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Calculating the Cost of Pilot Turnover

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Estimating Pilot Turnover Costs

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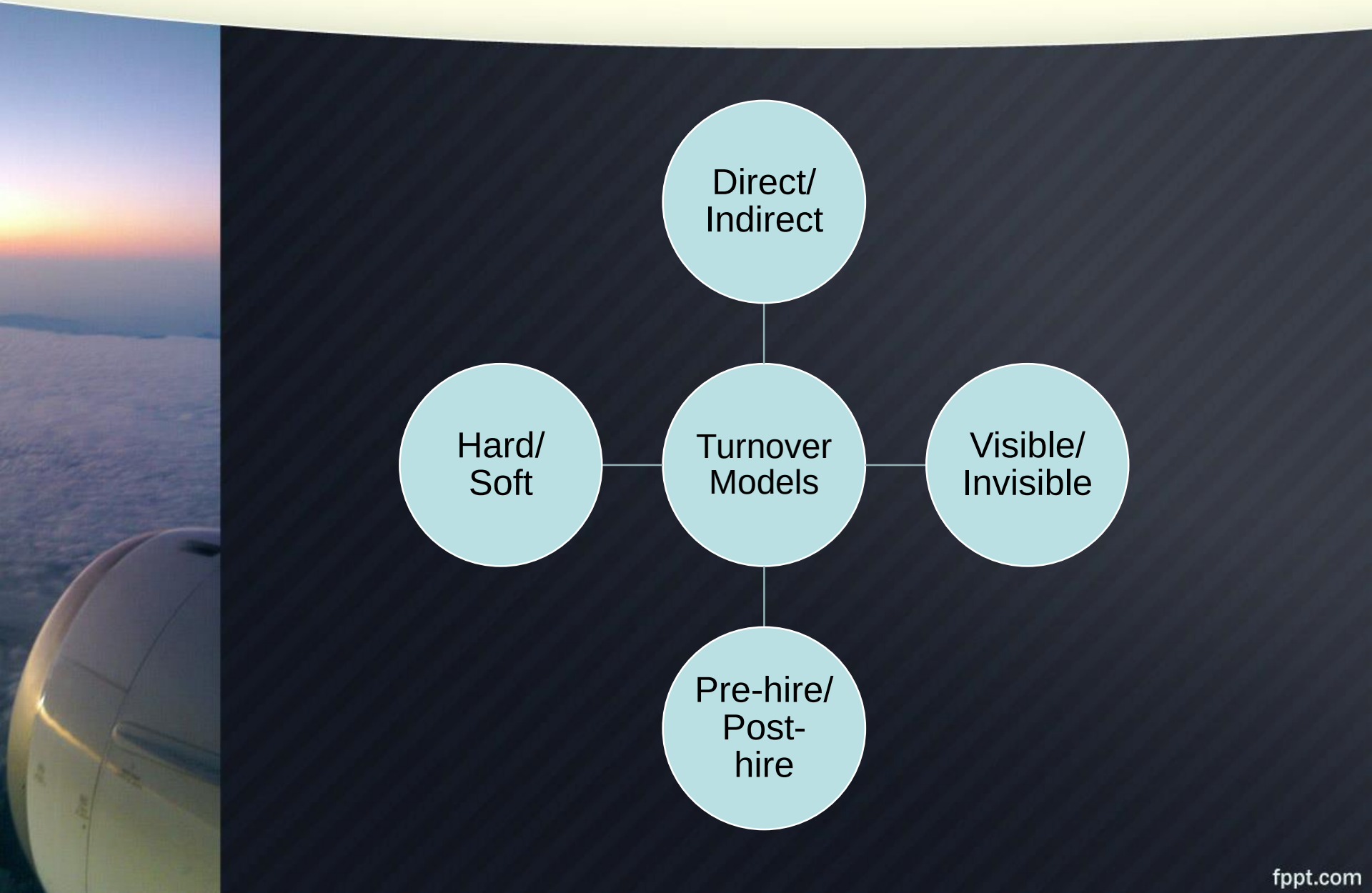
Outline

1. Why study turnover?
2. Turnover facts in our industry
3. Turnover model
4. Method
5. Results

Why is turnover important?

