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Nurse practice environment and burnout as predictors of safety climate, teamwork and job satisfaction

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Goals and Objectives

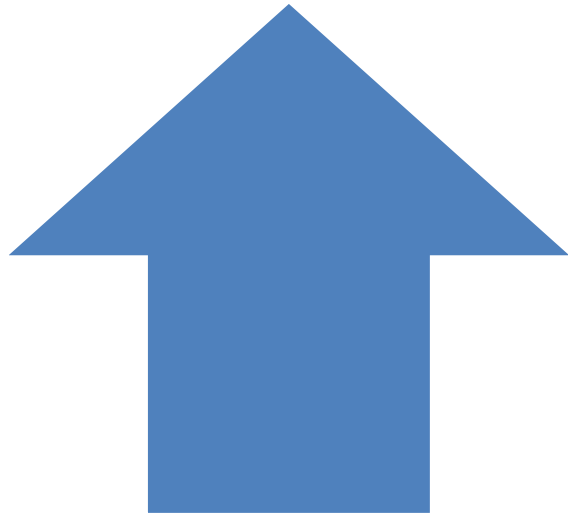
Session Goal:

- To present the results of a study that analyze the effects of nurse practice environment and burnout in the safety climate, teamwork climate and job satisfaction

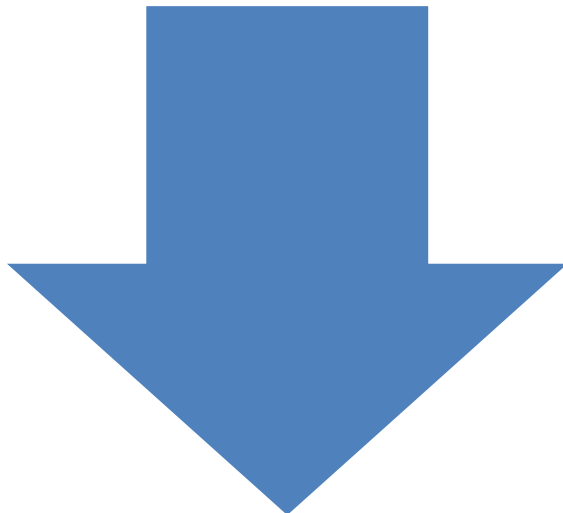
Session Objectives:

- To test the theoretical model of the effect of nursing practice environment and burnout on safety climate, teamwork and job satisfaction
- To have insights to create conditions in the work environment to improve a safety climate, teamwork climate and job satisfaction

POSITIVE WORK ENVIRONMENT



JOB SATISFACTION
QUALITY OF CARE
PATIENT SAFETY



BURNOUT
INTENTION TO LEAVE THE
JOB

Purpose

To analyze the effects of nursing work environment and burnout in the safety climate, teamwork climate and job satisfaction from the perspective of the nursing professionals

Methods

Design: Cross-section survey

Study setting: 3 teaching hospital, São Paulo State, Brazil

Sample: 584 Registered nurses and nursing technicians

- ✓ Inclusion criteria: nurses and nursing technicians involved in direct patient care and time experience \geq three months
- ✓ Exclusion criteria: Nurses with management activities or were absent from the unit, due to vacation or license

Data collection

- Subjects were addressed individually in their jobs, received information about the purpose of the research and those who agreed, signed the consent form

Methods

Data analysis

Structural Equation Model by Partial Least Squares Path Modeling (PLS-PM)

Phase 1: Measuring model

Convergent validity	Average Variance Extracted (AVE)	> 0.50
	Composite reliability	> 0.70
Discriminant validity	Cross loadings Fornell-Larcker criterion	

Phase 2: Structural model

Path coefficient	p-value Confidence interval	
Fit indicators	Pearson determination coefficient (R^2)	2% - small effect 13% - medium effect 26% - large effect
	Predictive validity index (Q^2)	> 0
	Effect size (f^2)	2% - small effect 15% - medium effect 35% - large effect

Nursing Work Index - Revised

Objective: To evaluate the perception of nursing in relation to their work environment.

It contains 15 items, the subscales:

- Autonomy - 5 items, $\alpha = 0.68$
- Control over work environment - 7 items, $\alpha = 0.78$
- Nurse-physician relationships - 3 items, $\alpha = 0.85$

Likert type scale – 1 to 4 points. The lower the score, the higher the presence of positive attributes in the nurse practice environment.

