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What are the factors that influence the price of a piano lesson?

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Abstract

This research paper aims to examine the impact of different factors including teacher attributes, educational background, and lesson attributes, on the price of piano lessons in the Bangkok Metropolitan Region, where data was collected through a constructed survey. The piano education industry serves as an example of imperfect competition. While there are previous empirical research studies supporting music education, there is yet to be a research study on this exact topic. Data was treated using statistical analysis tools, and analyzed using three multiple linear regression models. The results indicate that nationality, concert and recital participations, student competitions, full-time teaching, and classical piano lessons are statistically significant, each having an upward pressure on price. All three categories of factors have an impact on price.

I: Introduction

Music lessons have become increasingly popular throughout the past 20 years, piano included, due to the possible benefits of music education. In the United Kingdom, the proportion of children who are able to play an instrument increased from 41% in 1999 to 76% in 2014. From the 35% increase, the piano alone saw a 15% increase in growth, accounting for nearly half the portion of total growth. (ABRSM, 2014) Appendices 1 and 2 illustrates the increase mentioned above. There is no data for the case of Thailand, however, the increase in music-literate children in Thailand should be similar to that of the United Kingdom.

The increase in demand for piano lessons bring to light unanswered questions about the industry: the question as to how prices are determined and the cause for variation. The price of piano lessons can vary greatly, and there is yet to be an explanation why. A student will pay just over 200 baht for one hour of piano lesson, while another will pay as much as 5000 baht for a lesson, which is 250 times the amount of the first student. Despite the enormous price range, there is no data publicly available, nor are there any researches done on the topic. This issue was identified through personal experience and curiosity.

Piano lessons are difficult to measure. There is no clear data or transparency on any aspect of piano lessons. For example, a teacher could give a student lessons, but there will be no record unless the teacher submits an honest, accurate tax payment form containing all information on income. In reality, it is improbable for a teacher to declare their real income, especially when a considerable portion of teachers only teach piano part-time as an addition to

their main job, or alongside their studies. As such, the situation is dire, and the desire for an answer as to why lesson prices vary is strong.

The objective of this paper is to analyze and comprehend why the prices of piano lessons vary and observe any impacts that certain factors may have on price; namely, the factors that allow teachers to charge a higher price per lesson. This paper will focus on all types of piano teachers aged 18 to 65 in the Bangkok Metropolitan Region. Ultimately, this paper aims to find which factors cause a significant upward or downward pressure on the price of piano lessons.

This paper will go through literature review in section 2 with empirical research on the benefits of music education, perception of lesson quality and effectiveness, and music education in Thailand. Section 3 covers theoretical review applicable to this study. Section 4 goes over methodology, including variables and model estimation, and data collection, and section 5 highlights results from this study. Sections 6 and 7 conclude and realize limitations with recommendations respectively.

II: Literature Review

It is widely understood that learning piano at a young age has its benefits, analyzed by Vitale (2011). The author examines the effects of music education on elementary students in the Greater Toronto Area, and the perception of music education from four stakeholder groups: students, parents, non-music teachers, and music teachers. Quantitative findings indicate that musical study increases general cognitive abilities such as problem-solving skills, creativity, and

out-of-the-box thinking. The concept of “music makes you smarter” is mostly validated by those quantitative findings. Perception of stakeholders shows that music’s connection with math and science abilities are present. There is also support for the “music makes you smarter” notion in marketing methods from music education programs. In the case of Thailand, there is a similar notion and belief that “music makes you smarter”. Learning piano, for example, will help children become more responsible, have better focus, and have better cognitive abilities. Thus, able parents will most likely invest in piano education for their children.

The quality of lessons may be one of the reasons explaining the price difference. On the demand-side, Hamann et al. (2000) examines university music students’ perception of lesson quality and teaching effectiveness, where findings indicate that students perceive teachers who are extroverted and have positive group-management skills to be of the best quality. Interestingly, Teachout (1997) and Taebel (1990) determined that teaching skills were significantly more important to students than actual musical skills. This applies to new, inexperienced teachers, and to seasoned university teachers. Administration personnel also placed more importance in teaching skills rather than musical skills when evaluating a teacher’s performance. The overall agreement between these authors seem to be that musical skills are less important than teaching skills when talking about teaching effectiveness.

In Thailand, the quality of music lessons is increasing. Leeswadtrakul and Trakarnrung (2013) studies Dr. Sugree Charoensook’s role in the development of music lessons as the standards raise to international levels. Dr. Sugree Charoensook popularized music education during his time in Mahidol University’s College of Music. An increase in music education implies an increase in music teachers. Williams and Trakarnrung (2015) analyzes pre-service

music educators, focusing on when and why they decided to become teachers. The two main responses were “love of music” and “I felt called to teach,” each earning 29.5% and 28.3% of respondents respectively. It is estimated that respondents who answered “love of music” will continue to teach for longer, and earn an overall higher income than those who answered “I felt called to teach” or otherwise.

