Factors Affecting Job Satisfaction of Radiologic Sciences Faculty: Implications for Recruitment and Retention

Presented By
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Speaker Disclosure

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  - Research for Dissertation at UTK
  - No funding for the research
  - Honorarium for today’s presentation

- **Nonfinancial**
  - Survey instrument used was developed by Paul Spector and is listed in Reference list
  - All images are credited on the relevant slide
Objectives

Based on 2015 Nationwide Study of Radiologic Sciences Faculty:

- Discuss current and future status of radiologic sciences faculty demand based on demographics
- Evaluate job satisfaction of current radiologic sciences faculty
- Discuss recommendations for the future
Introduction

In 2006, AEIRS commissioned a workforce committee to:

- Investigate the scope of a faculty workforce shortage in the radiologic sciences based on demographics
  - 75% of educators surveyed were older than 45
  - Looming educator shortage BUT still plenty of time to recruit educators into the field

- Evaluate the perceptions of radiologic sciences faculty job satisfaction
  - Overall faculty were satisfied with their jobs
    - Most satisfied with job security and collaboration with colleagues
    - Least satisfied with salary
Recommendation from AEIRS

• Based on the threat of an educator shortage – a follow-up study into take another look at the status was recommended to re-evaluate the:
  • Demographics
  • Job Satisfaction
10 Years Later – Where Are We Now?

- How has our profession been affected by Great Recession of 2008?

- Do we still have a looming educator shortage based on demographics OR have we recruited faculty and changed the demographics?

- Are we still satisfied in our jobs/positions?

  - What about the future?
2015 Nationwide Study

Research Questions

• What are the demographic characteristics (age, gender, race, years of teaching, primary job role, demographic region, salary) of radiologic sciences faculty in Joint Review Committee on Education in Radiologic Technology (JRCERT) accredited programs?

• To what extent are radiologic sciences faculty in JRCERT accredited programs satisfied with their jobs in terms of (a) colleague interactions (colleagues/coworkers, leadership/supervision); and (b) extrinsic motivators (pay, promotion, supervision, benefits, contingent rewards, operating procedures, nature of work, communication).
Significance of the Study

• We must be mindful of the status of our profession in relation to the dynamics of the Imaging profession as a whole:

  • Demand for Imaging Services
  • Demand for Technologists/Graduates
  • Demand for Educators

Image courtesy of patimes.com
Current Demand for Imaging Services

Nearly **400 million** (400,000,000) medical imaging procedures are performed annually in the United States...

and, that number is expected to grow.

What Is Driving the Demand?

Aging Population

- 78 million baby boomers began turning 65 years old in 2011
- Utilize imaging twice that of those younger
What is Driving the Demand?
Aging Population

- 78 million baby boomers began turning 65 years old in 2011
  - Age 65 and older will increase 50% by 2020

- Utilize imaging twice that of those 24 – 64 and 3 times as much as those 20 – 44.

Source: http://www.ahraonline.org/Articles/2014/Education_and_Career_Progression_of_Imaging_Administrators.aspx?WebsiteKey=
Affordable Care Act (ACA)

- Much larger pool of insured patients that have access to imaging services
- ~16.9 Million newly insured (as of Feb. 2016)
- Utilization is higher than those previously insured.

Image Courtesy of https://www.google.com/search?q=obama+care+images&oq=obama+care+image&aqs=chrome.0.0j69i57j0j69i60l2.4008j0j9&sourceid=chrome&ie=UTF-8
• Greater utilization of medical services of newly enrolled compared to those already insured.
  • Inpatient admissions = 84% higher
  • Outpatient visits = 48% higher
  • ER visits = 79% higher
  • Filled Prescriptions = 35% higher
  • More care for chronic diseases
    • Diabetes, CAD, Hypertension, Hep C, depression, and HIV

More Drivers

**Defensive Medicine**
- Potential litigation protection
- Higher utilization of CT/MRI particularly

**Patient Sophistication**
- Savvy patient population due to information that is readily available

**Tailored Patient Care**
- Early disease detection and diagnosis, therapy planning, treatment monitoring and follow-up of disease progression

**Increased Efficiency and Portability**
- Making advanced imaging available to patients in remote or previously inaccessible areas
380,000 Technologist Jobs in U.S.

