

# OFM3\_TASK\_1\_CLUSTERING\_TECHNIQUES

October 15, 2021

## OFM3 — OFM3 TASK 1: CLUSTERING TECHNIQUES Ryan L. Buchanan

Student ID: 001826691

Masters Data Analytics (12/01/2020)

Program Mentor: Dan Estes

385-432-9281 (MST)

rbuch49@wgu.edu

**Scenario 1** One of the most critical factors in customer relationship management that directly affects a company's long-term profitability is understanding its customers. When a company can better understand its customer characteristics, it is better able to target products and marketing campaigns for customers, resulting in better profits for the company in the long term.

You are an analyst for a telecommunications company that wants to better understand the characteristics of its customers. You have been asked to perform a market basket analysis to analyze customer data to identify key associations of your customer purchases, ultimately allowing better business and strategic decision-making.

### Part I: Research Question

**A1. Proposal of Question:** Which principal variables of your customers demonstrate that they are at high risk of churn? And, therefore, which customers will churn? In other words, can we better understand our customers and identify patterns unique to customers who churn using unsupervised learning data mining? This question will be answered using the K-means clustering technique.

**2. Define one goal of the data analysis. Ensure that your goal is reasonable within the scope of the scenario and is represented in the available data.**

**A2. Defined Goal:** Stakeholders in the company will benefit by knowing, with some measure of confidence, which customers are at highest risk of churn because this will provide weight for decisions in marketing improved services to customers with these characteristics and past user experiences. The goal of this data analysis is to present numerical values to company stakeholders to help them better understand their customers.

### Part II: Technique Justification