Price setters in the music education industry are not buyers, or students/parents, however, are sellers, or the teachers. Hence, the supply-side must be closely examined to fathom how the prices are determined. There are no research papers on the exact topic of piano education pricing as yet, so this research will possibly be the first, or one of the first, covering the determination of piano lesson prices.

III: Theoretical Review

Price Theory

Pricing is a microeconomic principle based on the concept of supply and demand. An equilibrium between supply and demand of a good is found, which determines the price (and quantity) at which the good is sold in the market. (Mankiw, 2015) . In the piano education industry, price is not determined by an individual equilibrium, as it is a differentiated products market. Thus, there can be more than a single equilibrium price. As mentioned above, there are price setters which are the teachers, in which the prices are determined through individual equilibrium, depending on how the teachers differentiate. Students simply choose to accept or

deny that price, therefore providing a sense of demand. The teacher will find his or her individual equilibrium through price setting rather than relying on a single market demand or supply.

Imperfect Competition

The theory of perfect competition holds when there are large amounts of buyers and sellers, thus a single buyer or seller cannot influence the market price, all information about the market is public knowledge, and the goods are homogeneous. (Mankiw, 2015) The music education industry does not fit any of the characteristics of a perfect competition described above. There are relatively small amounts of teachers and students compared to that of a widely manufactured good. There is also imperfect information in the market. Lastly, teachers are heterogeneous, whom differentiate from one another. Thus, the piano education industry can serve as an example for imperfect competition.

Product Differentiation

Product differentiation is the means of distinguishing a “product” from a homogenous group of the same products. Products can be differentiated in many ways, for example, in terms of quality, size, or color. (Nevo, 2000) In the piano education industry, product differentiation is how the teachers distinguish themselves from another teacher in order to make themselves more attractive. Methods of differentiation include, but are not limited to, experience in teaching, teacher examination levels, type of lesson, whether classical piano or otherwise, and many other ways. These methods of differentiation are simply factors that make a teacher different; they are also factors that can influence the pricing of piano lessons.

IV: Methodology

Methodology in different researches are inspected, highlighting similarities and differences in data collection and data analysis to that of this research. In the fish industry, Graddy (1995) tests for imperfect competition at the Fulton fish market, a highly competitive market, therefore, have no predictable differences in price paid for fish. The study uses primary data, collected directly from the Fulton fish market through observation. Factors are then regressed, using three-stage least squares. Similar in methodology, Sethuraman and Cole (1999) examines the factors influencing price premiums that consumers pay for national brands over store brands. Factors are then regressed using weighted least squares, determining which factors are significant and contribute to an increase in price premiums, using primary data collected from the midwest area in the United States of America.

Likewise, this research study collects and uses primary data through surveys, then finding results through multiple linear regression with estimation using ordinary least squares. This method is the most widely used due to its effectiveness in identifying significant variables, predicted to have an effect on a dependent variable, while not over complicating matters. It allows for the analysis of several variables explaining price. It is determined that this method of analysis is the most suited to treat the data collected for this research. The ultimate goal is to find factors that are statistically significant in effectively determining the price of piano lessons.

Variables and Model Estimation

This paper would like to see the effects of different factors on the price of piano lessons. Thus, the most important will be “price” as the dependent variable. Price is a continuous variable, with the value reflecting the baht amount of the lesson cost. Independent variables include factors that have a possibility of affecting the price of lessons, divided into three different categories; teacher attributes, teacher education, and lesson attributes. All three groups of independent variables have both continuous and dummy variables. A list of all variables with a brief explanation is in figure 1 below.

In this section, three models estimating the price of piano lessons are presented. The three categories of independent variables will be inspected. Model A will only look at price with respect to teacher attributes (X_{1i}). Teacher attributes include age, nationality, concerts, recitals, competitions and winnings, student competitions, experience, fame, and awards.

$$\text{Model A:} \quad PRICE_i = X_{1i} + \varepsilon_i$$

In addition to teacher attributes, teacher education (X_{2i}) is in consideration in model B. Teacher education includes the piano examination level, examination affiliation, education level, education location, and the concentration of education.

$$\text{Model B:} \quad PRICE_i = X_{1i} + X_{2i} + \varepsilon_i$$

Lastly, model C expands the previous models by adding in lesson attributes (X_{3i}), the last category of factors. Lesson attributes include the locations in which the lessons are conducted, whether the teacher works full-time or part-time conducting lessons, and the type of lessons conducted, classical piano or otherwise.