Technologist Age Demographics

- 63% over 40
- 28% over 50
- 5% over 60

Age Demographics

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>9%</td>
</tr>
<tr>
<td>31-40</td>
<td>28%</td>
</tr>
<tr>
<td>41-50</td>
<td>35%</td>
</tr>
<tr>
<td>51-60</td>
<td>23%</td>
</tr>
<tr>
<td>61-70</td>
<td>5%</td>
</tr>
</tbody>
</table>

Technologist Demand Projections

- 50,000 additional technologists will be needed in next 8 years

National Center for Health Workforce Analysis (2015) reports that demand will grow by:
- 24% for radiologic technologists
- 24% for nuclear medicine technologists
- 21% for diagnostic medical sonographers

Note: Based on demand drivers
Does not account for retirements

Connection to Education

Without educators, programs will close; Without programs, students will not be trained; Without graduates, there will be fewer technologists (Gilman, 2005).

Source: http://source.jhu.edu/sebin/d/k/ConnectionLogo.jpg
Current Program Status

- 971 of all programs are Recognized by ARRT
- 750 JRCERT Accredited Programs
- ~18,000 Students Entered Programs in 2015
- 98% of Programs Likely to Continue to Operate
Without Educators……

• Focus
  • Retention
  • Recruitment

• Not just an Imaging Sciences Education Issue
  • All of healthcare education are facing the same issues
The Value of Retention

• Faculty members are an institution’s intellectual capital.
  • This intellectual capital is an institution’s primary and only appreciable asset.

• Retiring faculty will be taking with them – and the profession will be losing:
  • Expert teaching in the discipline
  • Insight and Dedication
  • Advise
  • Committee Service
  • Research
  • Mentoring
  • Wisdom earned only via years of experience
Job Satisfaction and Retention

Recognizing that job satisfaction and retention are significant and meeting the demand for radiologic sciences faculty is imperative, factors influencing job satisfaction and avenues that positively impact job satisfaction among radiologic sciences faculty need to be known (Gappa & Austin, 2007).
Job Satisfaction

- Definition
- Influences
- Theoretical Framework
- Measurement
- Survey
Job Satisfaction Defined

• While the definitions vary, a commonality among them seems to be that job satisfaction is an emotional (affective) response to work.

• Job satisfaction reflects positive work-related emotions and job dissatisfaction reflects negative emotions (Green, 2000).
What Job Satisfaction Influences

- Retention
- Engagement/Productivity
- Absenteeism
- Turnover
- Overall Individual Well-Being
Engagement and Work Productivity

- Lost productivity of unsatisfied disengaged employees costs the U.S economy $370 BILLION annually.

- Employees are not be engaged if not satisfied with job

Absenteism

- Inverse Relationship:
  - When satisfaction is high, absenteeism is low. When satisfaction is low, absenteeism is high.

- JS will be more evident from frequency of absences rather than from the total number of days absent.
  - Those unsatisfied will be absent more times and for shorter amounts of time rather than for several days concurrently.
Turnover

• 2 million Americans quit their job every month due to lack of job satisfaction

• Top 4 reasons:
  • Don’t like boss
  • Lack of empowerment
  • Internal politics
  • Lack of recognition
### Direct and Indirect Costs of Turnover

<table>
<thead>
<tr>
<th>DIRECT COSTS</th>
<th>INDIRECT COSTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Termination</td>
<td>Decreased Quality of Care</td>
</tr>
<tr>
<td>Replacement</td>
<td>Reduced Morale</td>
</tr>
<tr>
<td>Training</td>
<td>Lost Productivity</td>
</tr>
<tr>
<td>Vacancy Cost (OT, Temporary Staffing)</td>
<td>Increased Workload</td>
</tr>
<tr>
<td></td>
<td>Cost of new Employee</td>
</tr>
<tr>
<td></td>
<td>Historical Knowledge</td>
</tr>
</tbody>
</table>

Overall Individual Well-being

- Satisfied employees:
  - Have higher self esteem
  - Tend to be more optimistic
  - Have increased motivation
  - Have faster thought processes
  - Miss less work due to illness
  - Have higher complete recovery statistics
Theoretical Framework

