Conducting Comparative Analysis of Peers

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University of Hawaii – West Oahu

WASC ARC Conference, April 22-25, 2015 Oakland, CA
Presentation Outline

• What are peers and why examine them?

• Relevant previous research

• UH West Oahu example
  – Research Question
  – Methodology
  – Results

• Lessons Learned
What are Peer Institutions?

- Peer – similar role, scope, mission

- Other types of comparison groups
  - Competitor – students, faculty, finances
  - Aspirational – At UH, we call these “benchmark” institutions; those to emulate
  - Predetermined
    - Natural – athletic conference, region (WAC)
    - Traditional – historical (Ivy)
    - Jurisdictional – political or legal jurisdiction (state lines)
    - Classification – national reporting (Carnegie)

- Teeter and Brinkman (2003)
Why Have Peer Institutions?

- **Strategic Planning**
  - Inform policy
  - Accreditation/ Program Review
  - Performance Metrics

- **Benchmarking**
  - Faculty compensation
  - Teaching loads
  - Tuition schedules
  - Budget alignment
  - Used by other institutions for performance comparison
  - Surveys supply peer lists to prospective students and parents to compare cost and graduation rates
Relevant Previous Research

Who are our peers now?

• Reminder: Peer = similar role, scope, & mission.

Current Peers:

- California State University – Monterey Bay
- Eastern Oregon University
- Great Basin College
- Texas A&M University - Texarkana
- The Evergreen State College
- University of Washington – Bothell Campus
- University of Washington - Tacoma
## Problems with Current Peer List

~ 13 years old (circa 2002); UHWO still upper 2 yr at that time

<table>
<thead>
<tr>
<th></th>
<th>Total Enrollment</th>
<th>% Total Enrollment Men</th>
<th>% Total Enrollment White</th>
</tr>
</thead>
<tbody>
<tr>
<td>UHWO</td>
<td>2361</td>
<td>58</td>
<td>11</td>
</tr>
<tr>
<td>Current Peer AVG*</td>
<td>3821 (1842, 5732)</td>
<td>42.6 (35, 53)</td>
<td>24.2 (8, 56)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>12-Month Semester Credits Taken</th>
<th>Number of Students Receiving Bachelors</th>
<th>Graduation Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>UHWO</td>
<td>77,086</td>
<td>349</td>
<td>100%</td>
</tr>
<tr>
<td>Current Peer AVG*</td>
<td>185,065 (77,086, 604,956)</td>
<td>726 (42, 1215)</td>
<td>11.5 (4, 35)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>% FTFT Freshman Receiving Any Financial Aid</th>
<th>Total Core Revenues</th>
<th>Postsecondary Teacher's Instructional FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>UHWO</td>
<td>51</td>
<td>41.5M</td>
<td>74</td>
</tr>
<tr>
<td>Current Peer AVG*</td>
<td>78.3 (61, 95)</td>
<td>66.2M (28.4M, 121.3M)</td>
<td>257 (90, 569)</td>
</tr>
</tbody>
</table>

* includes UHWO
Research Question

What are the 10 (or n) most similar institutions to UH West Oahu?
Selecting Peers

The Peer Selection Process Continuum

Data ↔ Judgment

IPEDS
Selecting Peers

Data

1. Graduation Rates
2. Retention Rates
3. Finance (Expenditures)
4. SSH per I-Faculty
5. # of Degrees
6. # Students in Distance Ed
7. # Students in Business Majors

College Strategic Plan
Choosing a Methodology

- Statistical clustering is the most commonly used quantitative methodology in peer selection.
Public, Research I, 4-Yr Example

\[ F(x) = \text{Retention/ On-Time Graduation Rates} \]
\[ F(y) = \text{Doctoral Degree Output/ Enrollment} \]

\( n = 64 \)

Hierarchical Cluster Analysis good for data like this.
Community Colleges Example

\[ F(y) = \text{Associates Degree Output/Enrollment} \]

\[ F(x) = \text{Retention/ On-time Graduation Rates} \]

\( n = 345 \text{ similarly sized CCs} \)

Two-step Cluster Analysis better for data like this.
Baccalaureate/Masters Colleges Example

F(y) = Bachelors Degree Output/Enrollment

F(x) = Retention/On-time Graduation Rates

n = 115 similarly sized colleges

Two-step Cluster Analysis better for data like this.
Data Selection

# Public 4 Year Schools in IPEDS.................................>700
Bachelors & Master Carnegie Classification...............139
Institutional Size: 1,000 – 4,999............................ 115

Final = 115 Institutions

Data Elements

Core Expenses Total per Completion (FY 13)
Graduation Rate Within 4, 5, & 6 Years Total (2013)
First-Time Full-time Freshmen Retention Rate (Fall 13)
12-month Student Semester Hours Taken per Instructional Faculty (AY 13)
# of Bachelor Degrees Awarded (FY 13)
% of Bachelor Degrees Awarded in CIP Code 52 (FY 13)
% of Undergraduates Enrolled in Some But Not All Distance Ed Courses (Fall 13)
Two-step Cluster Analysis in SPSS

Model Summary

<table>
<thead>
<tr>
<th>Algorithm</th>
<th>TwoStep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs</td>
<td>9</td>
</tr>
<tr>
<td>Clusters</td>
<td>11</td>
</tr>
</tbody>
</table>

