THE IMPACT OF SELF-DIRECTED LEARNING ON EMPLOYABILITY: INSIGHTS FROM CONSTRUCTION AND ARCHITECTURE STUDENTS IN VIETNAM

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Appendix 1. Measurements

Measures of constructs	Description	Sources
Employability		Saad et al. (2013)
EMP1	The ability to undertake problem identification, apply problem-solving, formulations and solutions.	
EMP2	The ability to use techniques, skills and modern tools.	
EMP3	The ability to present ideas with confident and effectiveness.	
EMP4	The ability to function effectively as an individual and in a group.	
EMP5	The ability to acquire and apply knowledge of technical fundamentals.	
EMP6	The ability to continue learning independently in the acquisition of new knowledge, skills and technologies	
EMP7	The ability to design and conduct experiments, as well as to analyze and interpret data.	
EMP8	The ability to utilize a systematic approach to design and evaluate operational performance.	
EMP9	The ability to acquire in-depth technical competence in a specific technical discipline.	
EMP10	The ability to recognize the need to undertake life-long learning and possessing/acquiring the capacity to do so.	
EMP11	The ability to understand the social, cultural, global and environmental responsibilities	
EMP12	Having the competency in theoretical and research technical discipline	
EMP13	Having basic entrepreneurial skills.	
Self-Directed Learning		Chen et al. (2019
LM1	I pay more attention to mastering professional knowledge and skills, and not just to pass examinations.	
LM2	Getting a scholarship is a strong driver, inspiring me to study	
LM3	I would get stressed, and try to get ahead of others, if their academic performance was better than mine	
LM4	I believe that the knowledge and skills I acquire will be of great importance in my future job.	
LM5	I believe that excellent academic performance can be achieved through hard work.	

Measures of constructs	Description	Sources
LM6	I believe I have the ability to solve problems in my learning.	
LM7	I think learning is interesting.	
LM8	I have a strong desire to learn, always ask questions and try to find answers	
SM1	I always make a study plan in advance	
SM2	I usually arrange my time according to the tasks, in different subjects.	
SM3	I usually review the learning contents of the day's courses	
SM4	If I cannot understand any knowledge points, I try to relearn them until I understand	
SM5	I carry on my study, no matter how difficult the learning tasks	
SM6	I often feel anxiety in learning and confused about what to do	
SM7	I am able to find a suitable place for study and take appropriate measures, to eliminate distraction	
SM8	I pay great attention to my teachers' words and deeds, in the process of learning	
SM9	When I face problems, I don't give up easily; I find solutions independently	
SM10	I choose learning methods suitable for me according to different learning contents	
SM11	I am clearly aware of how to achieve the desired learning objectives after I finish learning	
CL1	I am reluctant to exchange with my classmates what I have learned and problems I have faced in study	
Cl2	I am reluctant to express my viewpoints in group discussions.	
CL3	I am willing to share my learning experiences with students in other fields, to enrich my knowledge	
CL4	When I have problems related to study, I take the initiative to consult teachers or others	
CL5	When I ask people for help with study problems, I adopt all their opinions	
IQ1	In my spare time, I learn something that I am interested in	
IQ2	I am sensitive to new information sources	
IQ3	I regularly read the technical journals I am familiar with	
IQ4	In my study, I seldom search for literature online	
IQ5	I always write down points after I read a book or an article	
IQ6	If necessary, I organize the information collected into a report, review, or other learning materials	
Expectation from self		Morshidi et al. (2024)
EFS1	I set high standards in my studies.	
EFS2	I know I can achieve higher grades.	
EFS3	I expect to perform better than my peers academically.	

Appendix 2. Characteristics of respondents

	Frequency	Percentage
Gender		
Male	348	75.16
female	115	24.84
Academic Year		
3rd year student	281	66
4th year student	111	24
5th year student	66	14
Distribution of participants		
North Central and Coastal	16	3.46
Red River Delta	169	36.50
Northern midlands and mountains	10	2.16
Central Highlands	2	0.43
Southeast	220	47.52
Mekong Delta	46	9.94

n=463

Appendix 3. Results of exploratory factor analysis

Items of constructs	Corrected Item - Total Correlation	Factor Loading
Scale: Employability: Cronbach's Alpha =0.942		
KMO: 0.972 Sig <0.001 Total variance extracted=58.851%		
EMP1	.695	0.743
EMP 2	.701	0.749
EMP 3	.703	0.751
EMP 4	.736	0.781
EMP 5	.730	0.776
EMP 6	.718	0.765
EMP 7	.754	0.797
EMP 8	.714	0.761
EMP 9	.717	0.764
EMP 10	.723	0.77
EMP 11	.732	0.778
EMP 12	.717	0.764
EMP 13	.728	0.773

