THE UNIVERSITY OF THE WEST INDIES
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(FROM LEFT TO RIGHT) The Main Administration Building, Mona;
The Main Administration Building, St. Augustine;
The Main Administration Building, Cave Hill;
The Open Campus, St. Lucia.

Predictors of Degree Performance at the University of the West Indies

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Overview

- A Brief Introduction to the UWI
- Context for the Degree Performance Study
- Predictors of final GPA earned

About The UWI

- **Largest** and most **longstanding** university in the English-speaking Caribbean

- **4 campuses** serving **17 countries** of the English speaking Caribbean

- 1 of only 2 **regional** universities in the world

Current Context for the Study

Current Environment of the UWI

- Total University enrolment increased by 68% from 2003/04 to 2013/14.
- Introduction of GATE.
- Change from academically exclusive institution to an academically diverse institution.
- More students entering with lower matriculation requirements (Qualifying CXC (CSEC)/GCE O'Levels/BGCSE passes only).

Study Objectives

- Determine whether students who enter the UWI with **lower level qualifications** (i.e. CXC (CSEC)/GCE/BGCSE passes only), perform at different levels than students who entered with **normal matriculation requirements** (A-Level, CAPE or Associate degrees).

- Prior educational attainment on degree performance (i.e. entrance scores and type of matriculation).

- Other demographic predictors of degree performance.

Previous Studies

Entrance Scores
Weak but Positive correlation between A- Level grades and degree earned.
(Bligh et al., 1980; Sear, 1983; Bourner & Hamed, 1987)

Type of Entry Qualifications
Minimal differences in the level of degree earned by those who matriculated with traditional qualifications in comparison to those who entered with non-standard qualifications.
(Bourner & Hamed 1987)

Discipline
Recent data from Higher Education Statistics Agency (HESA) suggested a difference in performance levels across disciplines. For the period 2013/14, between 62% to 64% of graduates in the fields of architecture, agriculture and education earned good degrees (i.e. first-class and upper-second class degrees); around 65% of engineering students graduated with good degrees while 80% of languages and historical studies and philosophy students graduated with the same distinction.

Previous Studies Cont.

Sex

Early research conducted by Rudd (1984) found that more males earned first class degree qualifications in comparison to females. In contrast, an investigation by Smith (2004) revealed that 65% of female students earned first class degrees in comparison to 35% of males. Similarly, research conducted by Cheesman et al. (2006) at the UWI Mona campus also found that females were more likely to earn honour degrees upon graduation.

Age

Research conducted by Richardson and Woodley (2003) and Smith and Naylor (2001) suggested any differences in performance by mature students were discipline specific and affected by the degree standards for specific disciplines. Richardson and Woodley (2003) found an interaction effect between age and subject of study. Persons aged 21 years and younger outperformed older peers in the fields of social studies, law, creative arts and combined degrees while those in the 41 -50 age group attained more good degrees in the languages.

Student Status / Mode of Study

More full-time students earn first and upper second class degrees.
HESA https://www.hesa.ac.uk/free-statistics

Study Hypotheses

It was hypothesized that:

Prior educational attainment
- Entrance scores and type of entry qualifications

Demographic variables
- Sex, Age

Institutional variables
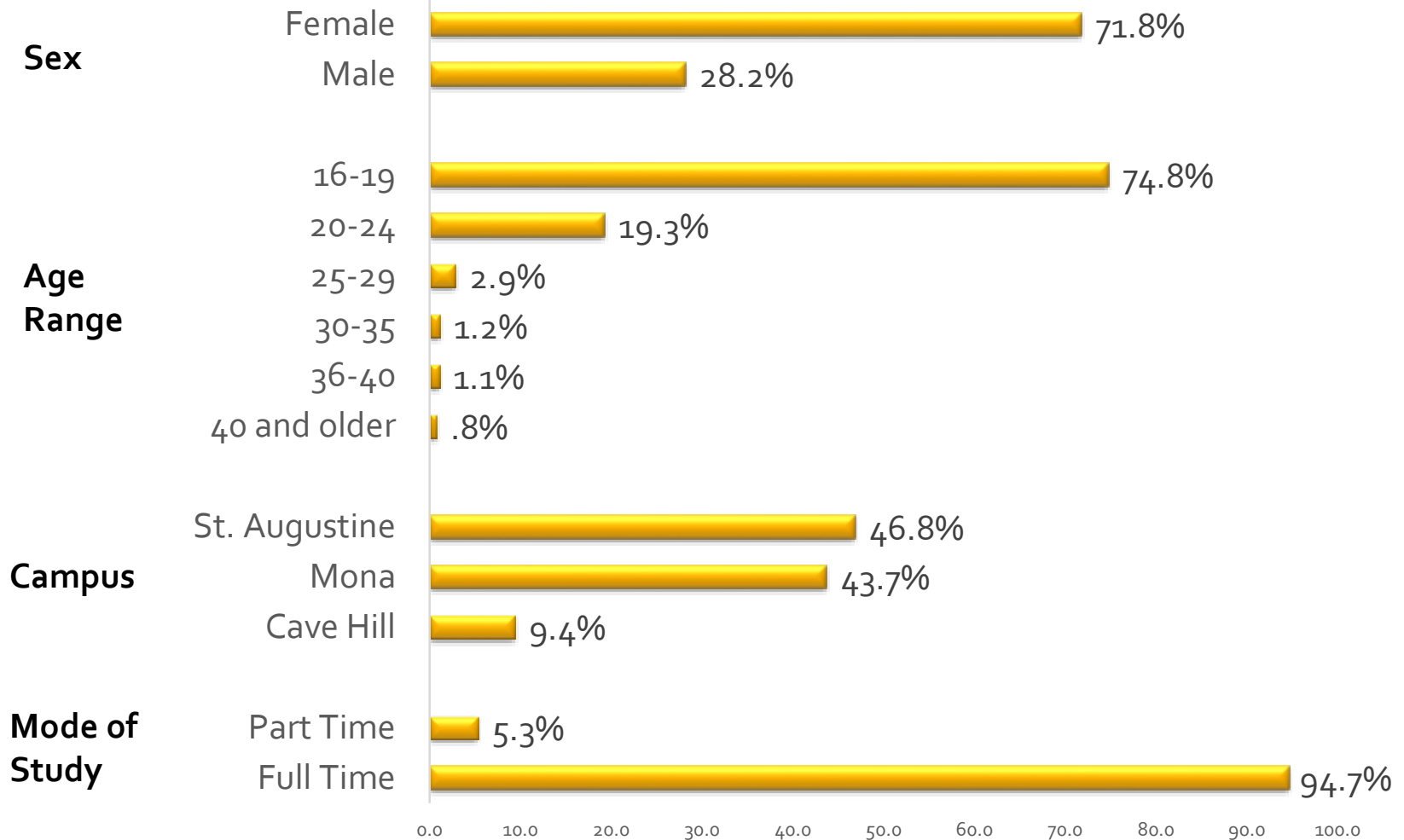- Discipline and mode of study and campus (i.e. full-time or part-time)