1. Importance of controlling costs
2. Proportion of costs due to labor
3. Difficulty of identifying turnover costs

Assessing the cost of employee turnover



What is turnover and why does it matter?

$$\text{Turnover Rate} = \frac{\text{number of terminations, both voluntary and involuntary, per year}}{\text{average active employees in that year}} \times 100$$

High turnover rates have negative impact on

- Productivity
- Accident rates
- Financial performance

Some is unavoidable or even desirable

Turnover cost per employee in private industry

- $13,966

Bureau of Labor Statistics

- 90-200% of annual salary

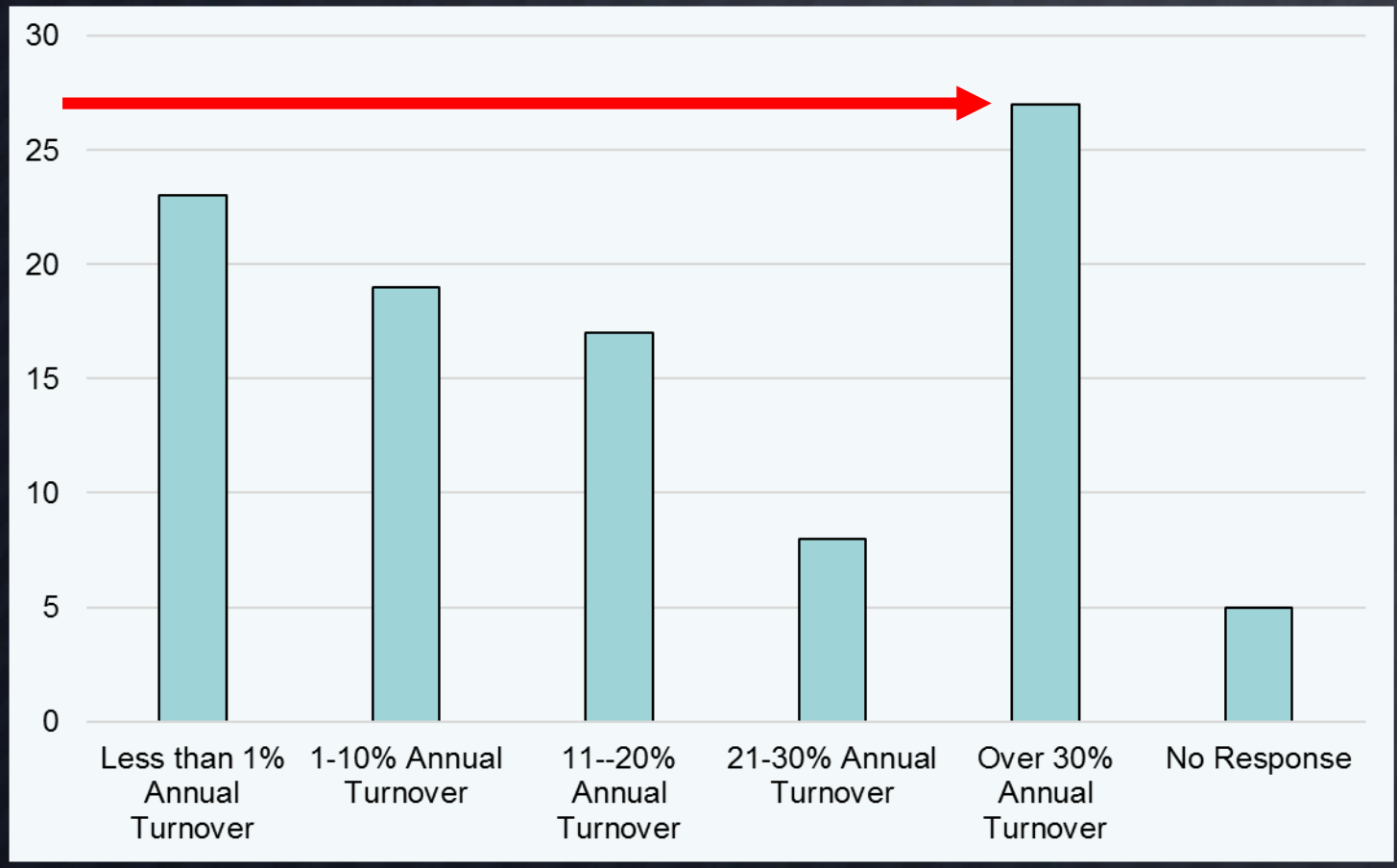
O’Connell & Kung, 2007; Allen, 2008

Turnover rate by Industry

Industry	Average Annual Turnover
Services—accommodation, food and drinking places	35%
Arts, entertainment and recreation	27%
Retail/wholesale trade	22%
All industries	**15%**
High-tech	11%
Government/public—state/local	9%
Association—professional/trade	8%
Utilities	8%

