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Keys success factors of life sciences entrepreneurs in Thailand

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Abstract

Currently, medical and health innovation businesses are on the rise, especially after the outbreak of COVID-19. More corporations have been established and prospered all over the world. However, at the end of 2022, there was a report of a decrease in the total number of medical and health entrepreneurs whose businesses were still operating in Thailand compared to the end of 2021. Therefore, this research aimed to examine the key success factors of life sciences entrepreneurs in Thailand to survive. Data were collected from 120 active entrepreneurs and analyzed using factor analysis and Structural Equation Modeling (SEM). The findings revealed that *Human Capital* (Personal motivation, Management skills, Teamwork, Industry knowledge), *Financial Capital* (Money and Infrastructure), *Social Capital* (Environment, Networking, and Culture), and *Business Opportunities and Strategies* significantly affected the success of life sciences entrepreneurs. To develop entrepreneurs to be able to grow sustainably, it is, therefore, very necessary to promote human capital activities, such as organizing business matching forums, training for new knowledge and technology, building effective teamwork, and creating a platform to meet experts in various fields to improve the company's competitiveness.

Keywords: Capital factors, Entrepreneurs, Human Capital, Life sciences, Thailand.

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1. Introduction

With the increasing importance of life sciences technology, the Thai government has therefore prepared a 20-year strategic plan for the development of Thai Industry 4.0 (2017 - 2036) and set the guidelines for the development of new target industries, which will serve as an important driver of the country's economy in the future (New S-Curve). The life sciences industry is related to 3 of the 10 new target industries, namely robotics, digital, and medical hub. In addition, the COVID-19 pandemic has made life sciences entrepreneurs in Thailand even more important.

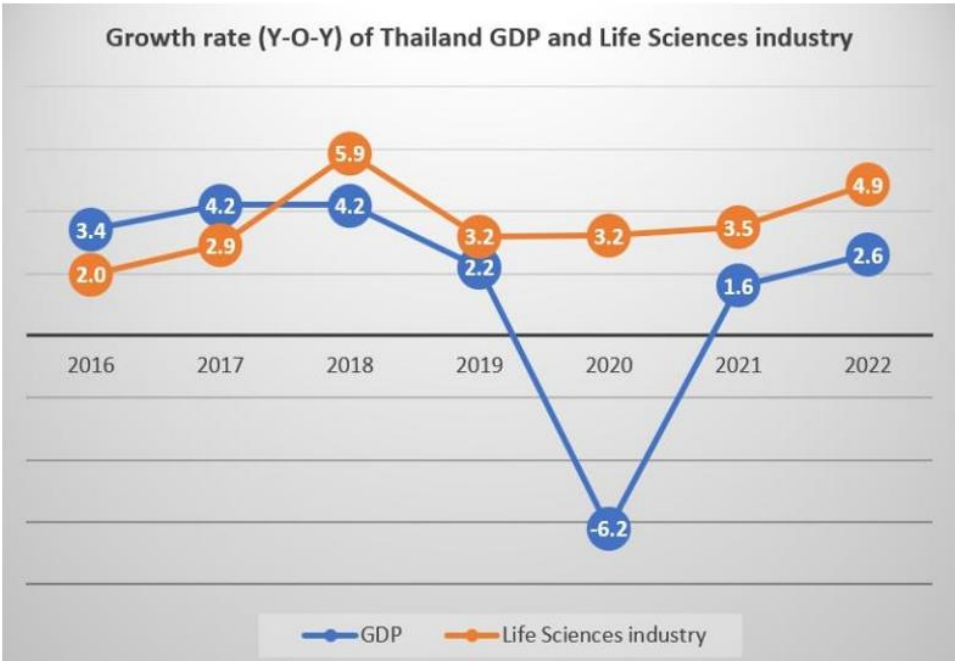

Figure 1.
Growth Rate of Thailand GDP and Life Sciences Industry.
Source: Ministry of Commerce, 2023