Maslach Burnout Inventory

Objective: To measure the physical and emotional exhaustion of workers in relation to work. It contains 22 statements, divided into three dimensions:

- Emotional exhaustion - 9 items, $\alpha = 0.89$
- Personal accomplishment - 8 items, $\alpha = 0.74$
- Despersonalization - 5 items, $\alpha = 0.64$

Likert type scale with five points: 1 (never); 2 (rarely); 3 (sometimes); 4 (often) and 5(always).

High scores on emotional exhaustion and depersonalization and low scores on personal accomplishment.

Safety Attitudes Questionnaire Short Form 2006

- Teamwork climate – 6 items, $\alpha = 0.70$
- Safety climate – 7 items, $\alpha = 0.68$
- Job satisfaction – 5 items, $\alpha = 0.82$

Five-point Likert scale ranging from 1 (disagree strongly) to 5 (agree strongly)

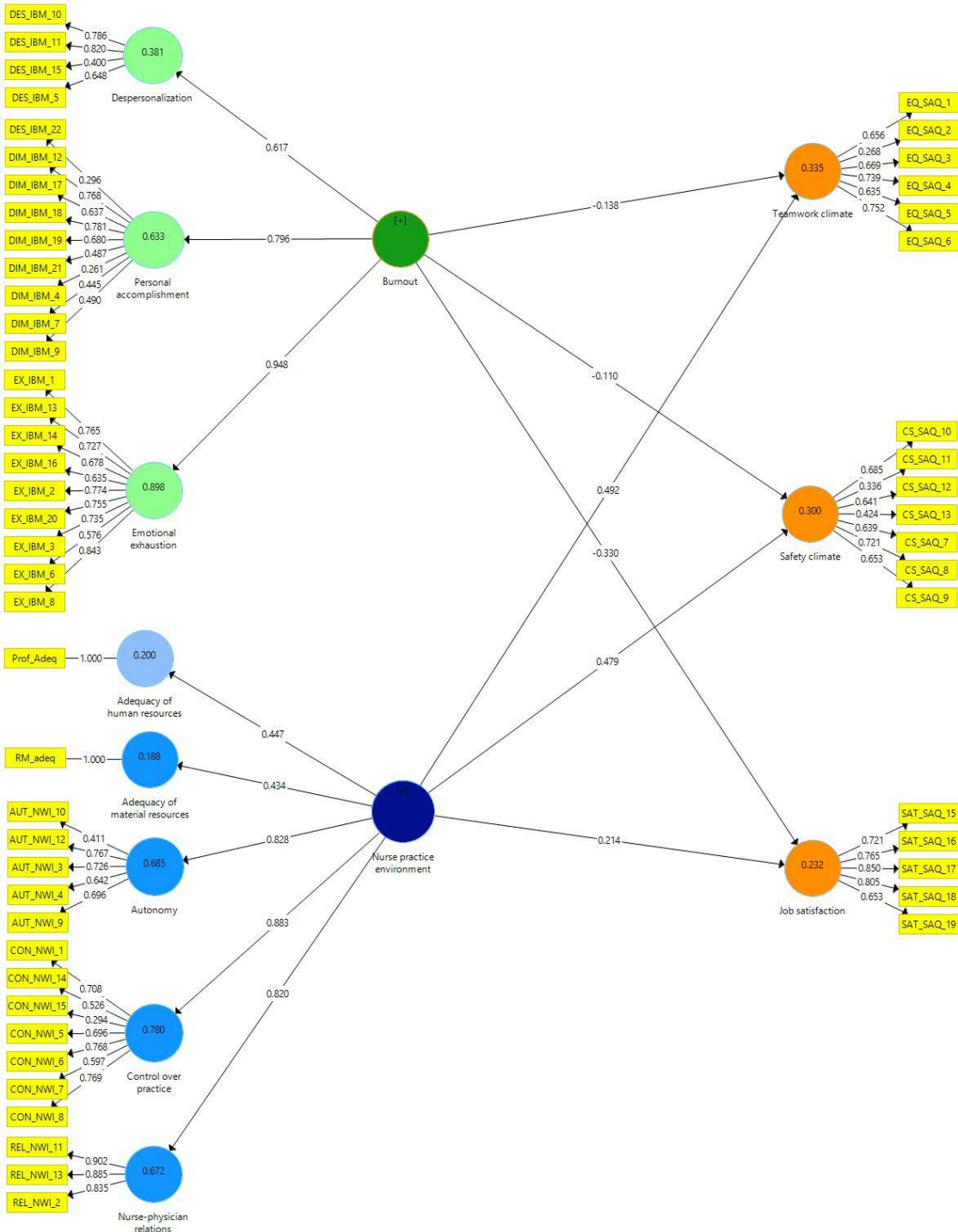
Score: 0 to 100

Scores above 75 points indicates a positive perception of a safe environment for the patient