Source: SHRM Human Capital Benchmarking Database (2011)

Percent of companies in each category



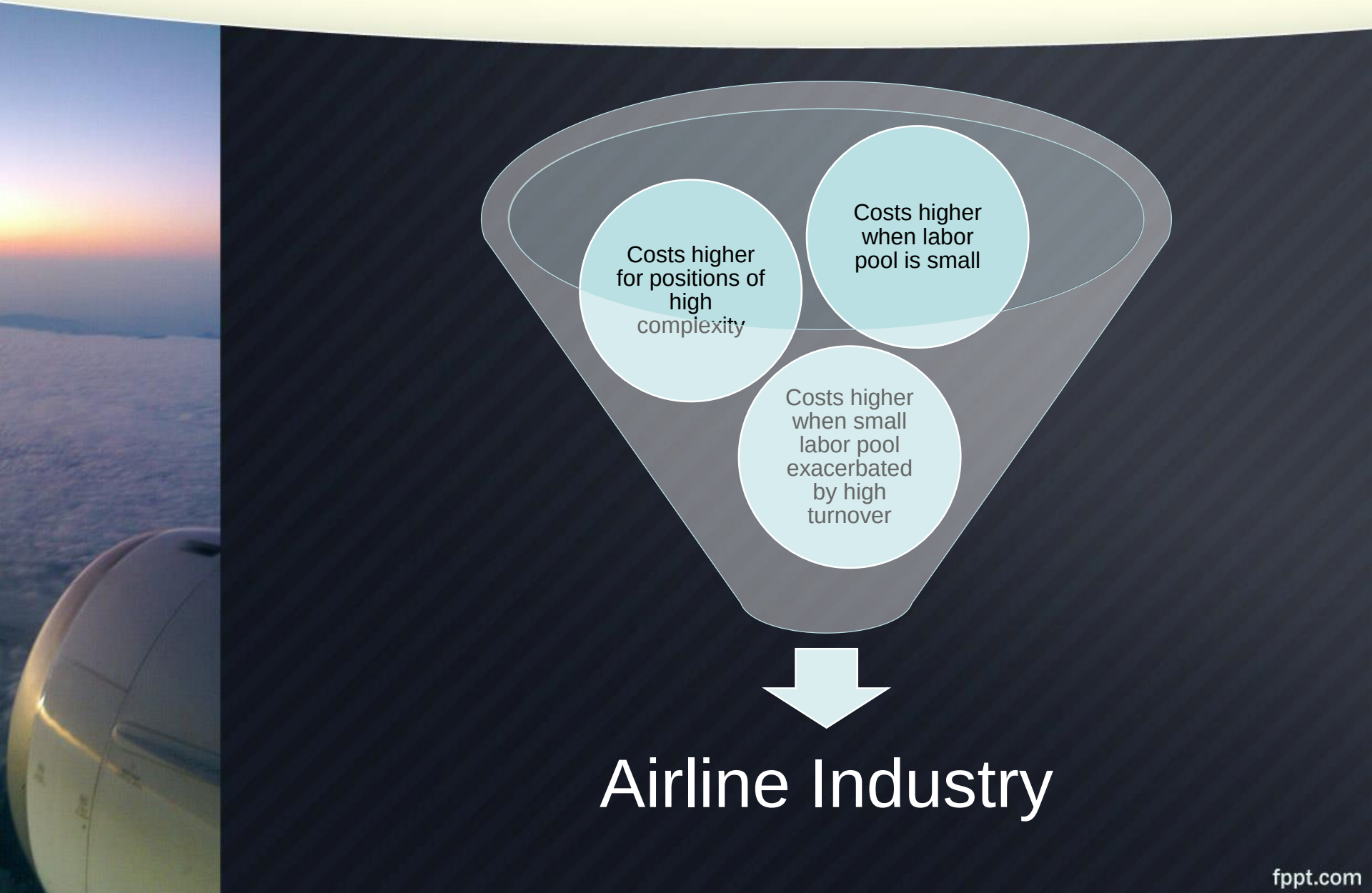
Adapted from “Human Resources Study of Commercial Pilots in Canada” by the Air Transport Association of Canada, 2001.