$$\text{Model C:} \quad PRICE_i = X_{1i} + X_{2i} + X_{3i} + \epsilon_i$$

To fully illustrate the variables in models A through C:

$$X_{1i} = \beta_1 AGE + \beta_2 NAT + \beta_3 CON + \beta_4 REC + \beta_5 COMP + \beta_6 WIN$$

$$+ \beta_7 ST_COMP + \beta_8 EXP + \beta_9 FAME + \beta_{10} AWARD$$

$$X_{2i} = \beta_{11} EXAM + \beta_{12} ABRSM + \beta_{13} EDUC_LVL$$

$$+ \beta_{14} EDUC_PLACE + \beta_{15} EDUC_STUDY$$

$$X_{3i} = \beta_{16} HOME + \beta_{17} STUDIO + \beta_{18} SCHOOL + \beta_{19} UNIV + \beta_{20} FULL + \beta_{21} CLASSIC$$

Figure 1: A list of variables and brief explanations for each variable

Variable	Type	Explanation and Details
PRICE	Continuous	Average price of lessons for the teacher, in Thai Baht (THB) Lowest = 210 baht; Highest = 4000 baht
AGE	Continuous	Age of teacher Lowest = 18 years; Highest = 65 years
NAT	Dummy	=1 if the teacher is Thai; =0 Otherwise
CON	Dummy	=1 if the teacher has participated in a concert before; =0 Otherwise
REC	Dummy	=1 if the teacher has participated in a recital before; =0 Otherwise
COMP	Dummy	=1 if the teacher has participated in a competition before; =0 Otherwise
WIN	Dummy	=1 if the teacher has won a prize in a competition before; =0 Otherwise
ST_COMP	Dummy	=1 if the teacher's students enter competitions; =0 Otherwise
EXP	Continuous	Number of years the teacher has been teaching piano (experience) Lowest = 1, Highest = 31
FAME	Continuous	Assessment of the teacher's fame level Lowest = 1 (not known at all); Highest = 5 (known to the general public)
AWARD	Dummy	=1 if the teacher has received special awards; =0 Otherwise
EXAM	Continuous	Level of the teacher's highest completed piano examination level Grades 1-8 = 1-8, PC-Level = 9, A-Level = 10, L-Level = 11, F-Level = 12
ABRSM	Dummy	=1 if the examination was with the Royal College of Music; =0 Otherwise
EDUC_LVL	Continuous	Highest level of education, or degree, the teacher has achieved High School = 1; Bachelor's = 2; Master's = 3; Doctorate = 4
EDUC_PLACE	Dummy	=1 if the education was completed in Thailand; =0 Otherwise
EDUC_STUDY	Dummy	=1 if the concentration of study was music-related; =0 Otherwise
HOME	Dummy	=1 if the teacher conducts lessons at home; =0 Otherwise
STUDIO	Dummy	=1 if the teacher conducts lessons at a music studio; =0 Otherwise
SCHOOL	Dummy	=1 if the teacher conducts lessons at a music school; =0 Otherwise Example: Yamaha, KPN, Churairat, etc.
UNIV	Dummy	=1 if the teacher conducts lessons at a university; =0 Otherwise
FULL	Dummy	=1 if the teacher teaches full-time; =0 if the teacher teaches part-time
CLASSIC	Dummy	=1 if the teacher teaches classical music; =0 Otherwise

Data Collection

This study was carried out in the Bangkok Metropolitan Region (BMR). Participants consists of all types of piano teachers between 18 - 65 years of age. These teachers are considered as the target sample population. Data collection and sampling were carried in the time period between February to April 2017, and a total of 232 observations were collected with an emphasis on quantitative data, but qualitative data collection was also carried out as applicable. Out of all participants, 94% were Thai nationals and 6% were foreigners residing in Thailand. Only 41% of participants teach piano full-time, while the other 59% teach part-time. Different music schools all around were randomly picked, and teachers in the music schools were interviewed. This was done through a physical survey that participants were asked to fill out, along with a consent form agreeing to share honest and accurate information in exchange for full confidentiality. Teachers receive no financial gain from participating in this study.

The survey consists of 5 sections. The consent form confirms the agreement to participate. Section 1 asks for background information such as age and nationality, and information about the teacher such as experience and awards. Section 2 looks at educational background, both general and piano-related, including educational level, concentration of study, piano examination level and affiliation, and so on. Lesson attributes are covered in section 3, including the location of the lessons, whether the participant teaches full-time, and the type of lessons conducted. Section 4 asks for the price of piano lessons, with four different levels of difficulty, including beginner, intermediate, advanced, and expert. The price used in data calculation is the average of the four difficulties. Section 5 provides a thank you note, and asks whether the participant would like a follow-up to the study as an email providing the results and

findings of this study when completed. The last section also allows the teacher to provide any qualitative information they wish to share, or provide any comments that may be useful to the study. A full copy of the survey is attached in the appendix.

