

A Structural Equation Modeling of Variables influencing the Organizational Sustainability of Music Faculties in Thailand's Private Higher Education Institutions

ตัวแบบสมการโครงสร้างของตัวแปรที่มีอิทธิพลต่อความยั่งยืนขององค์กรในคณะดนตรีสังกัดสถาบันอุดมศึกษาเอกชนของประเทศไทย

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Abstract

As indicated by the present aging population and fewer children situation, the number of Thai youngsters has been radically diminishing contrasted with the earlier decades and this prompts the insufficient number of students enlisting in the university level. It has influenced both public and private higher education institutions however the second one has gotten a higher effect as Thai parents and children have a typical social esteem that graduating from the public university will get more pride and respect to the family. Programs in music have been popular in the recent year, however, for the private higher education institutions offering a degree in music is attempting to survive. This paper therefore investigated a multitude of factors both the direct and indirect factors affecting organizational sustainability of Thai private higher education institutions' music faculties. From the sample were 280 Thai administrative members in the private higher education institutions surveyed and analyzed by using a structural equation modeling by PLS-Graph software it was determined that organizational performance affects organizational sustainability to the greatest extent due to monetary and non-monetary factors with an intermediate input into innovation, the business environment and business strategies. Organizational performance is also influenced by innovation and business strategies.

Keywords: Innovation, Business Environment, Business Strategies, Organizational Performance, Organizational Sustainability, SEM

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Introduction

According to National Economic and Social Development Board of Thailand, in 1980 the number of school age children (< 21 years) represented 62.3 percent of the population but by 2040, this number will drop to 20 percent of the population. The reasons are varied and complex but the reality is many Thai universities are entering a period of where change and flexibility are becoming a matter of institutional sustainability. According to education officials, in 2015's admissions period, Thai universities had up to 156,216 spots open for prospective students. However, only 105,046 applied to take the entrance exams, leaving more than 50,000 places empty (MAA, 2016). If the trend continues, academics fear that some universities may be forced to close their doors.

According to the Office of the Prime Minister (2012), Thai fertility rates plunged from 6.3 from 1964-1965 to approximately 1.82 from 2000 - 2005, which is considered lower than the replacement level and it continued to decline to 1.62 in the 2005 -2010 period. The resultant change to Thailand's demographic structure has thus become a threat to sustainable economic and social development (and universities) with the aged population rapidly increasing, whereas the working-age population and school-aged children have been declining rapidly (Searchinger et al., 2013).

As noted above, in 2015 there was less number of students wishing to enter a university program as compared to the available seats. The future appears also bleak as student enrollment in primary and secondary schools also had 800,000 empty seats throughout the country (Sakworawit, 2016). Of the 170 Thai universities, the Rajabhat University system is the mostly likely candidate to face the crunch due to a trend shift in the majors chosen by students, with changes in the labour market having a large impact on non-scientific programs.

Further supporting data for the coming crisis in social science enrollment was seen in the 2015 as the number of participants who entered the national entrance exam dropped to 91,813 students with total availability at 151,000 seats (Numman, 2016). The knock-on effect will eventually be a decrease in graduate students and PhD candidates that are available for academic and research positions. This is already being played out in 2016 by the government's decision to spend 34.3 billion baht to produce 12,290 post-doctoral researcher to meet the development of 10 targeted industries (not the social sciences) and the concept of "Thailand 4.0", which focuses on technological development and innovation (Bangkok Post, 2016). In the 2016 plan, of the 1.07 billion baht earmarked for 300 scholarships, 60 scholarships are slated

for ASEAN and six other countries. Not only the national programs, but also the international programs have become silent in the recent years (Chansiri et al, 2016).

According to statistics from the website of International Association of University Presidents of Thailand, among the top 100 university programs in 2015, music was not listed. The academic pursuit of music is always considered an optional choice by university students with most viewing music as a risky profession in terms of employment and income potential as compared to professions in medicine, engineering, or business.

Enrolments in Thai university music faculties continue to drop and with the subsequent competition in both public and private institutions ever increasing, the standard of quality of students that become enrolled often times becomes suspect and can with time lead to lower standards and/or disqualified students. There also appears to be a relationship between whether a student pursues a music degree from either a public or private institution and how this is viewed by families and society (Chareonwongsak, 2016).