Turnover rate by operator type

	Less than 1%	1-10%	11-20%	21-30%	Over 30%
Specialty Aerial Work	27.6	15.5	15.5	8.6	32.8
Air Taxi	20.8	18.2	15.6	11.7	33.8
Commuter	5.0	5.0	30.0	10.0	50.0
Airline	0.0	37.5	25.0	0.0	37.5
Corp/Private Employers	34.6	15.4	15.4	11.5	23.1
Government	33.3	33.3	0.0	0.0	33.3
Cargo	10.0	20.0	15.0	5.0	50.0

Adapted from “Human Resources Study of Commercial Pilots in Canada” by the Air Transport Association of Canada, 2001.

Factors affecting total cost of turnover



Antecedents of turnover

Overall Job Satisfaction

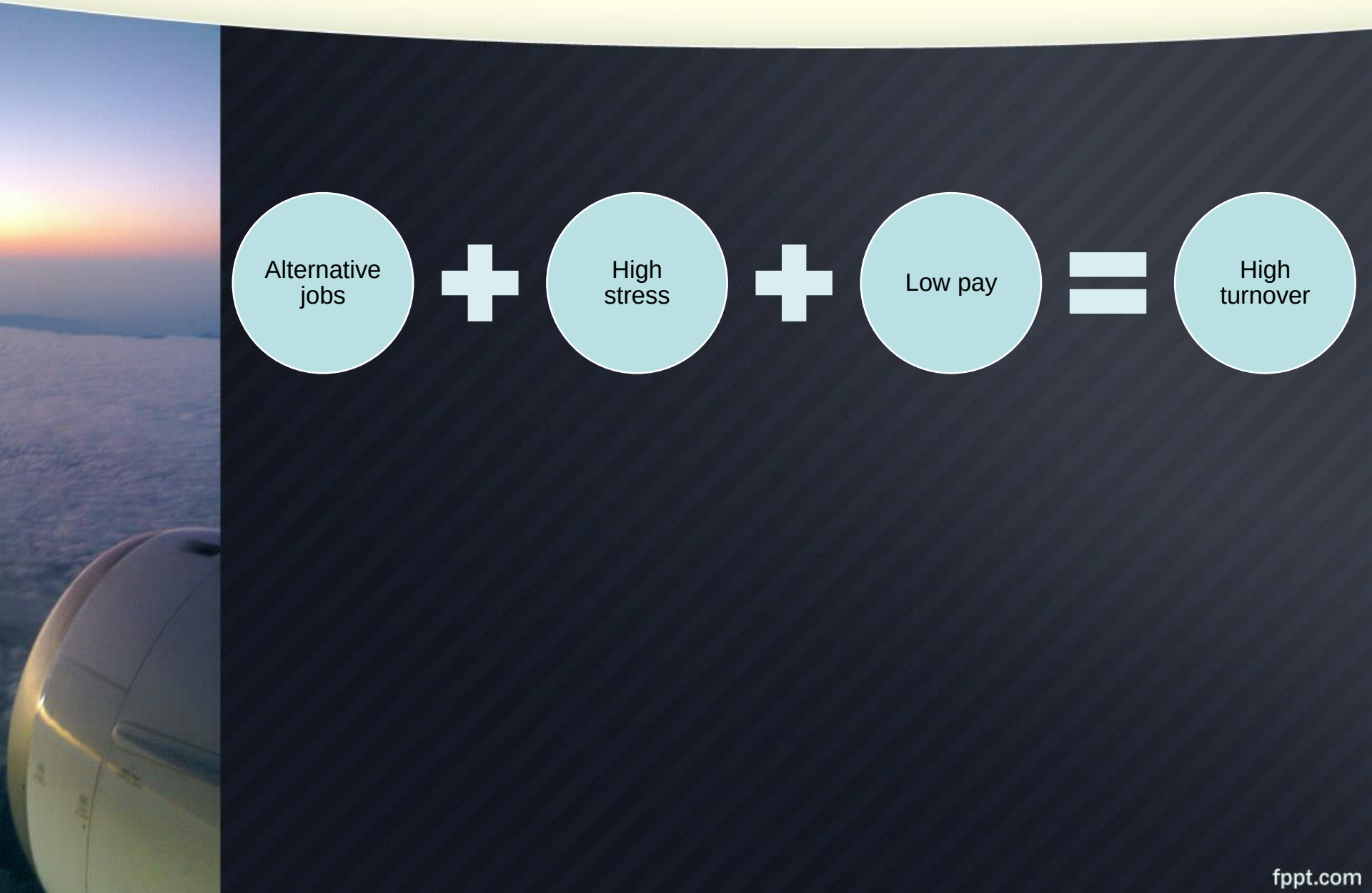
Commitment to the Job

Availability of alternative jobs

Stress

Pay

Part 135



Methodology

- Cost of turnover models combined (Hinkin & Tracey, 2000; Society for Human Resource Management, 2014)
- Consult with VP of Ops for Part 135 cargo operator to determine appropriate analogs
- Apply Part 135 Pilot Model to actual carrier

Part 135 Pilot Model: Major Sections

- Essential data
- Separation costs
- Recruiting costs
- Selection costs
- Hiring and training costs
- Lost productivity costs

Part 135 Pilot Model: Essential data

Wages:

- Average annual salary of pilots
- Annual salary of recruiters
- Annual salary of training staff
- Annual salary of Director of Training
- Hourly wage of instructor pilots
- Hourly wage of simulator instructors
- Hourly pay for new hire

Hourly costs for training:

- Hourly cost of simulator
- Hourly cost of operating actual aircraft for training
- Annual number of pilots who voluntarily quit

Number of employees:

- Total number of pilots employed
- Total number of pilots who left in past calendar year, both voluntary and involuntary

Part 135 Pilot Model: Separation costs

- Pay out of vacation/sick leave

Part 135 Pilot Model: Recruiting costs

- Advertising
- Travel costs to job fairs
- Salary of pilot recruiters

Calculate per capita recruiting costs

Part 135 Pilot Model: Selection costs

- Interviewing by managers other than pilot hiring agents
- Background check
- Drug tests

Calculate per capita selection costs

Part 135 Pilot Model: Hiring and Training costs

Simulator training:

- Simulator time
- Sim Instructor time