V: Results and Findings

Figure 2: Summary statistics using basic mathematical tools

Variable	Obs.	Mean	Std. Dev.	Min	Max
PRICE	232	743.35	758.27	210	4000
AGE	232	30.21	11.08	18	65
NAT	232	0.94	0.24	0	1
CON	232	0.41	0.49	0	1
REC	232	0.09	0.29	0	1
COMP	232	0.46	0.5	0	1
WIN	232	0.05	0.21	0	1
ST_COMP	232	0.3	0.46	0	1
EXP	232	8.52	7.52	1	31
FAME	232	1.41	0.97	1	5
AWARD	232	0.05	0.21	0	1
EXAM	232	8.34	1.84	5	12
ABRSM	232	0.38	0.49	0	1
EDUC_LVL	232	2.1	0.54	1	4
EDUC_PLACE	232	0.91	0.28	0	1
EDUC_STUDY	232	0.39	0.49	0	1
HOME	232	0.16	0.37	0	1
STUDIO	232	0.41	0.49	0	1
SCHOOL	232	0.47	0.5	0	1
UNIV	232	0.03	0.17	0	1
FULL	232	0.41	0.49	0	1
CLASSIC	232	0.67	0.47	0	1

Basic Data Analysis

A total of 232 observations were collected, and summary statistics are shown above in figure 2. The average price of piano lessons is 743.35 baht, with a standard deviation of 758.27 baht. This strongly supports as evidence for the wide range of lesson prices, and proves that the problem exists. A histogram is shown below to illustrate the spread. The average age of the sample population is 30 years; 31.90% are aged 18-22 years, 61.64% aged 23-50 years, and 6.46% aged 50-65 years. It is further observed that the majority of participants aged 18-22 years are part-time piano teachers, still high school or university students, mostly teaching beginner and intermediate piano lessons. Vice versa, of the participants aged 50-65 years, the majority teaches full-time with a focus on advanced and expert piano lessons. It is yet unclear how these factors affect the price of lessons; therefore, multiple regression analyses with ordinary least squares method were carried out, using the three models described above in methodology.

Figure 3: Histogram illustrating the range of prices

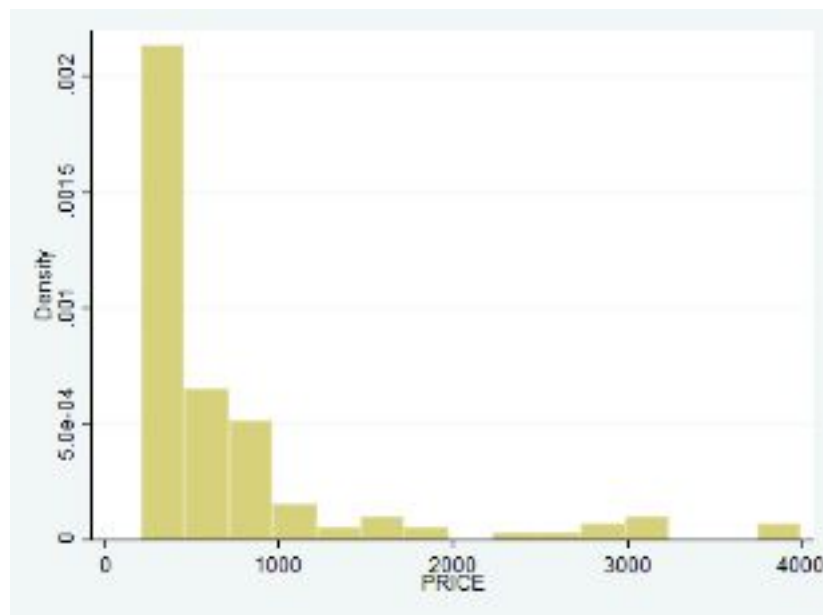


Figure 4: Regression results for models A through C

VARIABLES	(A) PRICE	(B) PRICE	(C) PRICE
AGE	8.983* (4.994)	3.615 (5.065)	-0.984 (5.046)
NAT	637.9*** (211.4)	709.5*** (197.4)	590.4* (315.2)
CON	96.14*** (29.73)	98.50*** (31.93)	61.00** (30.13)
REC	1,535*** (279.1)	1,569*** (243.2)	1,628*** (283.8)
COMP	14.49 (23.47)	-8.826 (32.12)	26.52 (51.16)
WIN	397.4* (220.3)	182.5 (261.5)	168.6 (258.8)
ST_COMP	135.6** (53.08)	122.4** (50.32)	142.2** (62.38)
EXP	21.21*** (7.948)	24.05*** (8.606)	23.36*** (8.736)
FAME	9.421 (91.62)	-56.88 (85.01)	5.988 (90.99)
AWARD	486.2*** (185.7)	367.0* (215.7)	415.9** (204.6)
EXAM		22.23** (8.586)	-12.20 (13.87)
ABRSM		48.44 (30.12)	70.31* (36.97)
EDUC_LVL		149.9* (84.17)	141.8* (82.02)
EDUC_PLACE		-198.1 (216.0)	-325.3 (224.4)
EDUC_STUDY		49.40 (32.03)	97.50*** (37.43)
HOME			-253.3** (119.2)
STUDIO			37.20 (159.2)
SCHOOL			55.24 (146.7)
UNIV			-381.1 (295.8)
FULL			91.48** (39.44)
CLASSIC			159.1*** (47.95)
Constant	-595.3*** (211.0)	-761.4*** (260.8)	-346.6 (303.0)
Observations	232	232	232
R-squared	0.931	0.938	0.945

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Model A: Teacher Attributes

Model A involves a total of 10 teacher attribute factors; of those, 6 are statistically significant with at least 95% level of confidence. The value of R-squared equal to 0.931 is exceptionally high, especially for model A which includes only basic teacher attribute factors. It means that these factors can explain 93.10% of the variation in piano lesson prices. This result implies that the influence of these factors on the price is evident.