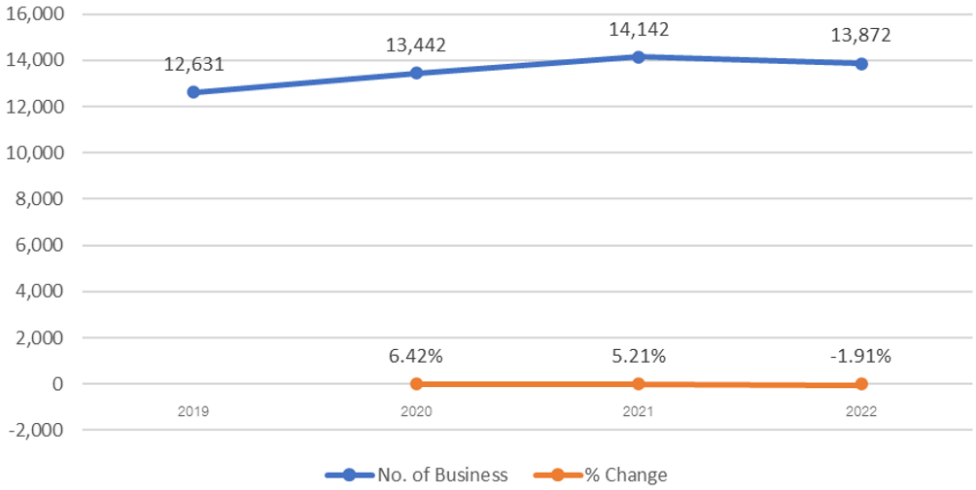

Figure 2.
Number of Active Life Science Business.
Source: Ministry of Commerce, 2023.

Currently, there are groups of researchers and Thai companies with high potential to develop medical and health innovations on their own or rely on technological transfer from universities or government agencies. The establishment of companies can also create more growth in the market. However, at the end of 2022, the Department of Business Development, Ministry of Commerce reported a decrease in the total number of medical and health entrepreneurs whose businesses were still operating in Thailand compared to the end of 2021. Therefore, it is interesting to study what factors influence entrepreneurial success in the Thai life sciences industry. From reviewing the concepts and the theories related to the measurement of entrepreneurial success, no research studying such issues in Thailand has been found. The results of this study will enable concerned parties to establish appropriate mechanisms to support entrepreneurs. Additionally, entrepreneurs in the industry will be able to manage internal components to grow sustainably.

2. Research Objectives

This research aimed to explore the factors that influence entrepreneurial success in the Thai life sciences industry.

3. Literature Review

There are many forms of entrepreneurial success measurement defined differently, for example, based on market share or the number of customers Gelderen et al. [1], profits or sales that increase or exceed the market average Lemes et al. [2] the achievement of founders through ownership Chirjevskis and Dvortsova [3] or helping society to have a better quality of

life [4]. This study defines entrepreneurial success based on market share or more customers, profits, or sales that increase or exceed the market average, or the ability to maintain the business.

Studies abroad reveal that there are many factors affecting entrepreneurial success, depending on the type of capital. Most studies found only some types of capital. An important study that is widely cited is that of Zafar [5] which found that the key factors influencing entrepreneurial success were the social capital factor, namely entrepreneurship development and environment; the financial capital factor, namely finance and infrastructure; the human capital factor, namely entrepreneurial traits, skills, and project reports; the other factors, namely business opportunities. Timmons [6] research found that various resources for running a business were an important variable in the financial capital factor; the team was an important variable in the human capital factor; business opportunity was an important variable in the other factors influencing entrepreneurial success.

The research of Rauch and Frese [7] found that environment was an important variable in the social capital factor; personality and goals were important variables in the human capital factor; strategies were an important variable in the other factor. Furthermore, research by Wickham [8] found that human capital was the only factor contributing to entrepreneurial success. The important variables were personal motivation, management skills, people skills and industry knowledge.

The research of Morris et al. [9] found that environment was an important variable in the social capital factor; resources were an important variable in the financial capital factor; entrepreneur and concept were important variables in the human capital factor; organization and process were important variables in the other factor. Rajput [10] research found that network, culture, and environment were important variables in the social capital factor; resources were an important variable in the financial capital factor; entrepreneurship and innovation were important variables in the human capital factor; opportunity was an important variable in the other factor.

From relevant conceptual and literature reviews, the variables in this study could be defined. It was found that the success of medical and health entrepreneurs consisted of 5 latent variables and 12 observed variables, which can be summarized as shown in Figure 3 and Table 1.