The bottom line is the competition for music students in fierce as enrolments have plummeted due to population demographics, more competitive foreign programs, and online courses which are often significantly lower campus attended tuition rates. Many Thai universities are struggling, particularly private ones, with financial concerns becoming first and foremost the greatest concern of university and program administrators. The ratio between lecturers and students is not in balance and especially, private higher education institutions which mainly rely on tuition fees of students. Therefore, some weak programs will need to be shut down in order to stabilize the organizational structure. It is a time to prepare for change in higher education. Things need to be done now to change the business of education before the corridors are empty and the music has stopped.

The researcher used a structural equation modeling (SEM) to develop and understand the music faculties in Thai private higher education institutions and the variables affecting the organizational sustainability within 74 registered private institutions nationwide. This research will focus on factors that affect sustainability of Thai private higher education institutions' music faculties. There are dramatic changes affected by the decreasing number of population and social value. Survival and to sustain in such a situation in the present circumstance is complicated and difficult and it leads to the main objective of this research.

Literature Review

1. Innovation

Birkinshaw et al. (2008) defined innovation as the creation and introduction and use of new and modern ideas, their processes, related structures and techniques which can further an organization's goals. According to Hamel (2006) organizational innovation can produce seismic shifts in industry leadership through management breakthroughs giving organizations a potent advantage, whereas technology and product innovation tend to deliver limited small-caliber advantages. Put simply, management innovation changes how managers do what they do. Innovative education can be in the form of curriculum, instruction, media, assessment and administration. As technology continues to advance, both students and teachers alike are growing passionate about implementing more tech-focused curriculum in the classroom. There are plenty of innovative tools can be used in the classroom to enhance the performance of teaching and learning such as music notation application, DAW, or utilizing MIDI and sequencers. This is consistent with Organizational innovation management (OIM) is another component which consists of the organization's culture and beliefs which need to be flexible, simple and uncomplicated, focused on decentralization with an ear tuned towards acknowledging the opinions of others which helps achieve continuous improvement (Wong and Chin, 2007). There are three keys of innovation which affect on the sustainability which include product, process and marketing (Mutlu & Er, 2003; Chong & Chan, 2010; Hsu, 2012; Anabel et al, 2013; Hamel, 2006). The literature review has thus led to the creation of the following two hypotheses:

H1: Innovation directly affects Organizational Sustainability

H2: Innovation directly affects Organizational Performance

2. Business Strategies

The Business strategy alludes to the instruments that organizations use to judge the competition in the educational organization sector compared to its rivals (Meskendahl, 2010) which is the competitive strategy, business strategy, or corporate system, is the fabric of verbal and non-verbal communications in business setting the behavioural standards for the business long-term orientation (Johnson et al., 2011) In that capacity procedure ought to influence day by day activities however only or mostly those related to the organizations' expectations of its main activities on a more distant horizon (Porter, 1996) and expressed that a country's competitiveness relies on upon the limit of its industry to innovate and update. The Balanced Scorecard (BSC) was created as a managerial device to support the introduction of successful

organizational strategies, while also helping with the monitoring of organizational performance against strategic goals (Kaplan, R.S. and Norton, 1992). The BSC's four perspectives are: financial, customer, the internal process, and the learning and growth perspective (Figge et al., 2002). The organisation needs to offer special courses yet unique to the market and focus on the prospective students who are the real target group. The BSC has been adapted into what is called the 'Sustainability Balanced Scorecard' (SBSC) which was created to help overcome limitations with use of the BSC in areas such as environmental and social management systems. There are three keys of business strategies which affect on the sustainability which include cost leadership, strategic difference and target group (Sharma, 2008 ; Ansary, 2006 ; Parnell , 2011 ; Pertusa-Ortega et al., 2010; Johnson et al., 2011). The literature review has thus led to the creation of the following two hypotheses:

H3: Business Strategy directly affects Organizational Performance

H4: Business Strategy directly affects Organizational Sustainability

3. Business Environment

According to Jiao et al. (2011) discussed emerging markets while using the resource-based view and determined that sustainability within the business environment was critically linked to flexibility. Lewin et al. (1999) posited that environmental aspects such as environmental dynamism and competitiveness moderate the relationship between both types of innovation and performance. They also indicated that organizational units operating in more dynamic environments increase their performance by pursuing exploratory innovations. The environment is also a key to effective teaching and learning and keeps students motivated. Whether it is a music theory app, or DAW platforms i.e. Garage band, Pro Tools, or Logic, there are a vast amount of tools and software that can be utilized in the classroom to create a good environment. There are three keys of business environment which affect on the sustainability which include government support, customer needs, labour availability (Jiao et al., 2011; Wantao and Ramakrishnan, 2012; Noor, H. A. et al., 2010; Abdulkareem S. A., 2011; Lewin et al., 1999). The literature review has thus led to the creation of the following hypothesis:

