

## Supplementary Data

### Risk factors of supply chain in biopharmaceutical companies in Iran

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## Appendix 1- database search strategy:

("risk management" OR "risk assessment") AND ("supply chain OR "production") AND ("pharmaceutical" OR "biomedicine" OR "biotechnology")

Search strategy	database	time	results
("risk management"[All Fields] OR "risk assessment"[All Fields]) AND ("supply chain"[All Fields] OR "production"[All Fields]) AND ("pharmaceutical"[All Fields] OR "biomedicine"[All Fields] OR "biotechnology"[All Fields])	PubMed	1 May 2019	410
((ALL=("risk management" OR "risk assessment") ) AND (ALL=("supply chain" OR "production") ) AND (ALL=("pharmaceutical" OR "biomedicine" OR "biotechnology") )) AND DOCUMENT TYPES: (Article)	Web of Science	1 May 2019	401
TITLE-ABS-KEY ( "risk management" OR "risk assessment" ) AND TITLE-ABS-KEY ( "supply chain" OR "production" ) AND TITLE-ABS-KEY ( "*pharmaceutical" OR "biomedicine" OR "biotechnology" )	Scopus	1 May 2019	1020
('risk management' OR 'risk assessment') AND ('supply chain' OR 'production') AND ('pharmaceutical' OR 'biomedicine' OR 'biotechnology')	Ovid Medline	1 May 2019	452
('risk management' OR 'risk assessment') AND ('supply chain' OR 'production') AND ('pharmaceutical' OR 'biomedicine' OR 'biotechnology')	Embase	1 May 2019	1151

## **Appendix 2: Semi-structured interview questions (translated into English)**

### **Part 1.Introductory Questions**

1. Please state how long have you been working in biopharmaceutical industry and how long have you been in your present job?
2. Please briefly describe your role in the company you are working at.
3. Please briefly explain the company's supply chain cycle.
4. Is the phrase “supply chain risk management” familiar for you? (Yes / No) Could you illustrate it in a few lines?

### **Part 2. Discussion of supply chain risk**

5. Do you agree that nowadays Iranian biopharmaceutical companies are operating in a changing and uncertain environment? (Yes / No) Why?
6. Please, outline your understanding of the frequently occurring risks in biopharmaceutical supply chain. what are the main risks?
7. What are the sources of risk in a supply chain? Could you name them out? Do you consider them as external risks (suppliers, regulatory bodies) or you think they are internal risks.
8. Do you face various risks dealing with suppliers or customers from abroad?
9. Would you describe the risks in manufacturing, those that may not be mentioned in systematic review study results? Things like regulatory, financial, logistics, demand, macro factors, etc.
  - The risks in regulatory:
  - The risks in financial:
  - The risks in logistics:
  - The risks in demand:
  - The risks in macro factors:
10. What are the main challenges in addressing the above issues?

### **To Close the Interview**

11. Is there anything furthermore that you would like to be added to this study?