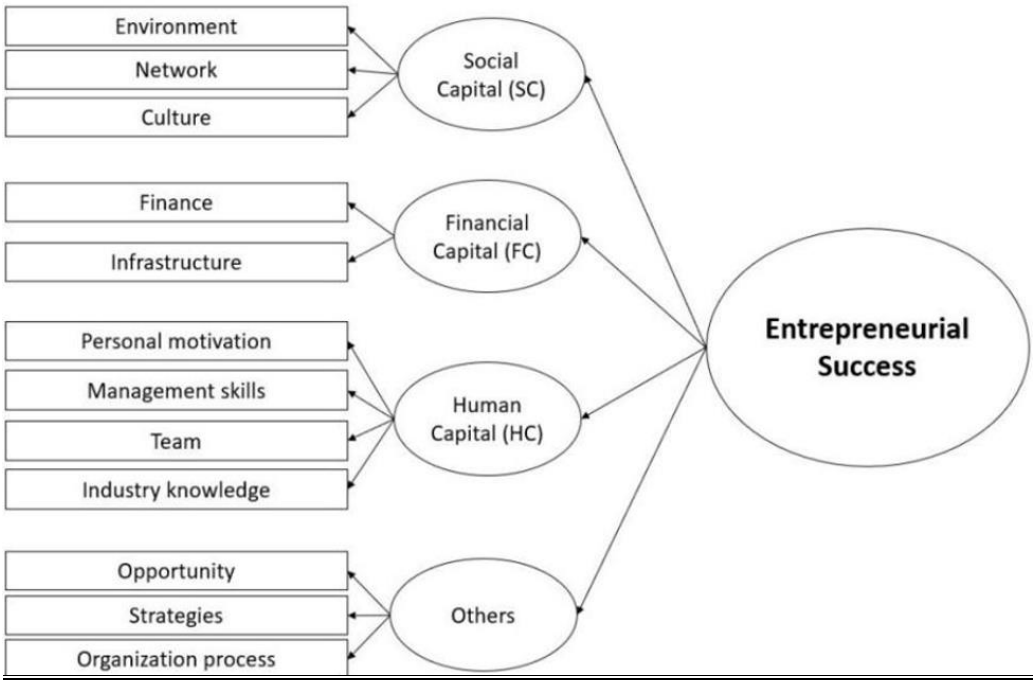

Figure 3.
Conceptual framework.

Table 1.
Classification of entrepreneurial success factors into social capital, financial capital, human capital and others factor.

Model reference	Author (s)	Social capital factor	Financial capital factor	Human capital factor	Others factor
Indian Model of Entrepreneurship	Zafar [5]	Entrepreneurship development and environment	Finance, infrastructure	Entrepreneurial traits, skills and project report	Opportunity
Timmons' Model of Entrepreneurial Success	Timmons [6]		Resources	Team	Opportunity
General Model of Entrepreneurial Success	Rauch and Frese [7]	Environment		Human capital, personality and goals	Strategies
Wickham Model of Entrepreneurial Performance	Wickham [8]			Personal motivation, management skills and people skills, and industry knowledge	
The Integrative Model of Entrepreneurship	Morris et al. [9]	Environment	Resources	Entrepreneur, concept	Organization and the process
Rajput Model of Entrepreneurial Success	Rajput [10]	Network, culture, environment	Resources	Entrepreneur, innovation	Opportunity
Applied Conceptual Framework		Environment, network and culture	Finance and infrastructure	Personal motivation, management skills, team and industry knowledge	Opportunity, strategies and organizational process

4. Hypothesis

H_1: Entrepreneurial success is influenced by the social capital factor.
H_2: Entrepreneurial success is influenced by the financial capital factor.
H_3: Entrepreneurial success is influenced by the human capital factor.
H_4: Entrepreneurial success is influenced by the other factors.

5. Methodology

The population in this research consisted of medical technology and health entrepreneurs registered as legal entities to be manufacturers, product sellers, or service providers in four groups: pharmaceuticals (drugs), medical devices, cosmetics and food supplements, and healthcare services, who were still operating at the end of 2022. According to the Department of Business Development, Ministry of Commerce, it was found that at the end of 2022, 13,872 entrepreneurs met the above criteria. The minimum sample size was determined using structural equation analysis. The sample size was set to be 10 times the observed variables according to Hair et al. [11]. The number of variables observed from the review of related literature was 12; therefore, the sample size in this research was equal to 120. Stratified random sampling was used, and the sample was determined based on the objectives of the company establishment in the four groups according to the population proportion. This resulted in the number of samples in each group, as shown in Table 2. Samples were collected using an online questionnaire sent to executives of each business through the association network and trade groups conducting businesses in the medical and health industry between June - July 2023.

