

# DATCB/565 Competency 2 Assessment and Rubric

**Course Title:** Data Analysis and Business Analytics

**Competency Assessment Title:** Competency 2 Assessment

## Assignment Directions

Your organization is evaluating the quality of its call center operations. One of the most important metrics in a call center is Time in Queue (TiQ), which is the time a customer has to wait before he/she is serviced by a Customer Service Representative (CSR). If a customer has to wait for too long, he/she is more likely to get discouraged and hang up. Furthermore, customers who have to wait too long in the queue typically report a negative overall experience with the call. You've conducted an exhaustive literature review and found that the average TiQ in your industry is 2.5 minutes (150 seconds).

Another important metric is Service Time (ST), also known as Handle Time, which is the time a CSR spends servicing the customer. CSR's with more experience and deeper knowledge tend to resolve customer calls faster. Companies can improve average ST by providing more training to their CSR's or even by channeling calls according to area of expertise. Last month your company had an average ST of approximately 3.5 minutes (210 seconds). In an effort to improve this metric, the company has implemented a new protocol that channels calls to CSR's based on area of expertise. The new protocol (PE) is being tested side-by-side with the traditional (PT) protocol.

**Download** the [Call Center Waiting Time](#) database.

Each row in the database corresponds to a different call. Column variables are as follows.

- *ProtocolType*: indicates protocol type, either PT or PE
- *QueueTime*: Time in Queue, in seconds
- *ServiceTime*: Service Time, in seconds

**Perform** a test of hypothesis to determine whether the average TiQ is lower than the industry standard of 2.5 minutes (150 seconds). Use a significance level  $\alpha=0.05$ .

**Evaluate** if the company should allocate more resources to improve its average TiQ.

**Perform** a test of hypothesis to determine whether the average ST with service protocol PE is lower than with the PT protocol. Use a significance level  $\alpha=0.05$ .

**Assess** if the new protocol served its purpose. (Hint: This should be a test of means for 2 independent groups).

**Write** a 175-word summary of your conclusions.

## Competency Assessment Rubric

Assignment/Performance Criteria	Mastery 100%	Meets Expectations 85%	Not Met 0%
1. Hypothesis testing TiQ (weight 50%)	Thoroughly evaluated if the company should allocate more resources to improve its average TiQ using accurate hypothesis testing results	Partially evaluated if the company should allocate more resources to improve its average TiQ using hypothesis testing results with some errors	Narrowly evaluated if the company should allocate more resources to improve its average TiQ using hypothesis testing results or did not submit an evaluation if the company should allocate more resources to improve its average TiQ
2. Hypothesis testing PT protocol (weight 50%)	Thoroughly assessed if new protocol served its purpose based on an accurate test of hypothesis to determine whether the average ST with service protocol PE is lower than with the PT protocol	Partially assessed if new protocol served its purpose based on a test of hypothesis with few errors to determine whether the average ST with service protocol PE is lower than with the PT protocol	Narrowly assessed if new protocol served its purpose based on a test of hypothesis to determine whether the average ST with service protocol PE is lower than with the PT protocol or did not submit an assessment of new protocol served its purpose