H5: Business Environment directly affects Organizational Performance

4. Organizational Performance

The educational organization is considered as a non-profit organization, however, the financial performance becoming ultimately first and foremost, especially private ones. De Waal (2007) focused on the distinguishing variables that decide the consistent achievement of a high performance organization and according to a broad review of the study which included non-financial performance, better financial performance, and sustained growth compared to long-term orientation and over five year's better results. Kaplan and Norton (1992) changed traditional concept of organizational performance measurements with the balanced scorecard. The balanced scorecard indicates that if organizations wish to increase their successful performance they must adhere to the three main ideas of sustainable development which includes economic, environmental and social. There are two keys of organizational performance which affect on the sustainability which include financial performance and non-financial performance (Ricardo et al, 2009; Narentheren & Haim, 2013; Parisa et al, 2013; Heinz, 2001; De Waal, 2007.) The literature review has thus led to the creation of the following hypothesis:

H6: Organizational Performance has a direct effect on Organizational Sustainability

5. Organizational Sustainability

Organizational sustainability has been contended to be an essential objective or goal every educational organization must set, especially, the private institutes when financial result is the key factor to survive. It was expressed to be almost the top of the management plan and it reflects strategic planning and financial results of the organization (Rothwell, 2010). Bertels et al. (2010) reported that a UN study of global CEOs indicated that 93 percent viewed survival as crucial for their firm's success and furthermore indicated from their own report that the key importance to corporate sustainability was organizational culture. Epstein et al. (2014) added that enterprise sustainability depends on the daily effect that a firm has on society, the surrounding environment and the financial impact of the community. There are three aspects of the organizational sustainability which include finance, firm size and management (Osibanjo et al. 2011; Vanessa & Leslie, 2011; Okpara, 2011; Rothwell, 2010).

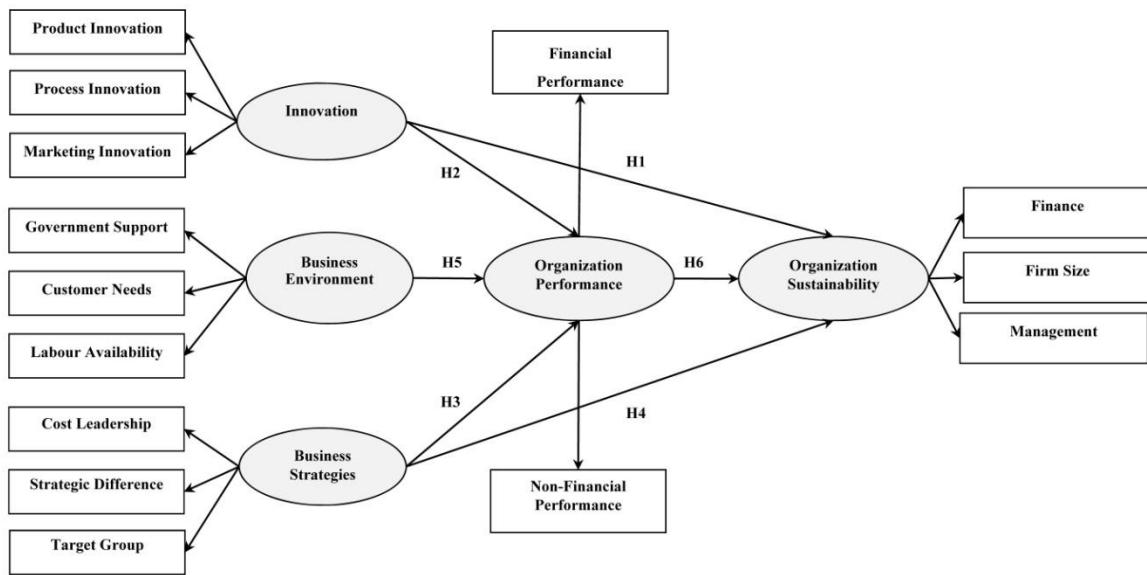


Figure 1: Conceptual Framework

Methodology

The research focuses on the factors affecting the sustainability of private higher education institutions' music faculties in Thailand. The population in this study is a sample of 280 administrative members within the total 74 private higher education institutions and colleges in Thailand which have been registered and licensed by the Office of the Higher Education Commission of Thailand.

