three conditions: 0.5 points; Listing two or less conditions: 0 points
- Including at least one correct 'yes' answer with correct explanation (1 point)
- Mentioning an incorrect 'yes' answer: -1 point

Question 4

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4. One of the constructs examined by Liu et al. (2021) is technology capability. The authors define it as follows: a firm's capability to invent new technologies or apply them to the new product development (Zhou et al., 2014).

4.a. Formulate a 5-point Likert scale item to measure the construct. Provide the answer categories (1 point)

Correct answer: To what extent do you agree with <statement>, completely disagree ... Completely agree

Example: To what extent do you agree with: We use sophisticated technologies in our new product development completely disagree ... Completely agree

- A statement is given that somehow relates to Technology capability (0.5 point)
- Correct answer categories are provided: (Completely) Disagree – (Completely) Agree (0.5 point)
- Incorrect: Double question (e.g. 'or'); hypothesis (0 points); asking whether respondents agree with the definition (0 points)

4.b. Suggest a way to assess the predictive validity of the construct you defined (1 point)

Correct answer: Any somehow practical way that differentiates SMEs in relation to their future inventions / products (1 point)

Example: Survey the same SMEs one year from now, and ask them how many new technologies / inventions / products they produced.

Incorrect answers: Concurrent validity (differentiating SMEs in relation to a *current* characteristic) or other forms of validity, test-retest reliability (e.g. asking another question in the same survey) etc

Partially correct: Referring to a future test or future survey, without making clear what the criterion would be (0.5 points)

Question 5

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5. About sampling, the authors write ` We collected survey data and objective performance data from SMEs operating in China's Yangtze River Delta from 2016 to 2017. This area is one of the fastest-growing regions in China, accounting for about 18.5% of the national GDP in 2014 (Wei and Yin, 2021). We collaborated with a local government agency responsible for evaluating firm growth and investigating industry development every year. Through this government agency, we obtained a list of about 1,200 SMEs. To achieve a representative sample, 600 manufacturing SMEs were randomly selected, covering a broad spectrum of industrial activity, including the consumer products, petroleum and chemical, machinery, and electronics industries

5.a. Define the sampling frame (1 point)

Correct :The list of 1200 SMEs (1 point)

Incorrect: Any other answer, including the 600 randomly selected SMEs

5.b. The authors are not clear on what random sampling technique they utilized. Assume that they used stratified sampling. What could be an example of strata? (1 point)

Correct: Any characteristic to define types of firms (1 point)

Example: Industry. Firm size. Profit levels (high/medium/low)

Mixing up the words strata and stratum has no impact on points earned

