

HOW HUMAN RESOURCE QUALITY AND INTERNATIONAL PUBLICATIONS AFFECT REVENUE FROM RESEARCH ACTIVITIES: EVIDENCE FROM SOUTHERN VIETNAMESE UNIVERSITIES

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Appendix 1. Variable definition

Variables	Notation	Variable description	Reference
<i>Dependent variables</i>			
Research revenue	Research revenue	Revenue from research activities	Heisey and Adelman (2011)
<i>Independent variables</i>			
International Publications		Number of international scientific journal articles	Zhang et al. (2013)
Human Resource Quality	MSc	Prof. is the number of employees with Professor titles, Assoc. Prof is the number of lecturers with Associate Professor titles, PhD is the number of lecturers with doctoral degrees, and MSc is the number of lecturers with master's degrees.	Ranga and Etzkowitz (2013)
	PhD		
	Assoc.Prof		
	Prof.		
<i>Control variables</i>			
SPSTUDENT		Total floor area divided by the total number of students	El Hajj et al. (2020)
TINCOME		Total income of the university	Geuna and Nesta (2006)
TSTUDENT		The total number of students in the university	Geuna and Muscio (2009)

Appendix 2. 39 Southern universities of Vietnam

UNIVERSITY NAME	
1.	Posts and Telecommunications Institute of Technology – Campus 2
2.	Vietnam Aviation Academy
3.	Ho Chi Minh City Conservatory of Music
4.	Hanoi University of Home Affairs – Ho Chi Minh City Campus
5.	Industrial University of Ho Chi Minh City
6.	Ho Chi Minh City University of Food Industry
7.	Saigon Technology University
8.	Ho Chi Minh City University of Technology
9.	University of Information Technology – Vietnam National University Ho Chi Minh City
10.	FPT University
11.	Gia Dinh University
12.	Ho Chi Minh City University of Transport
13.	Hoa Sen University
14.	Hung Vuong University Ho Chi Minh City
15.	Hong Bang International University
16.	University of Social Sciences and Humanities – Vietnam National University Ho Chi Minh City
17.	Ho Chi Minh City University of Economics and Finance
18.	University of Economics Ho Chi Minh City
19.	Ho Chi Minh City University of Architecture
20.	Ho Chi Minh City University of Law
21.	Ho Chi Minh City Open University
22.	Ho Chi Minh City University of Foreign Languages and Information Technology – HUFLIT
23.	Foreign Trade University
24.	Banking University of Ho Chi Minh City
25.	International University – Vietnam National University Ho Chi Minh City
26.	Saigon International University
27.	Saigon University
28.	Ho Chi Minh City University of Technology and Education
29.	Ho Chi Minh City University of Education
30.	Water Resources University – Campus 5
31.	University of Finance and Marketing

UNIVERSITY NAME	
32.	Ho Chi Minh City University of Natural Resources and Environment
33.	Ton Duc Thang University
34.	Vietnamese-German University
35.	Van Hien University
36.	Van Lang University
37.	Ho Chi Minh City University of Culture
38.	University of Medicine and Pharmacy at Ho Chi Minh City
39.	Pham Ngoc Thach University of Medicine

Appendix 3. Descriptive statistics

Variables	Mean	Median	5%	95%	Std. Dev.	Obs.
Research revenue	12.573	3.300	0.023	363.200	44.362	163
Msc	324.220	292.500	0.000	1698.000	279.269	163
PhD	144.110	133.000	0.000	1033.000	135.399	163
Assoc. Prof	31.195	20.000	0.000	465.000	53.240	163
Prof	4.695	2.000	0.000	41.000	7.150	163
International Publications	50.207	0.000	0.000	478.000	107.242	163
SPSTUDENT	26.140	13.746	1.690	240.900	38.448	163
TINCOME	307.088	251.352	6.349	1330.500	240.135	163
TSTUDENT	14303.380	14360.500	0.000	38096.000	9903.927	163

Note: Table 1 presents descriptive statistics of all the main variables in the study. The variable's definitions are in Appendix A.

Appendix 4. Pearson correlation matrix

Variables	Revenue Research	Msc	PhD	Assoc. Prof	Prof	SPStudent	International publications	TIncome	TStudents
Revenue Research	1								
Msc	0.013 (0.908)	1							
PhD	0.136 (0.225)	0.867*** (<0.001)	1						
Assoc. Prof	0.166 (0.135)	0.686*** (<0.001)	0.863*** (<0.001)	1					
Prof	0.193* (0.082)	0.509*** (<0.001)	0.645*** (<0.001)	0.625*** (<0.001)	1				
International Publications	-0.111 (0.321)	0.389*** (<0.001)	0.220** (0.047)	0.026 (0.819)	0.135 (0.226)	1			
SPSTUDENT	0.248** (0.024)	-0.162 (0.146)	-0.197* (0.076)	-0.110 (0.323)	0.024 (0.834)	-0.252** (0.023)	1		
TINCOME	0.432*** (<0.001)	0.465*** (<0.001)	0.493*** (<0.001)	0.241** (0.029)	0.318*** (0.004)	0.505*** (<0.001)	-0.196* (0.078)	1	
TSTUDENT	0.168 (0.131)	0.547*** (<0.001)	0.578*** (<0.001)	0.373*** (0.001)	0.295*** (0.007)	0.541*** (<0.001)	-0.310*** (0.005)	0.819*** (<0.001)	1

Note: Table 2 presents the Pearson correlation matrix. The sample period is from 2017 to 2023. All variable definitions are reported in Appendix A