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BBA Quantitative Skills: Assessing the Prerequisites

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Introduction

- Quantitative skills are essential for successful completion of the finance component of the Bachelor of Business Administration (BBA) program.
- Preliminary assessment indicates that Haworth College of Business students may lack prerequisite algebra skills.
- Non-cognitive factors, such as attitudes toward math, appear to impact math performance.
- This study assesses the quantitative skills of BBA students, identifying areas of greatest concern, and provides recommendations for corrective action.



Methods

Data was collected in three parts:

- On the first day of class (FIN 3100) participants completed the short Attitudes Toward Mathematics Inventory (ATMI) scale and five open-ended questions related to math (see handout).
- After a short break, participants completed a 10 question math quiz covering BBA prerequisite skills.
- WMU Office of Institutional Research extracted academic and demographic data for HCoB students.

Preliminary Results

- The sample includes 164 undergraduates, which demonstrate significantly greater quantitative skill than the average Haworth College of Business student (i.e., ACT math, GPA, math prerequisites).
- Nevertheless, these participants scored poorly on the FIN 3100 prerequisite quantitative assessment ($M_{correct} = 2.8$, $SD = 1.8$).

Presented to Students	Solutions	Finance Skills Assessed	% Correct
1. $Y = A + B - X$	$X = A + B - Y$	OCF = EBIT + DEP – Taxes	83%
3. $(Y + A) = (Y + B) (Y + X)$	$X = \frac{(Y + A)}{(Y + B)} - Y$	$[(1 + R) = (1 + r) (1 + h)]$	23%
8. $Y = \frac{1}{A} \sum_{i=1}^A B_i$ where $A = 2$, $B_1 = A$, $B_2 = X$	$X = 2Y - 2$	$[R_{arithmetic} = \frac{1}{N} \sum_{i=1}^N r_i]$	5%

Determinants

$$Q_i = ACT_i + \sum_{j=1}^N Grades_{i,j} + \sum_{j=1}^N Time_{i,j} + \sum_{k=1}^N Demographics_{i,j} + \sum_{h=1}^N ATMI_{i,h} + \varepsilon_i$$

- Math ACT and attitude towards math both show a significant positive relationship with performance.
- Open-ended responses involving “work” words show positive correlation with performance, “money” words are negatively correlated.
- Participants exhibit stronger quantitative skills than the average HCoB student, yet are substantially underprepared for the quantitative requirements of finance.
- Underdeveloped math skills are a systematic issue requiring an institutional response.

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