

Research Question and hypothesis
Developed by Dr. El Sayed Mahmoud

I have noticed students formulate research question as a statement. I'd like to clarify the differences among research question, hypothesis and thesis statement. Comparing research question and hypothesis is more meaningful than comparing any of them to the research thesis because the first two show the same thing. However, I will compare the three because I want you to see the big pictures of the thesis.

	Research question	Hypothesis	Thesis statement
The purpose is	to analyze and investigate a topic by collecting and analyzing data.	To predict research outcomes then support or negate the prediction by collecting and analyzing data	To combine a research question (or hypothesis) and answer into a well written statement (1-3 sentences)
It shows	how researcher will approach the research process	how researcher will approach the research process	The results of research process
It could be written in	Thesis proposal and thesis	Thesis proposal and thesis	Thesis only
We use it when	your research more investigatory and will require that you gather information and break down outcomes before deriving any conclusions	sufficiently great information already exists on the topic selected to allow the prediction to be made	Your research has been conducted. data has been collected and analyzed to support the hypothesis
It is formulated as	Question , it must ends with ?	Statement (1-3 sentences)	Statement (1-3) sentences
It contains	topic+ factors+ population	Topic+factors+population+ expected outcome	Topic+factors+population+the research results

Research Question and hypothesis
Developed by Dr. El Sayed Mahmoud

The inception document requires a research question. Some examples are shown below. You can use these questions as templates to develop yours. You need first to select the appropriate question type for your research then you have to determine the items of the research question in your subject which are the topic, variables and population. The last step is to formulate your question using the appropriate verbs to your topic, variables and population.

Three types of research questions (the following examples have been presented in PROG34104) you can refer to your team project text and review the definition of each type:

1) The descriptive question sample :

How many papers in the past three CLOUD proceedings investigated mobile cloud computing including relevant topics and how these numbers changed over time?

Question analysis (components)

Topic: mobile cloud computing

factors or variables: number of cloud proceedings and publication time, population: cloud computing publications)

2) The comparative question sample

What are the differences in attributes towards mobile cloud computing between online gaming and online banking?

Question analysis (components)

Topic: mobile cloud computing

factors or variables: attributes,
population: online gaming and online banking products

3) The relationship question sample

What is the relationship between number of students registered in cloud computing courses at Sheridan and number of cloud computing job ads from 2014 to 2017?

Question analysis (components)

Topic: cloud computing courses

factors or variables: number of students registered and number of cloud jobs
population: cloud computing students and cloud computing jobs