Table 2.
Sample size.

Group	Population	Population ratio	Sample
Pharmaceutical	6,227	44.89%	54
Medical Devices	1,267	9.14%	11
Cosmetic and Food Supplement	3,886	28.01%	34
Healthcare Services	2,492	17.96%	21
Total	13,872	100%	120

Research Instrument. The researcher developed a questionnaire from variables, statements, and synthesis from literature reviews to be used for surveying and finding the correlation of important variables. The statements came from a review of relevant literature. The researcher used a Likert Scale, which consisted of statements showing the level of measurement of data on the interval scale, which can be divided into 7 levels, and used data from the sample as the unit of analysis. Then the

sample data from the questionnaire were analyzed using basic statistical analysis and confirmatory factor analysis based on the principles of Structural Equation Modeling (SEM). The AMOS program, version 21 was used for data analysis.

Research Analysis. The researcher employed the second-order confirmatory factor analysis since the variables under this study were complex theoretical variables, and the second-order confirmatory factor analysis would enable the researcher to explain the relationship between the components more effectively than the first-order confirmatory factor analysis. The results of the fit analysis and correlation of each variable will be presented with statistical values indicating the validity, acceptance, and suitability of the research at the international level. After collecting the samples, the researcher tested the reliability and validity of each latent variable by Composite Reliability (CR) and Average Variance Extracted (AVE), which should be over 0.6 and 0.5 [12]. The researcher used statistical values to consider the conditions of the model fit, including regression weight (factor loading), which represents the weight of how important each level of latent variable is influenced by or extracted from the previous variable, the Chi-square/degree of freedom (CMIN/df) value, representing the overall fit of the relationship model, which should be lower than 3 Bentler and Bonett [13] goodness-of-fit index (GFI) and adjusted GFI (AGFI), which must be greater than 0.8 [14]. Normalized fit index (NFI) and incremental fit index of improved NFI (CFI), which must be greater than 0.9 [13], the root-mean-square error of approximation (RMSEA), which must be less than 0.08 [11].

6. Result

The researcher collected data from 120 samples according to the population proportion. Most of the samples had been in business for 3–4 years, followed by 5–6 years and 7–9 years at 37%, 23%, and 20%, respectively. All latent variables could maintain the composite reliability values between 0.73 and 0.83, which is higher than the acceptable value of 0.6, and the average variance extracted is higher than the acceptable value of 0.5. It could be concluded that the variables have convergent and discriminant validity. The results are shown in Table 3.

Table 3.
Validity and reliability test.

Variable		Factor loading	Composite reliability (CR)	Average variance extracted (AVE)
Social Capital (SC)	Environment (SC1)	0.75	0.78	0.76
	Network (SC2)	0.84		
	Culture (SC3)	0.72		
Financial Capital (FC)	Finance (FC1)	0.88	0.83	0.79
	Infrastructure (FC2)	0.81		
Human Capital	Personal motivation (HC1)	0.88	0.82	0.8
	Management skills (HC2)	0.84		
	Team (HC3)	0.79		
	Industry knowledge (HC4)	0.78		
Others (OT)	Opportunity (OT1)	0.72	0.73	0.69
	Strategies (OT2)	0.74		
	Organization process (OT3)	0.75		

As shown in Figure 4 and Table 4, the findings of the AMOS program with the second-order factor analysis revealed that all four factors influenced the success of life sciences entrepreneurs. The model in Figure 2 presents such statistics and Indices as CMIN/df =1.663<3.0 with df=37 and P=.00<.05; GFI=.927>.80; AGFI = 0.845>0.8; NFI = .914>.9; CFI=.962>.9, RMSEA=.075<.08, presenting the close fit of the model to the data. however, all hypotheses are supported (significance level = 1%).