- Maslow (1954) and Herzberg (1966)
  - Job satisfaction: **needs** that must be met or values that must be present in work in order for workers to be **satisfied**.
Job Satisfaction Measurement

Two Ways:

- Overall Job Satisfaction
- Facet-Specific
Job Satisfaction Survey Instruments

- **Developed by Paul Spector (1994)**
  - Used for human service, nonprofit, and public organizations
  - Could be used for other sectors as well

- **9 Facets/36 Items (4 in each Facet)/Total Score**
  - Pay
  - Promotion
  - Supervision
  - Benefits
  - Contingent Rewards
  - Operating Procedures
  - Co-workers
  - Nature of Work
  - Communication
### JOB SATISFACTION SURVEY
Paul E. Spector       University of South Florida
Copyright Paul E. Spector 1994, All rights reserved.

**PLEASE CIRCLE THE ONE NUMBER FOR EACH QUESTION THAT COMES CLOSEST TO REFLECTING YOUR OPINION ABOUT IT.**

<table>
<thead>
<tr>
<th></th>
<th>Disagree very much</th>
<th>Disagree moderately</th>
<th>Disagree slightly</th>
<th>Agree slightly</th>
<th>Agree moderately</th>
<th>Agree very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel I am being paid a fair amount for the work I do.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is really too little chance for promotion on my job.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My supervisor is quite competent in doing his/her job.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am not satisfied with the benefits I receive.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When I do a good job, I receive the recognition for it that I should receive.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many of our rules and procedures make doing a good job difficult.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I like the people I work with.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>I sometimes feel my job is meaningless.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Communications seem good within this organization.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raises are too few and far between.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Those who do well on the job stand a fair chance of being promoted.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My supervisor is unfair to me.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The benefits we receive are as good as most other organizations offer.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not feel that the work I do is appreciated.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>My efforts to do a good job are seldom blocked by red tape.</td>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>I find I have to work harder at my job because of the incompetence of people I work with.</td>
<td>1 2 3 4 5 6</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td><strong>44.</strong></td>
<td>In your opinion, what contributes most to the retention of faculty in the radiologic sciences?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>45.</strong></td>
<td>In your opinion, what would contribute most to the recruitment of technologists into academia?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cronbach’s Alpha: Internal Consistency

<table>
<thead>
<tr>
<th>Job Satisfaction Dimensions</th>
<th>Survey Items</th>
<th>Spector</th>
<th>RS Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pay</td>
<td>Q1, Q10, Q19, Q28</td>
<td>.75</td>
<td>.82</td>
</tr>
<tr>
<td>Promotion</td>
<td>Q2, Q11, Q20, Q33</td>
<td>.73</td>
<td>.82</td>
</tr>
<tr>
<td>Supervision</td>
<td>Q3, Q12, Q21, Q30</td>
<td>.82</td>
<td>.88</td>
</tr>
<tr>
<td>Benefits</td>
<td>Q4, Q13, Q22, Q29</td>
<td>.73</td>
<td>.83</td>
</tr>
<tr>
<td>Contingent Rewards</td>
<td>Q5, Q14, Q23, Q32</td>
<td>.76</td>
<td>.85</td>
</tr>
<tr>
<td>Operating Conditions</td>
<td>Q6, Q15, Q24, Q31</td>
<td>.62</td>
<td>.65</td>
</tr>
<tr>
<td>Coworkers</td>
<td>Q7, Q16, Q25, Q34</td>
<td>.60</td>
<td>.79</td>
</tr>
<tr>
<td>Nature of work</td>
<td>Q8, Q17, Q26, Q35</td>
<td>.78</td>
<td>.73</td>
</tr>
<tr>
<td>Communications</td>
<td>Q9, Q18, Q27, Q36</td>
<td>.71</td>
<td>.68</td>
</tr>
</tbody>
</table>

Note. Spector norms based on 2870 sample size (Spector, 1997).
Since no evidence of JSS used on radiologic sciences faculty was found in the literature, a second order confirmatory factor analysis (CFA) was conducted to test the validity of the JSS construct scores.