In-aircraft training:

- Aircraft time
- Aircraft instructor time
- Manuals and charts for new hire
- Pay for new hire while in training
- Hotel and per diem for instructors and new hires (instructor costs shared between 2 new hires)

Per capita cost of training staff and director

Part 135 Pilot Model: Lost productivity cost

- Interviewing by managers whose primary job is not interviewing
- Instructing by pilots whose primary job is not instructing
- Instructing for non-revenue flights (To account for the fact that instructors flying non-revenue training flights are not available for revenue flights)
- Vacancy cost
  - Flying the line by pilots whose primary job is not flying the line
  - Annual travel costs for substitute pilots
  - Overtime pay for substitute pilots
  - Annual cost of cancellation of flights

Part 135 Pilot Model: Total turnover costs

- **Total turnover cost per pilot: Separation cost + Recruiting cost + Selection cost + Hiring and Training cost + Lost Productivity cost = _____**
- **Total turnover costs: (Total turnover cost per pilot) x (Total number of pilots who left in past calendar year) = _____**

Cost-of-Turnover Worksheet, Part 135 Pilots

Essential data:

Annual salary of recruiters (workers whose full time job is pilot hiring): _____

Annual number of pilots who voluntarily quit: _____

Annual salary of training staff: _____

Annual salary of Director of Training: _____

Hourly wage of instructor pilots: _____

Hourly wage of simulator instructors: _____

Hourly cost of simulator: _____

Hourly cost of operating actual aircraft for training: _____

Hourly pay for new hire: _____

Additional information to calculate voluntary and total turnover rate (optional):

Total number of pilots employed: _____

Total number of pilots who left in past calendar year, both voluntary and involuntary: _____

Average annual salary of pilots: _____

Separation Costs:

- Pay out of vacation/sick leave (average): _____

Recruiting costs:

- Advertising: _____
- Travel costs to job fairs: (cost per fair _____) x (number of fairs per year _____) = _____
- Salary of pilot recruiters: (annual salary _____) x (number of pilot recruiters _____) =