Nationality, concert, recital, experience, student competitions and award are significant in this model, and all have positive coefficients. This depicts that a unit increase in any of those variables will affect price positively. For example, a one-year increase in experience predicts a 21.21 baht increase in price per hour of lessons. For dummy variables such as recital, if the teacher has performed in a recital before, it is predicted that the price will be 1535 baht higher than teachers who have not. Likewise, teachers who are not Thai nationals are estimated to charge 637.9 baht higher than Thai nationals. Age is significant to a certain extent in these results ($p < 0.1$), but pale in comparison to the other factors which are more statistically significant. It can be inferred that although age affects price level, other factors have a stronger, clearer impact. In this model, nationality, participation in concerts or recitals, student competitions, experience, and awards are the factors that influence the price of lessons; age, participation in competitions and winning, and fame do not.

Model B: Teacher Attributes and Teacher Education

Model B expands model A by increasing the amount of variables to be inspected, now including teacher education. The R-squared of this model is slightly higher than that of model A, thus explaining the variation slightly better. Through observation, many variables in teacher attributes still remain significant, namely, nationality, concert, recital, student competitions, and experience. Awards now pale in comparison when other factors are taken into consideration, hence is ruled out as insignificant.

In the teacher education category, factors that are statistically significant are the teacher's piano examination level, and education level. A unit increase in examination level, that is, one higher grade level of piano exams completed, estimates a 22.23 baht increase in the lesson price. Likewise, a unit increase in education level, or an increase in academic degree estimates a 149.9 baht increase in lesson price. Other factors that describe the teacher's education background are insignificant. Surprisingly, the concentration of study of the teacher is insignificant in this model. It implies that teachers who have a concentration in music or music-related topics are not predicted to charge a higher lesson price. It also means that teachers who studied non-music topics charge as high of a price as music-related graduates. To sum up, model B helps rule out less significant variables in teacher attributes, and identifies significant factors in teacher educational background.

Model C: Teacher Attributes, Teacher Education, and Lesson Attributes

Model C further expands models A and B by including factors describing lesson attributes. This model has the highest value of R-squared, meaning that out of all three models, model C best estimates or provide an explanation for the variation in price. The same factors in teacher attributes still remain unchanged; however, nationality and concerts became less significant as more factors were taken into consideration. Factors concerning teacher education adjusted. Examination levels are no longer significant in model C, while the concentration of study became particularly significant. This result is reverse to that of model B. It suggests that examination levels were significant and concentration insignificant if only teacher attributes and teacher education were considered. However, with the addition of lesson attributes, the roles are reversed.

Lesson attributes are considered significant in terms of type of lesson (classical or otherwise), whether the teacher works full-time or part-time, and if the lessons were conducted at home. Both full-time and classical have positive coefficients, suggesting that full-time teachers and classical piano lessons are charged more than part-time and other types of lessons respectively. However, the coefficient on home is negative. It means that teachers who conduct their lessons at home, either the teacher's own home or the student's home, have lower prices. On average, lessons conducted at home costs 252.3 baht less than those conducted elsewhere. Other factors concerning lesson attributes are considered statistically insignificant. Therefore, it can be concluded that classical, full-time, and home are the significant factors for lesson attributes.

VI: Conclusion

Music, especially piano, has become an important part in many children's lives during the past decade. In Thailand alone, there is a notion that middle income families should send their children to learn music, either because of social norms, or the actual benefits of studying music. As such, piano lessons are increasing in demand, and the range of prices ever expanding. There has been clear explanation as to how and why lessons are priced differently, and what standards are used in order to price these lessons. Therefore, this paper aims to discover the price mechanism of piano lessons, namely, the factors that influence the price of piano lessons.

This research examines the relationship between three categories of factors (teacher attributes, teacher education, and lesson attributes) and price. Three models were constructed to best estimate the effects of these factors on pricing. Results show that teacher attributes of nationality, concert, recital, student competitions, and experience remained significant in all three models, establishing a strong evidence that an increase these factors have an upward influence on the price. Teacher education factors are inconclusive. While examination levels were significant in one model, it became insignificant in another. Similarly, concentration of study were insignificant in one model, but became significant in another. Full-time and classical in lesson attributes have an upward influence on price, while home has a downward influence on price. All in all, factors that have an unquestionable effect on the price of piano lessons are: nationality, concert, recital, student competitions, home, full-time, and classical.