Data Collection

It is suggested a 15:1 to 20:1 subject-to-variable ratio as a rule of thumb can be used structural equation modeling (Schumacker and Lomax, 2010; Worthington and Whittaker, 2006; Cunningham, 2008; Weston and Gore, 2006; Meldrum, 2010). As the study had 14 variables, a 20:1 ratio was used to determine the sample size of 280 which was selected by multi-stage random sampling, with the population divided into six regions distributed throughout Thailand, selected in proportion to the population of each group within each region.

Measurement

Samples used for the study included 280 executives and administrators randomly sampled from 6 regions in Thailand. To gauge both content validity and reliability of the survey, 5 experts consisting of scholars and industry executives were chosen to evaluate the consistency of the content and confirm it was valid for the purposes of the research. Additionally, Rovinelli and Hambleton (1977) developed the Item-Objective

Congruence (IOC) which was used to carry out the screening of the survey questions. The result of $\Sigma x/n$ that is higher than 0.5 is considered valid. The study made use of Cronbach's alpha to evaluate the initial questionnaire samples which used a 7-point Likert rating scale. The values of alpha that are considered acceptable, range from a value of 0 to 1 and may be used to describe the reliability of factors extracted from multi-point formatted questionnaires or scales, with a reliability score of 0.70 or higher being considered a reliable score by many researchers (Hair et al, 2006). Although many social scientists disagree on what constitutes adequate validity, for this research convergent validity (e.g., having adequate AVE) was one method used.

Variables

1. Dependent variable

Organizational Sustainability (Sustain) was analyzed by use of a 7-Point Likert Scale (Likert, 1932) which measured Finance, Firm Size, and Management (Management).

2. Intermediate variables

Organizational Performance was analyzed by use of a 7-Point Likert Scale (Likert, 1932) which measured Financial Performance (FinanPer) and Non-Financial Performance (Nonfinan).

3. Independent variables

Innovation (Innovation) was analyzed by use of a 7-Point Likert Scale (Likert, 1932) which measured Product Innovation (Prod_in), Process Innovation (Proc_in) and Marketing Innovation (Market_in).

Business Environment (Bus_envi) was analyzed by use of a 7-Point Likert Scale (Likert, 1932) which measured Government Support (Govern), Customer Needs (Customer) and Labour Availability (Labour).

Business Strategies (Strategy) was analyzed by use of a 7-Point Likert Scale (Likert, 1932) which measured Cost Leadership Strategy (Cost), Strategic Difference (Different) and Target Group (Target_group).

Analysis and Results

Henseler et al. (2014) indicated that PLS is an important statistical tool for research. PLS-Graph software was used to discover the causal relationships of the structural equation model (SEM) as presented in Figure 2 (Piriyakul, 2011). This involved defining the observed or manifest variables with the latent variables, which were then analyzed for their accuracy and reliability of the measurement.

According to the analysis result of scale validity and reliability, scale investigation has been conducted using internal consistency measurement coefficient alpha of Akron BAC (Cronbach) to calculate the average value of the correlation coefficient. It was found that alpha coefficients ranged from 0.725 to 0.856. All values had statistical significance which is considered to have high reliability (Table 1) by ($|t| \geq 1.96$) (Lauro and Vinzi, 2004; Henseler et al., 2009).

In Table 2, discriminant validity and the scale reliability were analyzed from Composite Reliability (CR) as well as the Average Variance Extracted (AVE). The CR value should be maintained above 0.60 while the AVE values be greater than 0.50. Additionally, the coefficient of determination (R^2) value should always exceed 0.20 (Lauro and Vinzi, 2004; Henseler and Fassott, 2010).