Model was a reasonable fit for the data (CFI = .83 on 0-1 scale)
No evidence of problems with validity and reliability of the survey instrument
Methodology

• Job Satisfaction Survey to Include Demographic Information was Developed

• Emailed to Faculty in JRCERT Accredited Programs (with valid email addresses)
  • 715 (no sampling technique)
    • ~ 39% Return Rate

• Analyzed using SPSS (v.22)
Educators Compared to Technologists

Educators

Age Distribution

- 25-35: 6%
- 36-45: 19%
- 46-55: 36%
- 56-65: 35%
- >65: 4%

Technologists

Age Distribution

- 18-25: 4.20%
- 26-39: 31%
- 40-55: 42%
- 56-65: 21%
- >65: 1.90%

Radiologic Technologists Wage and Salary Survey, (ASRT, 2016)
Years in Position

**Instructor and Program Directors**

- 1-5: 8.4%
- 6-10: 17.5%
- 11-15: 21.1%
- More than 15: 52.4%

**Staff and Chief Technologists**

- 1-5: 20%
- 6-10: 17%
- 11-15: 11%
- More than 15: 52%
Results of the Study

• Demographics
  • Geographical Region
  • Gender
  • Race
  • Age
  • Years of Teaching
  • Primary Job Role
  • Salary Range
Geographic Location of the Respondents

Region 1 (AZ, CA, HI, NV)

Region 2 (AK, ID, MT, OR, UT, WA)

Region 3 (CO, NM, OK, TX, WY)

Region 4 (IL, MN, ND, SD, WI)

Region 5 (AR, IA, KS, NE, MO)

Region 6 (IN, KY, MI, OH, WV)

Region 7 (AL, FL, GA, TN, LA, MS, PR)

Region 8 (DC, MD, NC, NJ, SC, VA)

Region 9 (CT, DE, MA, ME, NH, NY, PA, RI, VT)
Gender

Female: 75%
Male: 25%
Race

- White: 95%
- Black: 2%
- Hispanic: 1%
- Other: 2%
Age Distribution

- 25-35: 6%
- 36-45: 19%
- 46-55: 36%
- 56-65: 35%
- >65: 4%
Years of Teaching

- 1-5: 8.4%
- 6-10: 17.5%
- 11-15: 21.1%
- More than 15: 52.4%
Years of Teaching Experience by Age

Years of Teaching Experience 1-5 years
Years of Teaching Experience 6-10 years
Years of Teaching Experience 11-15 years
Years of Teaching Experience >15 years
Primary Job Role

Program Director: 77%
Clinical Coordinator: 9%
Didactic/Clinical Faculty: 14%
Job Role vs. Age

- **25-35**: 
  - Program Director: Low
  - Clinical Coordinator: Very Low
  - Didactic Faculty: Low

- **36-45**: 
  - Program Director: Low
  - Clinical Coordinator: Medium
  - Didactic Faculty: Low

- **46-55**: 
  - Program Director: High
  - Clinical Coordinator: Low
  - Didactic Faculty: Medium

- **56-65**: 
  - Program Director: Very High
  - Clinical Coordinator: Low
  - Didactic Faculty: Low

- **>65**: 
  - Program Director: Medium
  - Clinical Coordinator: Low
  - Didactic Faculty: Low

Legend:
- **Blue**: Program Director
- **Red**: Clinical Coordinator
- **Green**: Didactic Faculty
Salary Ranges

0%  2%  2%  6%  43%  47%

20,000-$30,000  $31,000-$40,000  $41,000-$50,000  $51,000-$75,000  More than $75,000
Results of the Study

• **Job Satisfaction**
  • Total Job Satisfaction Compared to U.S. Norms
  • Facet Specific Job Satisfaction Results
  • Job Satisfaction Predictors
Results of the Study

• **Analysis**
  • Total Job Satisfaction Results
  • Total Job Satisfaction Compared to US Norms
  • Predictors of RS Job Satisfaction
  • Facet Specific Job Satisfaction Results
  • Role Demographics Play on JS Facets
Total Job Satisfaction