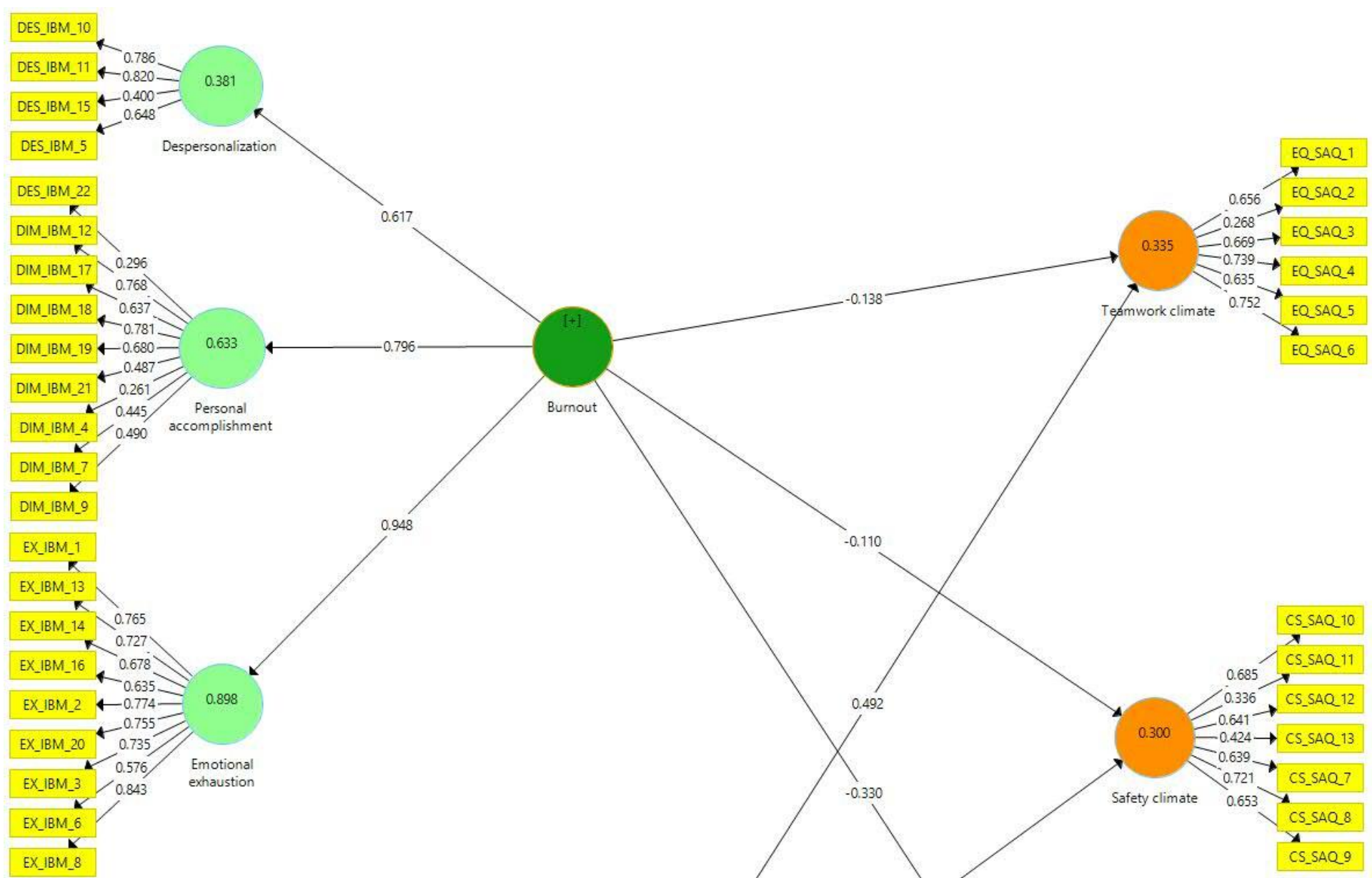
Results

Sample

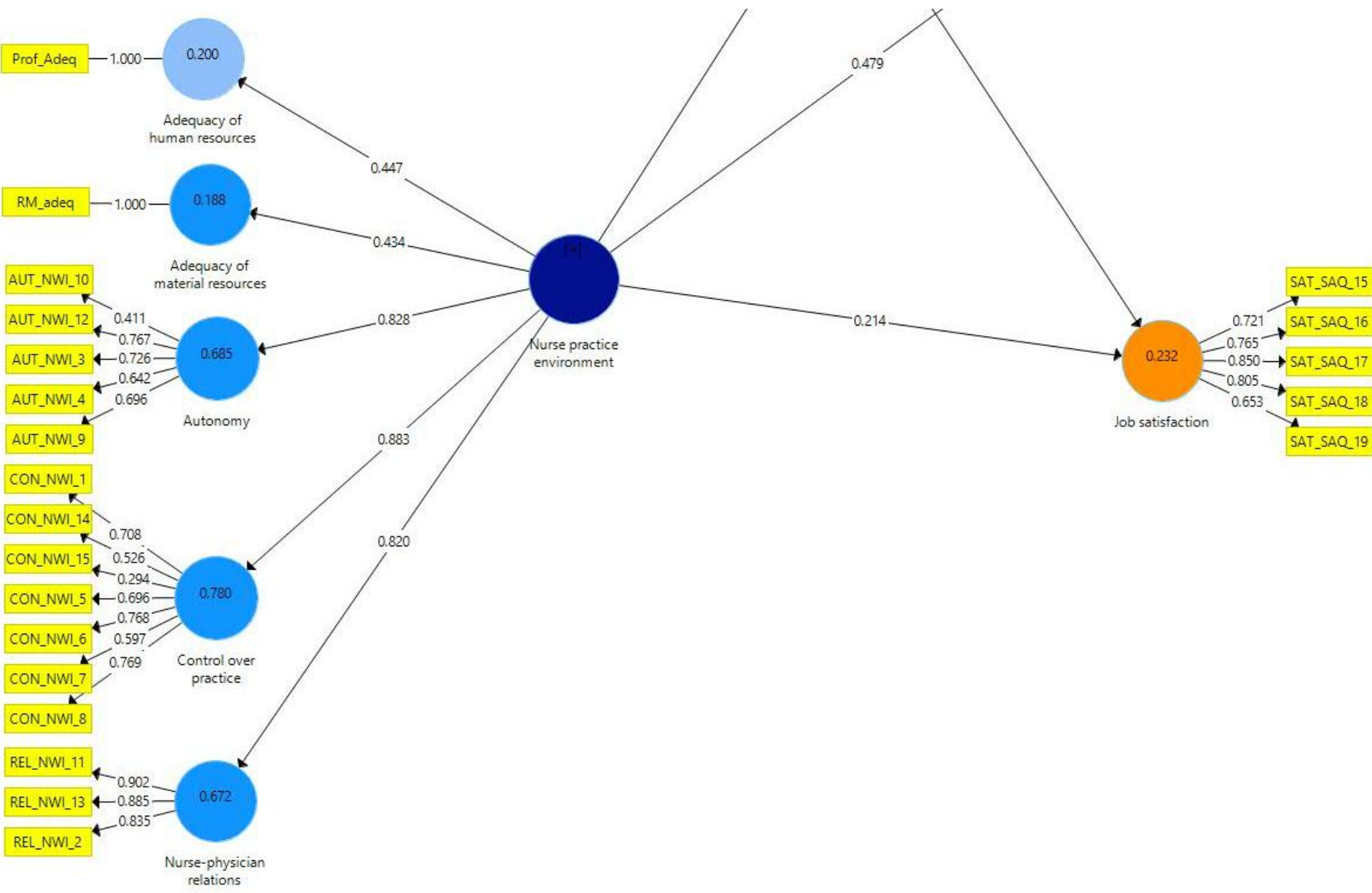
- 584 nursing professionals
 - 188 (32.2%) registered nurse
 - 396 (67.8%) nursing technicians
- Age: 37.2 years (DP± 9.3 years)
- 85.8% female
- 79.4% with one job
- Years of formation: 10,3 years (DP ± 6,9 years)
- Working time in the unit: 5.8 years (dp ± 6.1 years)
- Working time in the institution: 7.4 years (DP ± 7.1 years)
- Adequacy of material resources: Yes, 62.33%
- Adequacy of human resources: No, 50.17%