This information can be used by both students and teachers in the piano education market. As price setters, teachers have full information on their characteristics and abilities. They can more accurately estimate the optimal price of their lessons. Similarly, students can effectively choose their teachers and evaluate the price of lessons fairly.

VII: Limitations and Recommendations

Time constraints and human error are sizable limitations of this research study. Due to time constraints, only 232 observations were collected, and they were only collected around the Bangkok Metropolitan Region. As such, this study can only describe the pricing of piano lessons in the Bangkok area only. Sample size is also considered very small compared to the number of piano teachers in Bangkok alone. Furthermore, this research topic lacks previous research originating from Thailand; as such, most literature review papers used are based on other countries, which may or may not be suitable for the case in Thailand. Human error is an inevitable error and exists in every research, however, this study failed to take into account a crucial factor in teacher attributes, gender. Thus, this study does not have any results or implications about gender and pricing.

For further study, the research can be improved by minimizing the limitations and errors mentioned above. With more time, more observations covering a larger portion of Thailand can be researched. This will hopefully produce even more accurate results. In addition, further research should also include gender into the factors to be considered. Piano is also not the only instrument lessons are offered for. Further research studies may also look into the pricing of

other musical instruments' lessons, and whether they also have a wide range of prices, or if piano is the sole exception. Lastly, this research study focuses on the supply-side for the piano education industry. It will be very interesting to examine the demand-side as well, and compare the impact of each on the price of piano lessons.

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Excluding the title page, tables, images, references, and appendices

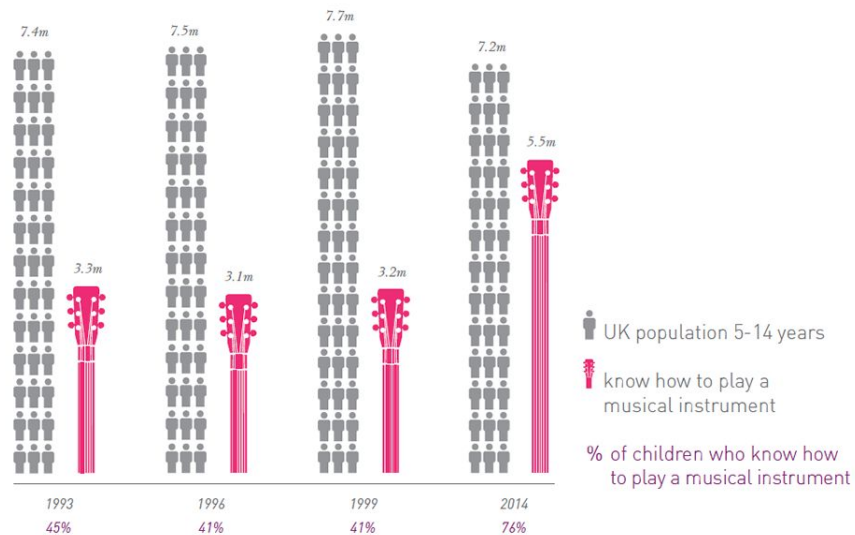
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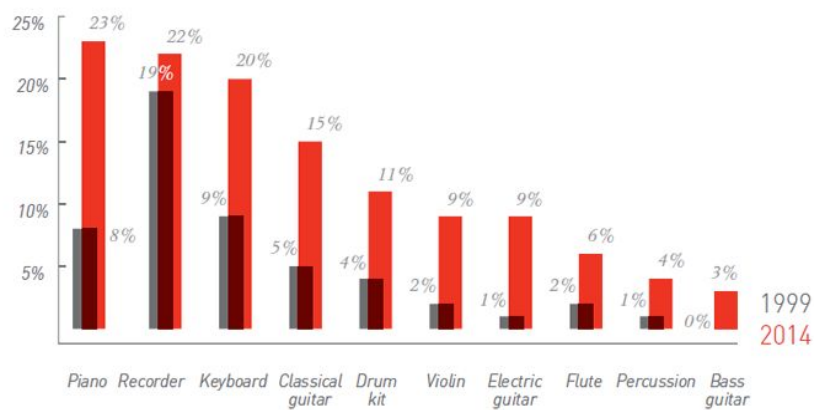
IX: Appendices

Appendix 1: Instrumental playing: Population estimate based on child learners



ABRSM. (2014). Making Music. Retrieved from <https://gb.abrsm.org/en/making-music/>

Appendix 2: Instrument played: Child learners



ABRSM. (2014). Making Music. Retrieved from <https://gb.abrsm.org/en/making-music/>

Appendix 3: Regression result for model A

Linear regression	Number of obs	=	232
	F(10, 221)	=	128.21
	Prob > F	=	0.0000
	R-squared	=	0.9310
	Root MSE	=	203.57