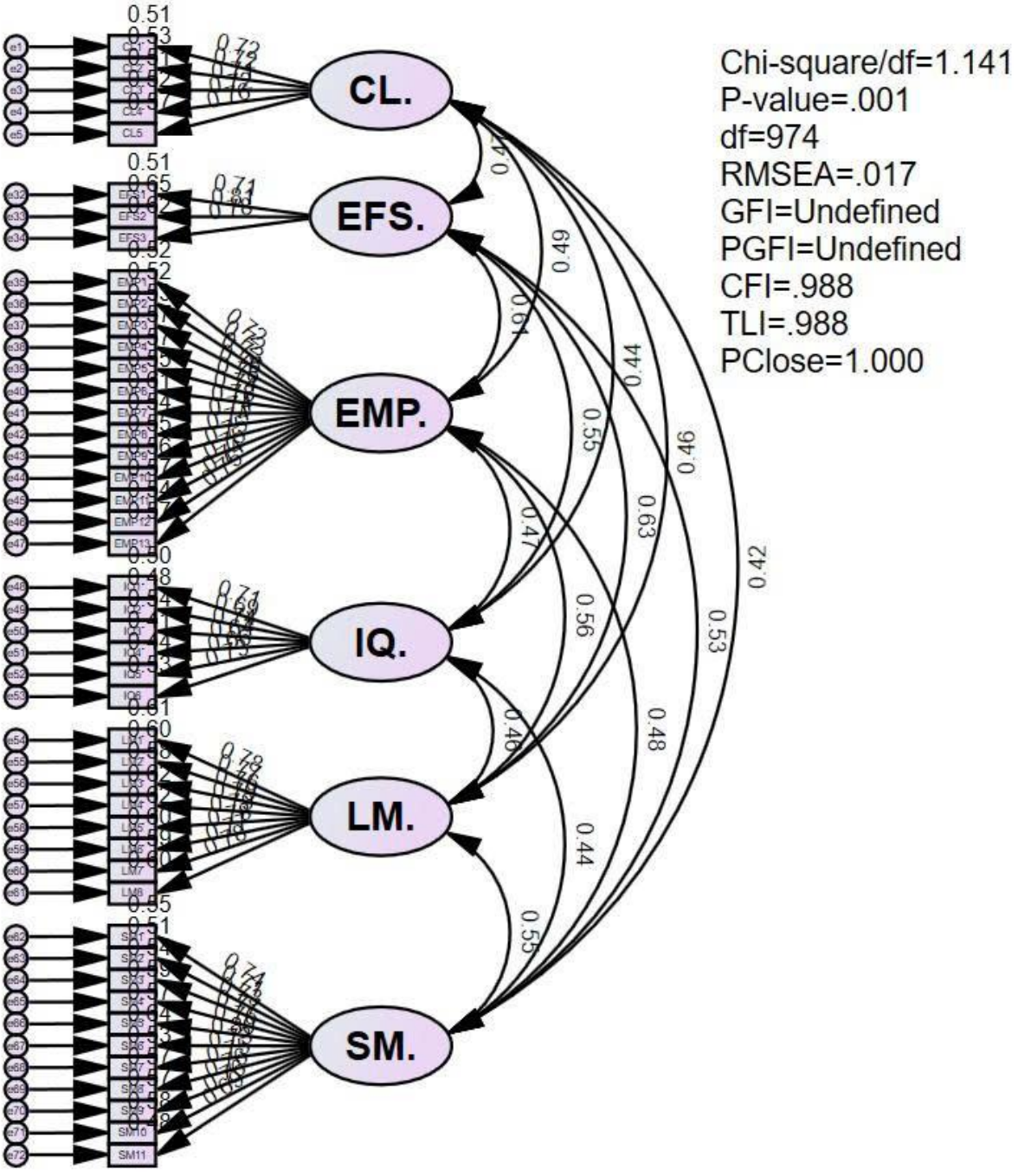
Items of constructs	Corrected Item - Total Correlation	Factor Loading
Scale: Collaborative Learning: Cronbach's Alpha = 0.848		
KMO: 0. 859 Sig <0.001 Total variance extracted=62.137%		
CL1	.646	0.78
CL2	.656	0.789
CL3	.650	0.784
CL4	.651	0.784
CL5	.677	0.805
Scale: Information Quality: Cronbach's Alpha = 0.849		
KMO: 0. 891 Sig <0.001 Total variance extracted=57.020%		
IQ1	.654	0.774
IQ2	.629	0.752
IQ3	.667	0.784
IQ4	.588	0.717
IQ5	.600	0.727
IQ6	.653	0.773
Scale Learning Motivation: Cronbach's Alpha = 0.924		
KMO: 0. 948 Sig <0.001 Total variance extracted= 65.319%		
LM1	0.743	0.808
LM2	0.738	0.804
LM3	0.732	0.799
LM4	0.750	0.814
LM5	0.759	0.821
LM6	0.744	0.809
LM7	0.741	0.807
LM8	0.737	0.803
Scale Self-Management: Cronbach's Alpha = 0.932		
KMO: 0.968 Sig <0.001 Total variance extracted= 59.698 %		
SM1	0.718	0.773
SM2	0.692	0.749
SM3	0.702	0.759
SM4	0.741	0.793
SM5	0.727	0.781
SM6	0.770	0.818
SM7	0.706	0.761
SM8	0.724	0.778

Items of constructs	Corrected Item - Total Correlation	Factor Loading
SM9	0.726	0.78
SM10	0.730	0.783
SM11	0.659	0.719
Scale: Expectation from Self: Cronbach's Alpha = 0.812 KMO: 0. 707 Sig <0.001 Total variance extracted= 72.714 %		
EFS1	0.636	0.836
EFS2	0.704	0.878
EFS3	0.648	0.713

Appendix 4. HTMT Analysis

	CL.	EFS.	EMP.	IQ.	LM.	SM.
CL.						
EFS.	0.386					
EMP.	0.442	0.534				
IQ.	0.372	0.457	0.420			
LM.	0.406	0.550	0.517	0.413		
SM.	0.371	0.464	0.448	0.396	0.515	

Appendix 5. Result from Confirmatory Factor Analysis



Appendix 6. Testing the structural model after running Bootstrapping