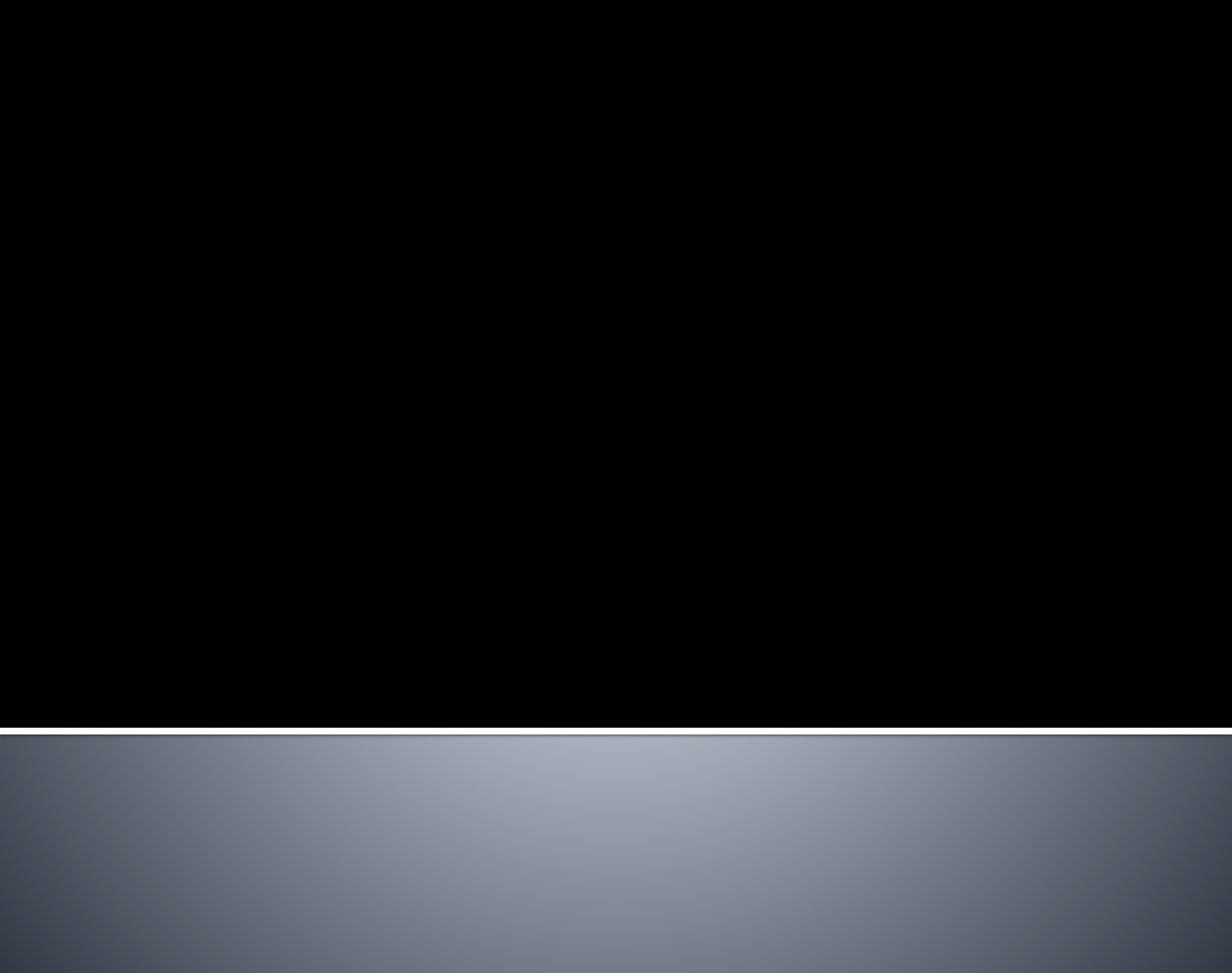would contribute unique variance in predicting final GPA.

- It was also hypothesized that students who entered with lower level qualifications would not perform as well as students who fulfilled normal matriculation requirements

Methodology: Cohort

- Data on the 2007/8 cohort of undergraduate students was extracted from the University SIS.

- Only entries for students who graduated on time at the end of the 2010/11 academic year were included in the analysis.