- **Total per capita recruiting costs**: (sum of all recruiting costs) ÷ (total number of pilots who left in past calendar year) = _____

Selection Costs

- Interviewing by managers other than pilot hiring agents: (managers' hourly wage _____) x (hours spent interviewing per candidate _____) = _____
- Background check: _____
- Drug tests: _____
- **Total per capita selection costs:** sum of all selection costs: _____

Hiring and Training Costs

- Simulator time: [(hourly cost of simulator _____) x (hours in sim per new hire_____)] ÷ 2 **if** 2 new hires trained in same sim session = _____
- Sim Instructor time: [(hourly wage of simulator instructor _____) x (hours spent instructing per new hire_____)] ÷ 2 **if** 2 new hires trained in same sim session = _____
- Aircraft time: (hourly cost of aircraft _____) x (hours per new hire_____) = _____
- Aircraft instructor time: (hourly extra wage of aircraft instructor _____) x (hours spent instructing per new hire_____) = _____
- Manuals and charts for new hire: _____
- Pay for new hire while in training: (hourly wage of new hire _____) x (hours spent in training per new hire _____) = _____
- Hotel and per diem for instructors and new hires (instructor costs shared between 2 new hires):
    - Instructor: [(cost per day) x (days of training)] ÷ 2 = _____
    - New Hire: [(cost per day) x (days of training)] = _____

- Per capita cost of training staff and director: _____
    - Per capita cost of salary of training staff: [(Annual salaries _____) x (percentage of time spent on new hire training _____)] ÷ total number of pilots who left in past calendar year _____ = _____ *Note: This was not included for case study, as data was uncertain.
    - Salary of director of training: [(Annual salary _____) x (percentage of time spent on new hire training _____)] ÷ total number of pilots who left in past calendar year _____ = _____
- **Total per capita hiring costs:** (Simulator cost _____) + (simulator instructor time _____) + (aircraft time _____) + (aircraft instructor time _____) + (manuals and charts _____) + (pay for new hire while in training _____) + (Hotel and per diem for instructors and new hires _____) + (per capita cost training staff and director _____)

Lost-Productivity Costs:

- Interviewing by managers whose primary job is not interviewing: (hourly wage of managers _____) x (hours spent interviewing per candidate _____) = _____
- Instructing by pilots whose primary job is not instructing: (hourly wage of pilots _____) x (hours spent instructing per new hire _____) = _____
- Instructing for non-revenue flights (this accounts for the fact that instructors flying non-revenue training flights are not available for revenue flights): (hourly wage of instructor pilots _____) x (hours spent instructing per new hire on non-revenue flights _____) = _____
- Vacancy cost

- Flying the line by pilots whose primary job is not flying the line: (hourly wage _____) x (hours spent flying the line _____) = _____
- Annual travel costs for substitute pilots
  - Plane tickets: _____
  - Hotel costs: _____
  - TDY costs: _____
- Overtime pay for substitute pilots: (hourly incremental overtime pay _____) x (hours of overtime _____) = _____
- Annual cost of cancellation of flights: _____
- **Total vacancy costs:** (sum of vacancy costs) ÷ (annual number of pilots who voluntarily quit) = _____

- **Total lost productivity costs:** sum of interviewing cost, instructing cost, and total vacancy cost: _____

Total turnover cost per pilot: Separation cost + Recruiting cost + Selection cost + Hiring and Training cost + Lost Productivity cost = _____

Total turnover costs: (Total turnover cost per pilot) x (Total number of pilots who left in past calendar year) = _____

Optional:

Voluntary turnover rate: [(Total number of pilots who voluntarily left in past calendar year) ÷ (Average number of pilots employed)] x 100 = _____

Total turnover rate: [(Total number of pilots who left in past calendar year) ÷ (Average number of pilots employed)] x 100 = _____

Results

46% turnover

Separation Costs	Recruiting Costs	Selection Costs	Hiring and Training Costs	Lost Productivity Cost
$770	$1200	$140	$9018	$6277