Table 1: Convergent validity of the latent variables

	Construct/Item	Loading	t-stat
Organizational Sustainability (Sustain)			
Finance	Finance	0.8531	42.6629
Manage	Management	0.8870	55.0902
Size	Organizational Size	0.8643	46.8357
Organizational Performance (Performace)			
FinanPer	Financial Performance	0.9078	77.4380
Nonfinan	Non-Financial	0.9031	77.5605
	Performance		
Innovation (Innovation)			
Prod_in	Product Innovation	0.8721	44.6352
Proc_in	Process Innovation	0.9011	51.0742
Market_in	Marketing Innovation	0.9224	96.8576
Business Environment (Bus_envi)			

	Construct/Item	Loading	t-stat
Govern	Government Support	0.9321	93.1261
Customer	Customer Needs	0.9572	117.8708
Labour	Labour Availability	0.9256	101.5733
Business Strategies (Strategy)			
Cost	Cost Leadership Strategy	0.9351	95.3369
Different	Strategic Difference	0.9551	121.4790
Target_group	Target Group	0.9391	125.1222

Organizational Sustainability (Sustain) was determined to be affected by Finance (Finance), Management (Manage), and Organizational Size (Size) which had a confidence level of 95% ($|t| \geq 1.96$). These variables have a direct positive influence on *Organizational Sustainability* (Sustain) (Figure 2).

Business Environment (Bus_envi) was determined to be affected by Government Support (Govern), Customer Needs (Customer), and Labour Availability (Labour) which had a confidence level of 95% ($|t| \geq 1.96$). These variables have a direct positive influence on *Business Environment* (Bus_envi) (Table 3 and Figure 2).

Business Strategies (Strategy) was determined to be affected by Cost Leadership Strategy (Cost), Strategic difference (Different), and Target Group (Target_group) which had a confidence level of 95% ($|t| \geq 1.96$). These variables have a direct positive influence on *Business Strategies* (Strategy) (Table 3 and Figure 2).

Organizational Performance (Performace) was determined to be affected by Financial Performance (FinanPer), and Non-Financial Performance (Nonfinan) which had a confidence level of 95% ($|t| \geq 1.96$). These variables have a direct positive influence on *Organizational Performance* (Performace) (Table 3 and Figure 2).

Innovation (Innovation) was determined to be affected by Product Innovation (Prod_in), Process Innovation (Proc_in), and Marketing Innovation (Market_in) which had a confidence level of 95% ($|t| \geq 1.96$). These variables have a direct positive influence on *Innovation* (Innovation) (Table 3 and Figure 2).

Table 2 shows factor analysis results affecting Thai private higher education institutions' music faculties' sustainability with composite reliability in Table 2 greater than 0.60 with the AEV values also greater than 0.50. Coefficient of determination (R^2) values are also higher than 0.20, representing the reliability of the measurement (Lauro and Vinzi, 2004;

Henseler et. al., 2009). Reliable measurements can be found in the column of interest which is higher than the cross construct correlation values in the same column.

Results from the analysis of structural equation modeling of the sustainability of Thai private higher education institutions' music faculty are shown in Figure 2 and Table 3.

Table 2: Statistics showing the discriminant validity

Construct	CR	R^2	AVE	cross construct correlation				
				I.	B.E.	B.S.	O.P	O.S
Innovation (I)	0.926		0.808	0.899				
Business Environment (B.E.)	0.957		0.881	0.801	0.939			
Business Strategies (B.S.)	0.960		0.890	0.742	0.882	0.943		
Organizational Performance (O.P.)	0.901	0.8235	0.820	0.828	0.833	0.862	0.906	
Organizational Sustainability (O.S.)	0.902	0.6201	0.754	0.701	0.723	0.702	0.780	0.868