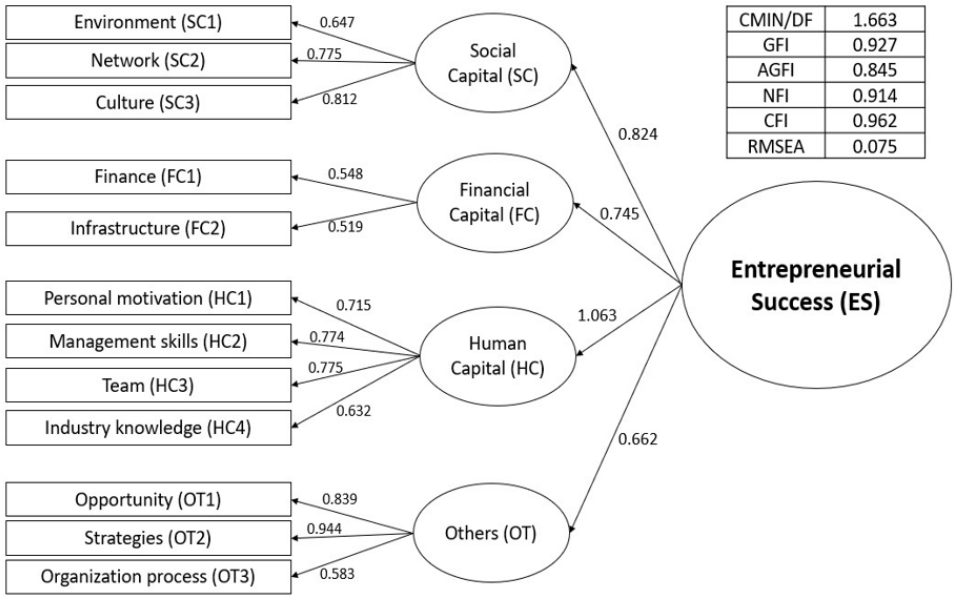

Figure 4.
Result of final 2nd order CFA model with standardized coefficient.

Table 4.
Standardized regression weights.

Hypothesis	Path			Standardized Coefficient	S.E.	C.R.	P value	Decision
H1	SC	<---	ES	0.824	0.4	4.518	***	Supported
H2	FC	<---	ES	0.745	0.233	3.353	***	Supported
H3	HC	<---	ES	1.063	0.413	4.231	***	Supported
H4	OT	<---	ES	0.662	0.324	3.031	***	Supported

From Figure 4, it was found that the human capital factor had the highest influence on entrepreneurial success, with the team as the most important variable, followed by management skills, personal motivation, and industry knowledge, respectively. Meanwhile, the second most influential factor was social capital, with business operation culture being the most important variable, followed by network and environment in business operations. In addition, financial capital was the third most influential factor on entrepreneurial success, with capital and infrastructure as the most influential variables, respectively. The other factors influencing entrepreneurial success were business strategies, opportunity, and organizational processes.

7. Discussion

From the findings in this study, the success of life sciences entrepreneurs in Thailand can be achieved through four latent variables and 12 observed variables.

Human capital had the highest influence on the success of life science entrepreneurs in the dimension of personal motivation, management skills, team and industry knowledge. This finding was consistent with the research of Zafar [5] in the mode of entrepreneurial traits and skill; and Timmons [6] in the mode of team; Rauch and Frese [7] in the mode of personality; Wickham [8] in the mode of personal motivation, management skills, people skills and industry knowledge.

Social capital influences the success of life science entrepreneurs in the dimension of environment, network and culture factors. This finding is in line with the research of Rauch and Frese [7] stated that entrepreneurial success relied on the environment, resources, geographical, cultural content of the organization, and the research of Rajput [10] revealed that essentially four factors namely culture and environment, resources, innovation and opportunity were main factors of the profitability and business success in this sector. Therefore, favorable synergies ensuring the availability of these determinants are required for the promotion and growth of the SMEs, which in turn induce economic growth in the economy.

Financial capital factor influenced entrepreneurial success, which is in line with the research by Zafar [5] concluded that the influence of caste was considered in the context of attitudes towards bargaining and credit, knowledge of and information on markets, raw materials and infrastructure; Timmons [6]; Morris, et al. [9] and Rajput [10] in the mode of resourcers.

The other factor that influences entrepreneurial success was opportunity, consistent with the research of Zafar [5], Timmons [6] and Rajput [10]. Meanwhile, the finding that strategies influenced entrepreneurial success is consistent with the research of Rauch and Frese [7], and the finding that organizational process influenced entrepreneurial success is consistent with the research of Morris et al. [9].

8. Conclusion

This research collected data on a sample of 120 entrepreneurs still operating in the life sciences industry and performed data analysis using the AMOS program with second-order factor analysis. The results of the analysis revealed that the four capital factors, namely human capital, financial capital, social capital, and others, significantly affected the success of life sciences entrepreneurs. The most influential factor was human capital, followed by social capital, financial capital, and others, respectively.