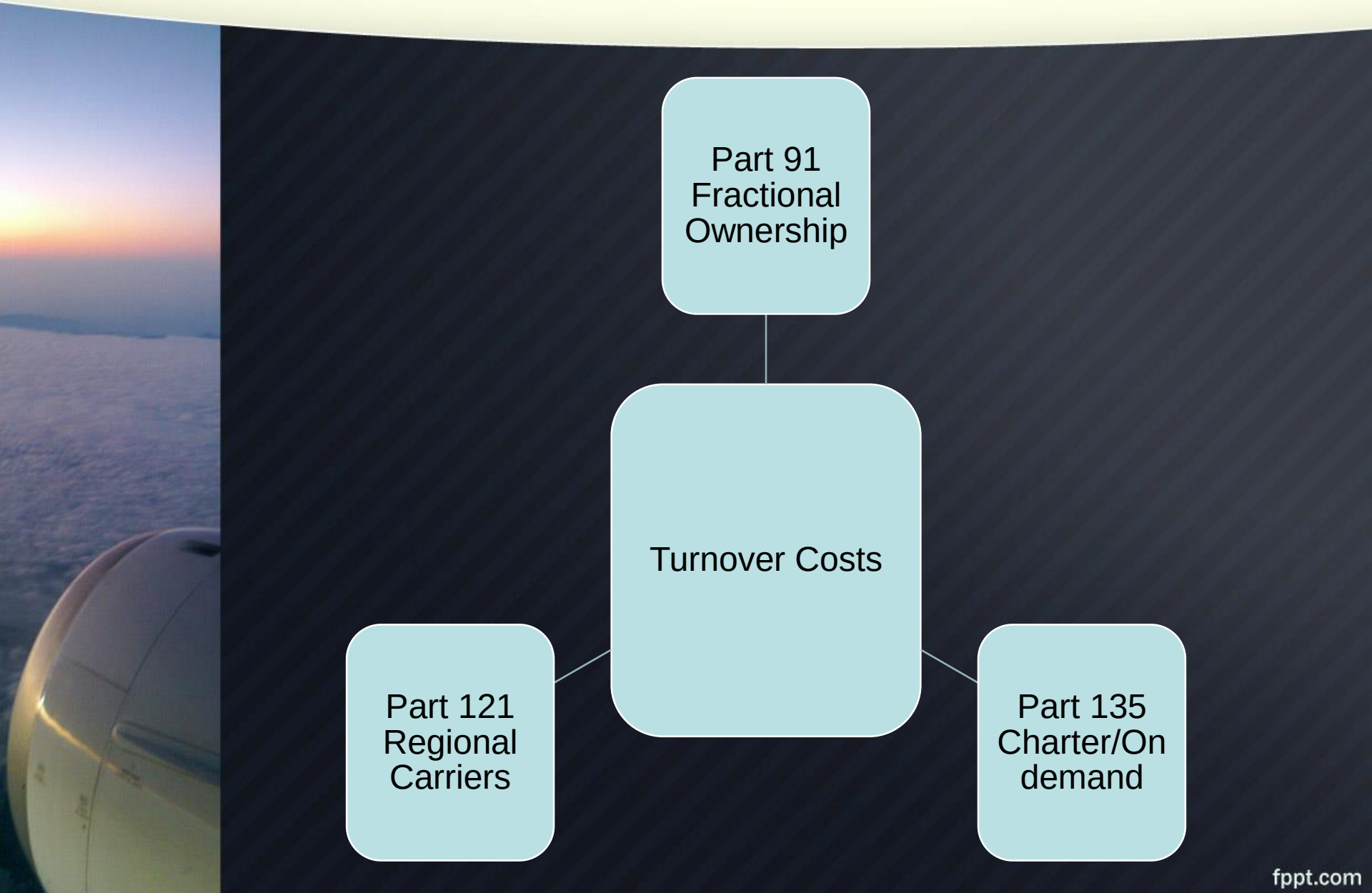
$17,405

43% of average salary of $40,000

Discussion

- Challenges
  - Simulator costs per hour
  - Different training lengths
  - Fixed vs variable costs
- Per capita costs
- Total costs

Future Research



Future Research

- Who is leaving?
- How long do they stay before they leave?
- Why are they leaving?
- Effects or correlates of high turnover?
- Unconventional solutions?

Recommendations from AIAA for aerospace industry

- Encourage young employees to share their views
- Encourage employees' input on improving the work environment
- Create opportunities for mentorship
- Structure pay according to performance and responsibility rather than seniority