Theoretical model



Theoretical model



Theoretical model

Table 1 - Measuring model: Convergent validity

Variables	Factor Loads	Average Variance Extracted	Composite Reliability
Despersonalization	0.64 - 0.84	0.59	0.81
Personal accomplishment	0.67 - 0.82	0.56	0.83
Emotional exhaustion	0.68 - 0.78	0.53	0.91
Autonomy	0.66 - 0.78	0.52	0.81
Control over work environment	0.68 - 0.75	0.60	0.87
Nurse-physician relationships	0.84 - 0.90	0.77	0.91
Teamwork climate	0.68 - 0.78	0.52	0.81
Safety climate	0.68 - 0.75	0.50	0.80
Job satisfaction	0.65 - 0.85	0,58	0,87

14 itens were excluded to guarantee the adequacy of the measurement model.

The domains Safety climate and **Personal accomplishment** had more item excluded

The model was ajusted. All item had factorial load higher in the construct they were located.

Table 2 – Measuring model: Fornell-Larcker criterion

Variables	1	2	3	4	5	6	7	8	9
1 Despersonalization	0.767								
2 Personal accomplishment	0.423	0.747							
3 Emotional exhaustion	0.437	0.629	0.725						
4 Autonomy	-0.252	-0.400	0.481	0.717					
5 Control over work environment	-0.211	-0.313	-0.489	0.540	0.774				
6 Nurse-physician relations	-0.196	-0.336	-0.395	0.596	0.505	0.875			
7 Teamwork climate	-0.205	-0.348	-0.402	0.500	0.409	0.534	0.723		
8 Safety climate	-0.205	-0.310	-0.306	0.517	0.360	0.434	0.643	0.710	
9 Job satisfaction	-0.238	-0.376	-0.425	0.370	0.284	0.319	0.515	0.520	0.762

The square roots of the Average Variance Extracted should be greater than the correlations between the constructs – **Discriminant validity**

Table 3 – Structural model: Adjustment Quality Indexes (Predictive validity (Q^2), Pearson`s coefficients (R^2) and Effect Size (f^2))

Variables	Q^2	R^2	f^2
Environment	-	-	0.275
Adequacy of human resources	0.201	-	1.000
Adequacy of material resources	0.183	-	1.000
Autonomy	0.345	-	0.186
Burnout	-	-	0.323
Safety climate	0.133	0.275	0.165
Teamwork climate	0.168	0.333	0.201
Control over work environment	0.416	-	0.325
Despersonalization	0.215	-	0.192
Personal accomplishment	0.357	-	0.263
Emotional exhaustion	0.470	-	0.398
Nurse-physician relationships	0.508	-	0.510
Job satisfaction	0.126	0.232	0.364