From in-depth interviews with 5 entrepreneurs in the agencies and associations supporting entrepreneurs in the life sciences industry to confirm the findings, there was a consensus that the human capital factor influenced entrepreneurial success and growth more than other factors. Moreover, the executives and most company structures tended to focus on technological expertise, so they often lacked expertise in managing the back-end systems and marketing. To develop entrepreneurs to be able to grow sustainably, it is, therefore, very necessary to promote human capital activities, such as organizing business matching forums, providing knowledge to entrepreneurs about changes in the industry, and creating a platform to meet experts in various fields to improve what the companies are still lacking and drive business growth.

9. Limitations and Future Research

As the limitation of this study is the time constraint and lack of cooperation from entrepreneurs who were willing to provide information, future research may therefore study a larger group of entrepreneurs or only subgroups, such as entrepreneurs of medical devices or food supplements, which have high growth potential in order to understand different influencing factors. In addition, a comparative study may be conducted between entrepreneurs in Thailand and abroad to see the consistency or differences in the findings.

References

[1] M. v. Gelderen, R. Thurik, and N. Bosma, "Success and risk factors in the pre-startup phase," *Small Business Economics*, vol. 24, pp. 365-380, 2005. https://doi.org/10.1007/s11187-004-6837-5

[2] C. P. M. Lemes, E. Hormiga Pérez, and D. J. García Almeida, "The role of knowledge in the immigrant entrepreneurial process," *International Journal of Business Administration*, 2010. https://doi.org/10.5430/ijba.v1n1p68

[3] A. Chirjevskis and A. Dvortsova, "Assessment of qualitative success factors of innovative E-business startups," *Social Science Letters*, vol. 2, no. 2, p. 51, 2012. https://doi.org/10.14738/ssrj.22.2012.2.51

[4] M. Sulayman, E. Mendes, C. Urquhart, M. Riaz, and E. Tempero, "Towards a theoretical framework of SPI success factors for small and medium web companies," *Information and Software Technology*, vol. 56, no. 7, pp. 807-820, 2014. https://doi.org/10.1016/j.infsof.2014.03.006

[5] A. Zafar, "Pakistani entrepreneurs: Their development, characteristics & attitudes," 1983.

[6] J. A. Timmons, *The entrepreneurial mind*. Andover, MA: ERIC, 1989.

[7] A. Rauch and M. Frese, "Psychological approaches to entrepreneurial success: A general model and an overview of findings," *International Review of Industrial and Organizational Psychology*, vol. 15, pp. 101-142, 2000. https://doi.org/10.1002/9780470753552.ch3

[8] P. A. Wickham, "Overconfidence in new start-up success probability judgement," *International Journal of Entrepreneurial Behavior & Research*, vol. 12, no. 4, pp. 210-227, 2006. https://doi.org/10.1108/13552550110401934

[9] M. Morris, M. Schindehutte, and J. Allen, "The entrepreneur's business model: Toward a unified perspective," *Journal of Business Research*, vol. 58, no. 6, pp. 726-735, 2005. https://doi.org/10.1016/j.jbusres.2003.11.001

[10] A. A. Rajput, *Developing entrepreneurial model for Pakistani SMEs: A case study on commercial fast-food smes department of management & social sciences*. Islamabad: Mohammad Ali Jinnah University, 2011.

[11] J. F. Hair, C. M. Ringle, and M. Sarstedt, "Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance," *Long Range Planning*, vol. 46, no. 1-2, pp. 1-12, 2013. https://doi.org/10.1016/j.lrp.2012.10.001

[12] C. Fornell and D. F. Larcker, *Structural equation models with unobservable variables and measurement error: Algebra and statistics*. Los Angeles, CA: Sage publications Sage CA, 1981.

[13] P. M. Bentler and D. G. Bonett, "Significance tests and goodness of fit in the analysis of covariance structures," *Psychological Bulletin*, vol. 88, no. 3, p. 588, 1980. https://doi.org/10.1037/0033-2909.88.3.588

[14] A. H. Seyal, M. N. A. Rahman, and M. M. Rahim, "Determinants of academic use of the Internet: A structural equation model," *Behaviour & Information Technology*, vol. 21, no. 1, pp. 71-86, 2002. https://doi.org/10.1080/01449290110108659