Goodness of fit is moderate-to-good
Cluster Distribution

Cluster Sizes

UHWO’s Cluster Group
n = 10

<table>
<thead>
<tr>
<th>Size of Smallest Cluster</th>
<th>4 (1%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of Largest Cluster</td>
<td>12 (12.1%)</td>
</tr>
<tr>
<td>Ratio of Sizes: Largest Cluster to Smallest Cluster</td>
<td>3.00</td>
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</table>
Variable Importance
# Cluster Comparison

<table>
<thead>
<tr>
<th>Cluster</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td><strong>Description</strong></td>
<td>UHWO Cluster</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>12.1% (12)</td>
<td>12.1% (12)</td>
<td>11.1% (11)</td>
<td>10.1% (10)</td>
<td>9.1% (9)</td>
</tr>
<tr>
<td>Inputs</td>
<td>DRVC2013 Graduation rate - Bachelor degree within 4 years, total</td>
<td>DRVC2013 Graduation rate - Bachelor degree within 4 years, total</td>
<td>DRVC2013 Graduation rate - Bachelor degree within 4 years, total</td>
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</tr>
<tr>
<td></td>
<td>CoreExpenses per Completion</td>
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<td>CoreExpenses per Completion</td>
<td>CoreExpenses per Completion</td>
<td>CoreExpenses per Completion</td>
</tr>
<tr>
<td></td>
<td>DRVC2013 Bachelor's degree</td>
<td>DRVC2013 Bachelor's degree</td>
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<td>DRVC2013 Bachelor's degree</td>
<td>DRVC2013 Bachelor's degree</td>
</tr>
<tr>
<td></td>
<td>DRVEF2013 Percent of undergraduate students enrolled in some but not all instructional courses</td>
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</tr>
<tr>
<td></td>
<td>Percentage Bachelors Degree Awarded in CIP 52</td>
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<td>Percentage Bachelors Degree Awarded in CIP 52</td>
<td>Percentage Bachelors Degree Awarded in CIP 52</td>
</tr>
<tr>
<td>Indicator</td>
<td>Value</td>
<td></td>
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<tr>
<td>-------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
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<td></td>
</tr>
<tr>
<td>Graduation rate - Bachelor degree within 5 years, total</td>
<td><img src="image1" alt="Box Plot" /></td>
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</tr>
<tr>
<td>Graduation rate - Bachelor degree within 3 years, total</td>
<td><img src="image2" alt="Box Plot" /></td>
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</tr>
<tr>
<td>Graduation rate - Bachelor degree within 6 years, total</td>
<td><img src="image3" alt="Box Plot" /></td>
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<td></td>
</tr>
<tr>
<td>Full-time retention rate, 2013</td>
<td><img src="image4" alt="Box Plot" /></td>
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</tr>
<tr>
<td>CoreExpensesperCompletion</td>
<td><img src="image5" alt="Box Plot" /></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td><img src="image6" alt="Box Plot" /></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent of undergraduate students enrolled in some but not all distance education courses</td>
<td><img src="image7" alt="Box Plot" /></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>SSHperInstructionalFaculty</td>
<td><img src="image8" alt="Box Plot" /></td>
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<td></td>
</tr>
<tr>
<td>Percentage Bachelor Degree Awarded in CIP 52</td>
<td><img src="image9" alt="Box Plot" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cluster Group #3 is the proposed peer group and includes:

1. Dickinson State University
2. Georgia Southwestern State University
3. Indiana University - East
4. Lewis-Clark State College
5. Louisiana State University - Shreveport
6. Minot State University
7. Montana State University - Billings
8. Peru State College
9. Southern Arkansas University Main Campus
10. University of Hawaii - West Oahu
## New Peer Group Details

<table>
<thead>
<tr>
<th></th>
<th>UH WEST OAHU</th>
<th>OLD PEER AVERAGE</th>
<th>*NEW PEER AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Enrollment</td>
<td>2,661</td>
<td>3,821</td>
<td>3,162</td>
</tr>
<tr>
<td>12-month UG SSH per I-Faculty FTE</td>
<td>528</td>
<td>688</td>
<td>508</td>
</tr>
<tr>
<td>Bachelors Awarded</td>
<td>349</td>
<td>726</td>
<td>465</td>
</tr>
<tr>
<td>4 year Grad Rate</td>
<td>10</td>
<td>25</td>
<td>13</td>
</tr>
<tr>
<td>5 year Grad Rate</td>
<td>25</td>
<td>40</td>
<td>26</td>
</tr>
<tr>
<td>6 year Grad Rate</td>
<td>25</td>
<td>45</td>
<td>31</td>
</tr>
<tr>
<td>Retention Rate</td>
<td>68</td>
<td>70</td>
<td>63</td>
</tr>
<tr>
<td>Core Expenses (in millions)</td>
<td>$26</td>
<td>$55</td>
<td>$35</td>
</tr>
<tr>
<td>Core Expenses per Completion (in thousands)</td>
<td>$76</td>
<td>$84</td>
<td>$74</td>
</tr>
</tbody>
</table>

*preliminary
Takeaways

New peer list is…

• Recognizant of UHWO’s enrollment growth projections/aspirations.
• Aligned with campus targets for degree awards and graduation rates.
• More closely aligned with campus’s financial scope.
• Incorporates UHWO’s campus-based and distance-learning missions.
Questions?

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