PRICE	Robust		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
AGE	8.983146	4.994043	1.80	0.073	-.8588965	18.82519
NAT	637.9358	211.4029	3.02	0.003	221.3123	1054.559
CON	96.1422	29.7317	3.23	0.001	37.54826	154.7361
REC	1535.139	279.0807	5.50	0.000	985.1393	2085.139
COMP	14.48844	23.47441	0.62	0.538	-31.77391	60.75079
WIN	397.4447	220.3417	1.80	0.073	-36.79508	831.6844
ST_COMP	135.6464	53.08189	2.56	0.011	31.03491	240.2579
EXP	21.21213	7.947821	2.67	0.008	5.548911	36.87535
FAME	9.42065	91.62336	0.10	0.918	-171.1467	189.988
AWARD	486.1624	185.6701	2.62	0.009	120.2518	852.073
_cons	-595.3146	210.9726	-2.82	0.005	-1011.09	-179.539

Appendix 4: Regression result for model B

Linear regression	Number of obs	=	232
	F(15, 216)	=	102.71
	Prob > F	=	0.0000
	R-squared	=	0.9383
	Root MSE	=	194.71

PRICE	Robust		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
AGE	3.614612	5.06531	0.71	0.476	-6.369152	13.59838
NAT	709.4517	197.3674	3.59	0.000	320.4392	1098.464
CON	98.50483	31.92733	3.09	0.002	35.57582	161.4338
REC	1568.785	243.1917	6.45	0.000	1089.452	2048.117
COMP	-8.82551	32.12022	-0.27	0.784	-72.1347	54.48368
WIN	182.484	261.5353	0.70	0.486	-333.0041	697.9721
ST_COMP	122.3915	50.32312	2.43	0.016	23.20427	221.5787
EXP	24.05227	8.605638	2.79	0.006	7.090495	41.01405
FAME	-56.87697	85.01021	-0.67	0.504	-224.4327	110.6788
AWARD	366.9774	215.7217	1.70	0.090	-58.21164	792.1665
EXAM	22.22773	8.58643	2.59	0.010	5.303817	39.15165
ABRSM	48.44018	30.12049	1.61	0.109	-10.92754	107.8079
EDUC_LVL	149.8571	84.17352	1.78	0.076	-16.0495	315.7638
EDUC_PLACE	-198.0678	215.9643	-0.92	0.360	-623.735	227.5993
EDUC_STUDY	49.404	32.03328	1.54	0.124	-13.73383	112.5418
_cons	-761.4269	260.84	-2.92	0.004	-1275.544	-247.3093

Appendix 5: Regression result for model C

Linear regression	Number of obs	=	232
	F(21, 210)	=	88.01
	Prob > F	=	0.0000
	R-squared	=	0.9449
	Root MSE	=	186.76

PRICE	Robust					
	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
AGE	-.984452	5.045673	-0.20	0.845	-10.93111	8.962208
NAT	590.3832	315.2398	1.87	0.062	-31.05688	1211.823
CON	60.9996	30.12707	2.02	0.044	1.609351	120.3898
REC	1628.261	283.7667	5.74	0.000	1068.865	2187.658
COMP	26.5223	51.16144	0.52	0.605	-74.33351	127.3781
WIN	168.6082	258.7534	0.65	0.515	-341.4787	678.6951
ST_COMP	142.2426	62.37614	2.28	0.024	19.27899	265.2062
EXP	23.36094	8.73627	2.67	0.008	6.138914	40.58296
FAME	5.987656	90.98902	0.07	0.948	-173.3813	185.3566
AWARD	415.8729	204.6468	2.03	0.043	12.44756	819.2983
EXAM	-12.2034	13.86986	-0.88	0.380	-39.5454	15.13861
ABRSM	70.31304	36.96666	1.90	0.059	-2.560262	143.1863
EDUC_LVL	141.8467	82.02408	1.73	0.085	-19.84939	303.5428
EDUC_PLACE	-325.3212	224.4046	-1.45	0.149	-767.6956	117.0533
EDUC_STUDY	97.50457	37.43266	2.60	0.010	23.71264	171.2965
HOME	-253.3136	119.2362	-2.12	0.035	-488.3668	-18.26034
STUDIO	37.20038	159.1563	0.23	0.815	-276.5484	350.9492
SCHOOL	55.23705	146.7362	0.38	0.707	-234.0276	344.5017
UNIV	-381.1073	295.757	-1.29	0.199	-964.1404	201.9259
FULL	91.47601	39.43528	2.32	0.021	13.73627	169.2157
CLASSIC	159.1492	47.95263	3.32	0.001	64.61901	253.6794
_cons	-346.5883	302.9747	-1.14	0.254	-943.8497	250.6732