- Total of 2758 cases (from and incoming cohort of > 20,000)

Sample Characteristics

Sex
- Female 71.8%
- Male 28.2%

Age Range
- 16-19 74.8%
- 20-24 19.3%
- 25-29 2.9%
- 30-35 1.2%
- 36-40 1.1%
- 40 and older .8%

Campus
- St. Augustine 46.8%
- Mona 43.7%
- Cave Hill 9.4%

Mode of Study
- Part Time 5.3%
- Full Time 94.7%

0.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 100.0

Methodology: Measures

- One-way between groups ANOVA

- A four stage hierarchical multiple regression was conducted with final GPA earned as the dependent variable

Methodology: Variables

GPAs used as the dependent variable

Quality of Student Intake (QSI) score calculated based on scores attained on the CAPE or GCE examinations (range 0 to 25)

Type of entry qualifications classed in two categories:
- **normal matriculation** (Qualifying A-Level passes and associate degrees or equivalent)
- **lower matriculation** (Qualifying CXC, CSEC/GCE O'Level/BGCSE passes only, and other qualifications).

For the ANOVA the QSI score and Age were converted to categorical variables.

ANOVA Analysis

Results: ANOVA

Variables	df	F	p	Effect Size (η^2)
QSI Score	3	47.67	.000	.049*
Entry Qualifications	3	6.307	.000	.007
Sex	1	9.471	.002	.003
Age Group	5	5.211	.000	.009
Campus	2	5.804	.003	.004
Discipline	6	40.51	.000	.081*
Mode of Study	1	.781	.38	.000

* Medium effect size

ANOVA Results Cont.

- QSI Score

Each QSI grouping (0-5, 6-10, 11-15, 16-20 and 20-25 differed significantly from each other. Results suggested that GPA increased as QSI Score increased.

- Type of Entry Qualifications

Those with Normal Qualifications differed significantly from those with Lower qualifications. However, those with lower entry qualifications had a higher average final GPAs.

- Sex

Females graduated with higher average GPAs

ANOVA Results Cont.

- **Age**

25-29 age group higher average GPAs than those in the 16-19, 20-24 and 30-35 age groups.

30-35 age group had lower mean GPAs than those in the 36-40 and 40 and older age groups.

- **Campus**

Mona Campus higher mean GPA compared to the St. Augustine campus.

- **Discipline**

Medical Sciences students differed significantly than all other disciplines and they had the highest average GPA.

Hierachical Regression Analysis

Results: Correlation Matrix of Variables

Variable	1	2	3	4	5	6	8	9
GPA	---							
QSI Score	.240*	---						
Qual. Type	.069*	-.324*	---					
Sex	.059*	-.049*	.010	---				
Age	.035	-.277*	.349*	-.018	---			
Campus	-.038*	.282*	-.053*	-.040*	.069*	---		
Discipline	-.056*	.213*	-.010	-.130*	-.079*	.386*	---	
Mode of Study	-.017	-.245*	.280*	-.016	.384*	-.027	-.091*	---

*$p < .05$

Results: Hierarchical Regression

Variable	B	SE (B)	β	ΔR²
Step 1				.068***
QSI Score	.051	.004	.261	
Step 2				.036***
QSI Score	.061	.004	.308	
Qualification Type	.713	.075	.195	
Step 3				.009***
QSI Score	.065	.004	.328	
Qualification Type	.705	.075	.193	
Sex	.109	.030	.072	
Age	.036	.011	.068	
Step 4				.026***
QSI Score	.076	.004	.386	
Qualification Type	.693	.075	.190	
Sex	.088	.030	.058	
Age	.038	.011	.073	
Campus	-.126	.024	-.121	
Discipline	-.031	.008	-.084	

Note. Total $F_{(6, 2226)}$ for Step 4 = 60.28*** Adjusted R^2 = .137 ***$p < .001$

Summary

- The results of the statistical analyses indicate that prior academic achievement (measured by QSI entrance scores) was the "strongest" predictor of final GPA and the results show that GPA increases as entrance scores increases .

- Qualification type was the second "strongest" predictor in the model, persons who entered with lower matriculation requirements had slightly higher final GPAs in comparison to those who entered the University with normal matriculation requirements.

Limitations

- High Performing Cohort
- Available data from SIS
- Graduated on time

Future Research

- Comprehensive analysis of all enrolled students in a cohort
- Investigate the influence of other social, institutional, affective variables