• Satisfied with 8 of the 9 facets

• 144-216 on JSS = Satisfied
  • RS Faculty = 149.6

• RS faculty overall job satisfaction ranked equivalently with the U.S. Norms.
## Job Satisfaction Survey (JSS) Scores Comparison

<table>
<thead>
<tr>
<th>Facet</th>
<th>Norms for U.S.</th>
<th>Radiologic Sciences Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Supervision</td>
<td>18.3</td>
<td>2.1</td>
</tr>
<tr>
<td>Coworkers</td>
<td>17.6</td>
<td>1.9</td>
</tr>
<tr>
<td>Nature of Work</td>
<td>19.2</td>
<td>2.0</td>
</tr>
<tr>
<td>Communication</td>
<td>15.1</td>
<td>2.2</td>
</tr>
<tr>
<td>Benefits</td>
<td>14.4</td>
<td>2.6</td>
</tr>
<tr>
<td>Contingent Rewards</td>
<td>13.7</td>
<td>2.3</td>
</tr>
<tr>
<td>Promotion</td>
<td>12.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Salary</td>
<td>12.6</td>
<td>2.5</td>
</tr>
<tr>
<td>Operating Conditions</td>
<td>13.4</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>136.3</td>
<td>19.9</td>
</tr>
</tbody>
</table>

Note: Adapted from the Paul Spector website: Job Satisfaction Survey Norms at http://shell.cas.usf.edu/~pspector/scales/jssnorms.html.
U.S. Norms Compared to Radiologic Sciences
Supervision

• Ranked highest among JS factors for RS faculty

• Which demographics influence JS with supervision:
  • Faculty Job Role (compared to PDs and CCs)
  • Salary

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Std. Error</th>
<th>β</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Role (Faculty)</td>
<td>1.786</td>
<td>.979</td>
<td>.118</td>
<td>.014*</td>
</tr>
<tr>
<td>Salary (&gt;75K)</td>
<td>1.265</td>
<td>.625</td>
<td>.141</td>
<td>.044*</td>
</tr>
</tbody>
</table>

Note: Dependent Variable: Job Satisfaction (*p = < .05); $R^2 = .081$
Coworkers

• Ranked 2nd among the facets – higher than national average

• Program Directors and Clinical Coordinators had about the same satisfaction with co-workers.

• Faculty however had a much different level of co-worker satisfaction.

<table>
<thead>
<tr>
<th>Job Role (Faculty)</th>
<th>B</th>
<th>Std. Error</th>
<th>β</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Role (Faculty)</td>
<td>2.116</td>
<td>.799</td>
<td>.174</td>
<td>.009*</td>
</tr>
</tbody>
</table>

Note: Dependent Variable: Job Satisfaction (*p = < .05); $R^2 = .077$
Nature of Work

• Ranked 3rd among the facets – about same as national average

<table>
<thead>
<tr>
<th>Regression Analysis Summary for Nature of Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Constant</td>
</tr>
<tr>
<td>Age (&lt;35)</td>
</tr>
<tr>
<td>Age (&gt;55)</td>
</tr>
<tr>
<td>Race (White)</td>
</tr>
<tr>
<td>Race (Black)</td>
</tr>
<tr>
<td>Race (Other)</td>
</tr>
<tr>
<td>YOT (&lt;5)</td>
</tr>
<tr>
<td>YOT (&gt;15)</td>
</tr>
<tr>
<td>Job Role (Director)</td>
</tr>
<tr>
<td>Job Role (Faculty)</td>
</tr>
<tr>
<td>Salary ($20K-$40K)</td>
</tr>
<tr>
<td>Salary (&gt;75K)</td>
</tr>
</tbody>
</table>

Note: Dependent Variable: Job Satisfaction (*p = < .001); $R^2 = .069$
Communication

- Ranked 4th among the facets – significantly higher than the national average

<table>
<thead>
<tr>
<th>Salary (&gt;$75K)</th>
<th>B</th>
<th>Std. Error</th>
<th>β</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.292</td>
<td>.558</td>
<td>.161</td>
<td>.021*</td>
</tr>
</tbody>
</table>

Note: Dependent Variable: Job Satisfaction (*p = < .05); \( R^2 = .081 \)
Benefits

- Benefits was the next highest satisfaction facet.