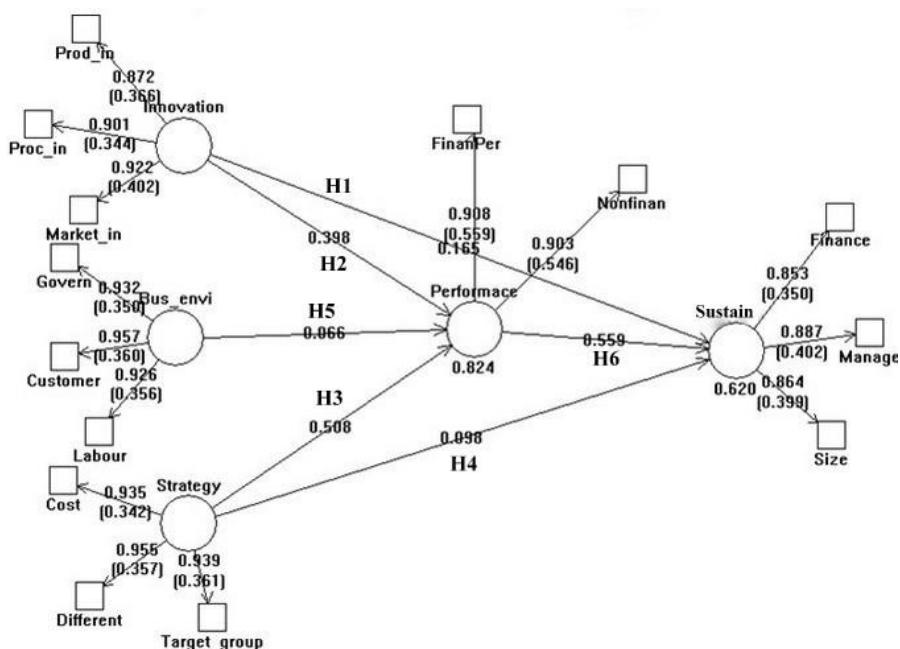


Figure 2: Test to Model Fit

Table 3: Results of hypotheses testing

Hypotheses	coef.	t-stat ¹	Results
H1: Innovation directly affects Organizational Sustainability	0.165	2.0906	Supported
H2: Innovation directly affects Organizational Performance	0.398	9.4282	Supported
H3: Business Strategy directly affects Organizational Performance	0.508	7.7875	Supported
H4: Business Strategy directly affects Organizational Sustainability	0.098	1.1393	Not Supported
H5: Business Environment directly affects Organizational Performance	0.066	.9106	Not Supported
H6: Organizational Performance directly affects Organizational Sustainability	0.559	5.1254	Supported

¹ $|t| \geq 1.96$, means significance at $p \leq 0.05$.

Influence of each of the variables that affect organizational sustainability of Thai private higher education institutions' music faculties is shown in Table 4 below.

Table 4: Direct (DE), indirect (IE), and total (TE) effects of the independent variables

Dependent Variable	R^2	Effect	Independent Variables			
			Innovation	Business Environment	Business Strategies	Organizational Performance
Organizational Performance	0.824	DE	0.398	0.066	0.508	N/A
		IE	0.000	0.000	0.000	N/A
		TE	0.398	0.066	0.508	N/A
Organizational Sustainability	0.620	DE	0.165	0.000	0.098	0.559
		IE	0.222	0.037	0.284	0.000
		TE	0.387	0.037	0.382	0.559

From Table 2, it was found that the variables that influence organizational sustainability the most are innovation, business strategy and business environment, in which the three variables are influenced by variations in organizational performance.

Discussion and Conclusion

Research concluded that organizational performance *directly affects* organizational sustainability to the greatest extent due to monetary and non-monetary factors. It also has an intermediate input into innovation, the business environment and business strategies.

Cohen (2014) has indicated that the transition to sustainability is an impetus for an enterprise to embrace innovation and change. Additionally, educational institutes need to be better developed and managed to better create a higher competitive advantage, while reducing costs leading to better sustainability Epstein et Al. (2014) nine principles of sustainability included the idea that organizations must focus on environmental protection and promote sustainable development with products, processes, and services.

According to the in-depth interview as a qualitative review to confirm the factors, the experts included that improving environment has lesser impact to enhance the sustainability of the organization in a long term. Changes and improvement to catch up today's globalization era with a good business strategy are needed with a careful concern from the administration in all levels. Moreover, the strategic difference from the offered program is important. Most of the programs offered by all institutes, especially in music, are too similar, i.e. music performance and composition, when music actually has varied disciplines besides those mentioned such as musicology, songwriting, music education or music management that can be offered differently to students. This is consistent with Higher Education Development Plan Vol. 12 (2017-2021) which indicated the importance of curriculum development to enhance the learners and even instructors in order to gain trust and reliability from national and international perspectives (Homfung et al, 2016).

This research also concluded that business strategies were not influenced directly through organizational sustainability but instead was indirectly influenced through organizational performance. The innovation process and innovative marketing affect potential competitiveness which in turn affects organizational sustainability. Management of the enterprises must be perceived as creating and producing innovative products.

Strategies within the university must also be stated clearly, which also meets the needs of the learners with cost management being imperative as well. It was also discovered that *business strategies* are aligned with educational *innovation* which therefore affects *organizational performance* of the institutions leading to *sustainability* or the survival of any private higher education institutions' faculty such as music. Within the *business environment* there must also be governmental support and each enterprises has the ability to reduce the

negative impact of the environment among the learning facilities if they develop an ability to determine their own destiny and success when the environment changes.

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