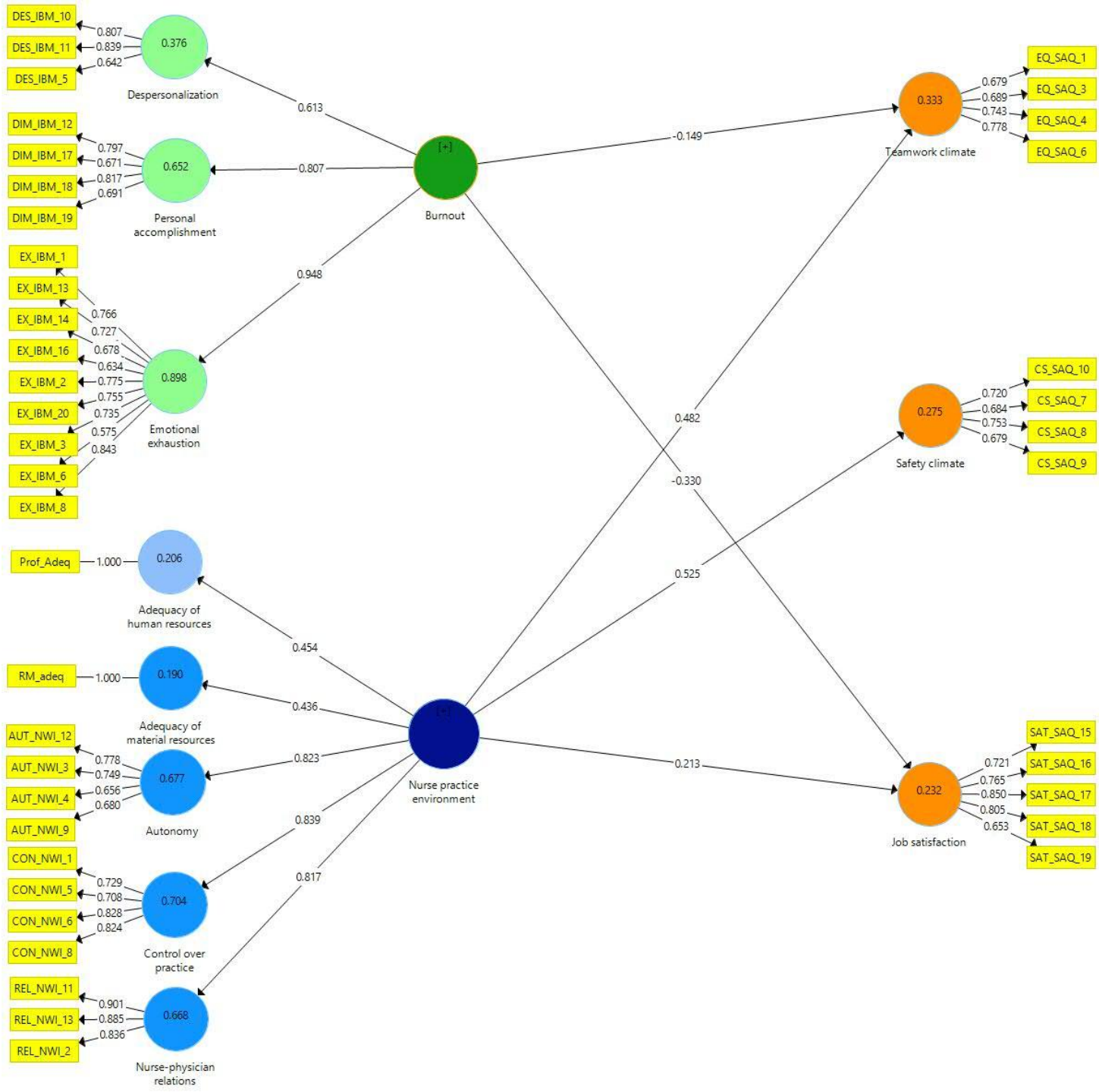
Table 4 – Structural model: Values of the path coefficients of the adjusted model

Variables	Path Coefficients	C. I. (95%)
Burnout → Teamwork climate	-0.149*	(-0.232; -0.067)
Burnout → Job satisfaction	-0.335*	(-0.427; -0.234)
Work Environment → Teamwork climate	0.485*	(0.396; 0.568)
Work Environment → Safety climate	0.525*	(0.458; 0.591)
Work Environment → Job satisfaction	0.213*	(0.129; 0.298)

* $p < 0.001$

If **burnout decreases** there will be a **better perception of the teamwork climate** and **job satisfaction**.

If there is an **improvement in the environment** there will be a **better perception of the teamwork climate, safety climate** and **job satisfaction**.



Final Model

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Conclusion

- The perception of nurse professionals in relation to nursing practice work environment and burnout were predictors of safety climate, teamwork climate and job satisfaction.
- The final model was fitted to explain the effect of the nurse work environment and burnout in the outcome variables.



Thank you!
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