<table>
<thead>
<tr>
<th>Salary (&gt;75K)</th>
<th>B</th>
<th>Std. Error</th>
<th>β</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.549</td>
<td>.660</td>
<td>.162</td>
<td>.020*</td>
</tr>
</tbody>
</table>

Note: Dependent Variable: Job Satisfaction (*$p = < .05$); $R^2 = .124$
Contingent Rewards

- Job Satisfaction increased with Faculty age > 55
- Job Satisfaction increased for salary > $75K

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>Std. Error</th>
<th>β</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (&gt;55)(Faculty)</td>
<td>7.530</td>
<td>3.783</td>
<td>.192</td>
<td>.048*</td>
</tr>
<tr>
<td>Salary (&gt;$75K)</td>
<td>2.438</td>
<td>.768</td>
<td>.225</td>
<td>.002*</td>
</tr>
</tbody>
</table>

Note: Dependent Variable: Job Satisfaction (*p = < .01); $R^2 = .091$
Promotion

- Ranked 7th among the facets
  - Age >55
  - > 15 years of teaching
  - > salary $75K

<table>
<thead>
<tr>
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<th>Std. Error</th>
<th>β</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (&gt;55)</td>
<td>-10.111</td>
<td>3.853</td>
<td>-.996</td>
<td>.009*</td>
</tr>
<tr>
<td>YOT (&gt;15)</td>
<td>7.815</td>
<td>3.540</td>
<td>.785</td>
<td>.028*</td>
</tr>
<tr>
<td>Salary (&gt;75K)</td>
<td>1.987</td>
<td>.683</td>
<td>.200</td>
<td>.004*</td>
</tr>
</tbody>
</table>

Note: Dependent Variable: Job Satisfaction (*p = <.05); $R^2 = .131$
Salary/Pay

- Ranked next to last on satisfaction rating.
- Is there a SS difference in satisfaction of Pay based on demographics?
  - Job Satisfaction increased for > 15 years of teaching
  - Job Satisfaction for salary > $75K

<table>
<thead>
<tr>
<th></th>
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<th>Std. Error</th>
<th>β</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>YOT (&gt;15)</td>
<td>-3.035</td>
<td>1.377</td>
<td>-.277</td>
<td>.028*</td>
</tr>
<tr>
<td>Salary (&gt;=$75K)</td>
<td>4.203</td>
<td>.702</td>
<td>.384</td>
<td>.000**</td>
</tr>
</tbody>
</table>

Note: Dependent Variable: Job Satisfaction (*p = < .05; **p = < .001)

$R^2 = .220$
Operating Procedures

• Defined as: **How** things are routinely done.

• **Ranked Last and Lowest – Lower than National Average**
  • Age <35
  • Black race
  • < 5 years of teaching
  • Faculty

<table>
<thead>
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<th>Std. Error</th>
<th>β</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (&lt;35)</td>
<td>-1.592</td>
<td>.049</td>
<td>-.190</td>
<td>.000*</td>
</tr>
<tr>
<td>Race (Black)</td>
<td>2.472</td>
<td>.128</td>
<td>.095</td>
<td>.000*</td>
</tr>
<tr>
<td>YOT (&lt;5)</td>
<td>.156</td>
<td>.044</td>
<td>.018</td>
<td>.000*</td>
</tr>
<tr>
<td>Job Role (Faculty)</td>
<td>3.059</td>
<td>.035</td>
<td>.243</td>
<td>.000*</td>
</tr>
</tbody>
</table>

Note: Dependent Variable: Job Satisfaction (*p = < .001); $R^2 = .127$
Predictors of Job Satisfaction of Radiologic Sciences Faculty

- Based on this study the predictors of Job Satisfaction for RS faculty:
  - Those in the Faculty Job Role (not PD or CC)
  - Salary
Two Important Findings of the Study

# 1 Demographic data supports concern of a **looming faculty shortage in the radiologic sciences**

- 75% indicated an age older than 45 and 40% older than 55
  - When they Exit the Profession Will lose:
    - Years of Experience in the Discipline
    - Insight
    - Dedication
    - Experience Advising
    - Committee Service
    - Participation in Research
    - Student Mentorship, and
    - Wisdom to students year after year
Years of Teaching by Age
10 Years From Now

