

THE SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

**INFORMATION ON NEW ACADEMIC AND THEORETICAL
CONTRIBUTIONS OF THE THESIS**

Thesis's Title: Factors Affecting the Quality of Semiconductor IC Design Human Resources: A Case Study of Enterprises in the Southeastern Region

Major: Business Administration

Code: 923000139

PhD Candidate: Đỗ Thế Thắng

Course: 2023

University: Lac Hong

Science Instructor:

Supervisor 1: Dr. Nguyễn Văn Tân

Supervisor 2: Assoc. Prof. Dr. Trần Văn Trung

The contributions of thesis on science and practice, including:

Scientifically:

First integrated multi-layer model in Vietnam on human resource quality (HRQ) in the high-tech industry, combining three theories (Human Capital, Dynamic Capabilities, Institutional). The model explains 71.7% of the variance in HRQ, outperforming previous studies.

Clarifies the mediating mechanism of the work environment (WE) – a theoretical "black box" in the semiconductor industry. The dissertation successfully quantifies the partial mediating role of WE, confirming it as a "social catalyst" that transforms investments in technology and training into engineers' practical competencies.

Reinforces Institutional Theory with empirical evidence of an "institutional amplification" mechanism. Government support acts as a moderator, significantly enhancing the effectiveness of firms' internal investments, especially in training (interaction coefficient $\beta = 0.217$).

Develops and refines an HRQ measurement scale tailored to the context of semiconductor integrated circuit design in Vietnam. The scale comprises 26 observable items across 6 constructs and has been rigorously tested for reliability, convergent validity, and discriminant validity, providing a trustworthy measurement tool for future research.

Practically:

Establishes a strategic priority ranking for enterprises: Innovation level ($\beta=0.291$) → Work environment (0.185) → Training (0.146) → Technology (0.130), helping SMEs allocate resources effectively.

Quantifies the "bridging" role of the work environment: Investments in technology and training only yield full benefits when supported by a positive work environment. Recommends that enterprises improve resource adequacy, employee participation, and a cooperative culture.

Provides evidence for government support policies: Government support plays a moderating role, most strongly amplifying training effectiveness ($\beta=0.217$). Proposes three priority policies: a Semiconductor Human Resource Fund, a National Chip Design Center (HPC, EDA, MPW), and a talent attraction scheme.

Quantifies the training-practice gap: New graduates require 6–9 months of retraining. Proposes a four-step university reform roadmap: introduce EDA tools into labs, adopt project-based learning mandate 3–6 months of internship, and invite industry experts to teach.

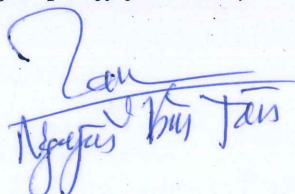
Suggests differentiated human resource management: Multi-group analysis reveals differences by gender, age, experience, and education level. Enterprises should design flexible training and compensation policies tailored to each group.

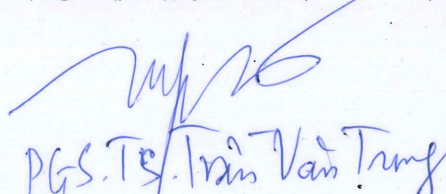
Dong Nai, date.....monthyear....

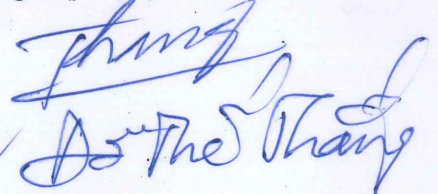
SCIENCE INSTRUCTOR 1
(Sign, specify full name)

SCIENCE INSTRUCTOR 2
(Sign, specify full name)

PHD CANDIDATE
(Sign, specify full name)


Nguyễn Văn Tân


PGS.TS. Trần Văn Trung


Đỗ Thế Thắng