

A Monthly Budget for a Human Trafficking Shelter

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1 About the Activity

- Course: Quantitative Reasoning
- Partner Disciplines: Social Work, Nursing, and Business
- Pedagogical Approach: Case Study
- Required Technology: Excel, or any other spreadsheet program. Microsoft Word, or any other word processing program.

2 Institutional and Course Contexts

- Type/size of institution: Regional comprehensive state university, primarily undergraduate, with about 13,000 students.
- Size of Class: 25
- Characteristics of Students: Students in business, nursing, and social work who are mostly under-prepared mathematically and experience mathematics anxiety.
- Mathematical Content: Linear functions.
- Purpose/Goal of the Activity: Note the role and assumption of linearity in budgeting, and the importance of budgeting when supporting victims of human trafficking.
- After and Before: This activity comes at the end of a chapter on linear functions and before a chapter on exponential functions. Some use this activity in lieu of an exam.
- Other Prerequisites: Programming formulas in spreadsheets. The ability to use absolute, relative, and mixed cell references would reduce the work students need to do, and reinforce the value of general models.

- Inspiration for the Activity: Human trafficking is a particular problem in Michigan, where Ferris State University is located. Faculty from social work and hospitality management have held conferences on campus about human trafficking, and it is a topic of concern to many students.

3 Partner Discipline Background

Human Trafficking is a form of modern day slavery and includes the buying and selling of people for profit. The International Labor Organization estimates that forced labor and human trafficking is a \$150 billion industry worldwide, affecting an estimated 20.9 million people. The Federal Bureau of Investigation (FBI) believes that human trafficking is the third largest criminal activity in the world. Selling human beings is a lucrative business because unlike other products, humans can be sold again and again. This international crisis is one that many do not see because they do not know what to look for. It is also difficult to quantify due to underreporting, as well as many variations in laws and prosecutions. There has been a recent paradigm shift in the United States from viewing a person as a prostitute or as a “pimp” to now understanding that these same people are victims and perpetrators of sex trafficking, respectively.

Human trafficking is a global epidemic that often goes unseen. It does not just happen to people from other countries or in the movies. It is not just a law enforcement issue or a social work issue. We may all interface with someone who is a trafficker or a victim - in hospitals, in restaurants, hotels, rest stops, sporting events etc. We all must be educated so we know what to look for and how to intervene. It may one day save someone’s life.

4 Implementation Plan

- Formal Learning Objectives
Prepare and justify a monthly budget for a shelter under the assumption that the number of guests grows at a constant monthly rate.
- Materials and Supplementary Documents Students will need the handout, access to a spreadsheet program and the document HumanTrafficking.xlsx, and access to a word processor. Additionally, a reference for the use of mixed cell references may be helpful (MixedCellRefs.docx).
- Time Required
This case study typically takes two fifty-minute class periods: one to complete the spreadsheet, and another to write up the recommendation.
- Implementation Recommendations
The preparation questions are to be completed before the activity takes place in class. Responses can either be handwritten, typed, or submitted through our learning management system.

When we work the activity, we typically allow students to work on their own in class and circulate to answer questions. At Ferris, most students have their own laptops that they bring to class. The spreadsheets are available on our learning management system, and their spreadsheets and written justification are submitted through the learning management system. As students get into the case study, it is fairly common for a few students to huddle together with or without the instructor to work out some of the mathematical modeling.

- Alternative Solutions
There are a couple of ways one could model each of the line items. One could either have Excel calculate the number of guests each month first, and then calculate the line items, or one could directly include the rate of change and the initial number of guests in the line item calculation.
- Common Errors and Questions
Students often have trouble noting that the line items depend on the number of guests and the number of guest is the quantity that grows linearly. They tend to leave out one or more factors in their model. But they are also quick to note that the results they get are unreasonable and then ask for help. In this case, they can be guided by working through one or two examples with “hand calculations.”

Students are also hesitant to use mixed cell references, even when they have been taught. We don’t force them, but once they are done we will show them how this kind of programming could have saved them some labor.

- Tips to Handle Controversial Issues (if applicable)
N/A

5 Additional Information

Students are impressed that something that to them appears abstract, such as linear functions (or $y = mx + b$), can be used to support victims of human trafficking. In an end of the semester reflection, one student noted that they learned how to “use math to help our neighbors when they are in trouble.”

This activity could be adapted to address any kind of shelter, from domestic violence to homeless. It could be followed-up with a visit to a local shelter, a conversation with the treasurer at the shelter, and even some volunteer time.