- Years of Teaching Experience 1-5 years
- Years of Teaching Experience 6-10 years
- Years of Teaching Experience 11-15 years
- Years of Teaching Experience >15 years
Two Important Findings of the Study

# 2 Overall RS faculty are satisfied with their jobs

- Job Role and Salary are predictors
- As the majority of future retirees are PDs the job satisfaction of this group should be a focus to retain those incoming to the position (PDs lowest in this study)
- Salary should also be a focus as overall JS increases as salary increases
  - Alternative methods of compensation may warrant attention
Inferences

There is a Looming Faculty Shortage

- Overall RS Faculty is Satisfied
- Job Role and Salary are predictors and need to be investigated further
- Operating Conditions ranked lowest among the JS factors
  - Faculty feel overwhelmed by their workloads (too much work to do, too much paperwork, too much red-tape)
  - Too many working hours
  - They feel underpaid for what they do
- The 9 dimensions in study accounted for only 14% of variation in overall job satisfaction – much opportunity for further research
Recommendations for the Profession

• **Succession Planning**
  - Offer staff and faculty opportunities to advance their own skills and knowledge and assume leadership positions
    - Studies show promotion opportunities have stronger impact than pay

• **Identifying Potential Educators**
  - Findings of this study indicate we need technologists in the pipeline to fill faculty position that will soon be vacated
    - Need to pay attention to the students and technologists who show potential for academia
    - Guest lecture opportunities
    - Adjunct teaching opportunities
Recommendations for the Profession

• **Transitional Mentoring**
  • Better efforts need to be made initially to prepare new healthcare educators through orientation and mentoring.

• **Periodic Surveys**
  • Faculty surveys should be administered periodically to identify areas of satisfaction and dissatisfaction.
    • Celebrate areas of satisfaction
    • Signal change in areas of dissatisfaction
Recommendations for Future Research

• Surveys are structured instruments – much could be gained from a qualitative study using interviews, focus groups, etc.

• This study identified 2 significant predictors of overall JS
  • These areas need to be further studied

• Based on findings of this study, the majority of RS faculty are Baby Boomers – future studies could determine if a difference exists with respect to JS between Baby Boomers and Generations Xers in the Radiologic Sciences.

• The 9 dimensions in study on accounted for only 14% of variation in overall job satisfaction – much opportunity for further research
Faculty Comments

- What contributes most to the retention of educators in the radiologic sciences?

- What would contribute most to the recruitment of technologists into academia?
What Contributes Most to the Retention of Educators in the Radiologic Sciences?

- Love of the job
  - Satisfaction seeing students learn and grow
  - Passion for teaching
  - Learning from the students
  - Desire to promote the profession

- Work schedule
  - Flexible hours
  - Lots of time off work

- Professional development
  - Opportunities to grow and advance professionally
What Would Contribute Most to the Recruitment of Technologists into Academia?

- **Salary** comparable to clinical work
- Easier pathways into education
  - Tuition paid for advanced degrees required
  - Transitional training
- Clearer understanding of how to get into academia
- Opportunities to try it: Adjunct and Guest Lecturing
- Marketing to RTs that show abilities to teach
- Advertising the benefits of academia
Salary Comparisons

**TECHNOLOGISTS**

- **Staff Tech**: $65,387
- **Chief Tech**: $75,512

**EDUCATORS**

- **Instructor**: $65,695
- **Program Director**: $80,258

Radiologic Technologists Wage and Salary Survey, (ASRT, 2016)
Audience Discussion

• How many have been in academia for:
  10 years?
  15 years?
  20 years?
  More than 20 years?

• What got you into academia?

• Why have you remained in academia?

• What in your opinion would contribute most to recruitment of technologists into academia?
REFERENCES

• References are listed at:
  http://trace.tennessee.edu/cgi/viewcontent.cgi?article=4644&context=utk_graddiss

• Additional References:


Acknowledgements

- AEIRS for the opportunity to present
- All of you for today’s participation
- All of you who responded to the survey