Appendix 6: Detailed statistics on price

PRICE				
	Percentiles	Smallest		
1%	210.00	210.00		
5%	210.00	210.00		
10%	250.00	210.00	Obs	232
25%	320.83	210.00	Sum of Wgt.	232
50%	450		Mean	743.35
		Largest	Std. Dev.	758.27
75%	820.00	3750.00		
90%	1500.00	4000.00	Variance	574976.60
95%	2833.33	4000.00	Skewness	2.51
99%	4000.00	4000.00	Kurtosis	9.10

Appendix 7: Consent form for participants agreeing to participate in this research study

Consent to Participate in the Research Study Thammasat University • Bachelor of Economics

Title of Study: An analysis of the pricing mechanism of piano lesson pricing

Researcher: Nudruja Kiatipanya Bachelor of Economics #5704641306 Tel: 080-622-0101

Introduction: You are being asked to participate in a research study of piano lessons pricing. You were selected as a possible participant because of your status as a piano teacher. I ask that you read this form and ask any questions that you may have before agreeing to be in the study

Purpose of Study: The purpose of the study is to find out whether certain factors or characteristics of a piano teacher can influence the price of piano lessons. Ultimately, this research is for educational purposes and may be presented as a paper for the subject EE489: Seminar in Industrial Economics.

Description of the Study Procedures: If you agree to participate in this study, you will be asked to do the following: state the price of your lessons, reveal your age, nationality, background, education, experience, and other factors that may benefit the study. The length of participation will only last a few minutes, and data is collected only once.

Risks and Benefits of Being in the Study: There are no reasonable or foreseeable risks, however, there may be unknown risks. There are no expected benefits of being in the study, other than my utmost gratitude.

Confidentiality: Records of this study will be kept strictly confidential. Name records are kept private, only accessible by the researcher for educational purposes and to avoid duplication only. I will not include any information in any report I may publish that would make it possible to identify you. Additionally, you also have the option to exclude your name altogether.

Right to Refuse or Withdraw: The decision to participate is entirely up to you. You may refuse to participate at any time without affecting your relationship with the researcher. You have the right not to answer any question, as well as to withdraw completely from the study at any point. You also have the right to request that the researcher does not use any of your data in the study.

Right to Ask Questions and Report Concerns: You have the right to ask questions about the study and to have them answered before, during, or after the research. If there are any additional questions, feel free to contact me, Nudruja Kiatipanya, at nudrujak@gmail.com, or by telephone at (+66)80-622-0101. Additionally, a summary of the results of the study will be sent to you upon request.

Consent: Your signature, or initials if you prefer to be anonymous, indicates that you have decided to be research participant for this study, and that you have read and understood the information provided above. Thank you for your generosity.

Participant's Name:

Date:

Participant's Signature:

Researcher's Name: Nudruja Kiatipanya

Date:

Researcher's Signature:

Appendix 8: Survey questionnaire used to collect data

Survey Questionnaire

Please answer all questions marked with an asterisk (). Any questions not marked may be skipped. Please select only one answer for yes/no questions and multiple choice questions.*

Section I: Basic Information. Please answer all required questions (*).

1. Name:
2. Email:
3. Age*
4. Nationality*
5. Are you a piano teacher?*
- Yes No
6. How long have you been playing piano?
7. How many years have you been teaching piano?*
8. Have you received any special awards for piano?*
- Yes No
9. Have you participated in any piano competition?*
- Yes, with prize Yes, no prize No
10. Have you participated in any piano concert?*
- Yes No
11. Have you had your own recital?*
- Yes No
12. Have you entered any of your students into a piano competition?*
- Yes, with prize Yes, no prize No

Section II: Educational Background. Please answer all required questions (*).

13. Highest Education Level*

High School

Bachelor's Degree

Master's Degree

Doctorate Degree

14. Concentration of Study Done in #13 above*

15. Where was #13 completed?*

Thailand

Other (please specify)

16. Did you take any piano examination(s)?*

Yes

No

17. If yes, with whom did you take your examination(s) with?*

ABRSM

Trinity

Other (please specify)

18. If yes, what was the highest examination level you took and passed?*

Gr. 5

Gr. 6

Gr. 7

Gr. 8

ARSM

DipABRSM/ATCL

LRSM/LTCL

FRSM/FTCL

Other (please specify)

Section III: Lesson Information. Please answer all required questions (*).

19. Where are your piano lessons conducted?*

Home

Studio

Yamaha

KPN

University

Other (please specify)

20. Please specify the location (district in Bangkok) where lessons are conducted

21. Do you teach part-time for full-time?*

Part-time

Full-time

22. What type of lessons do you teach?*

Classical

Pop

Modern

Other (please specify)

Section IV: Prices for Each Lesson (1 hour). Please answer all required questions (*).

Price of Beginner Lessons (Initial - Grade 2)*

Price of Intermediate Lessons (Grade 3 - Grade 5)*

Price of Advanced Lessons (Grade 6 - Grade 8)*

Price of Expert Lessons (Diploma and Above)*

Section V: Optional Comments Section. If there is anything else you would like to say, or if there are any comments, please feel free to do so.

You have now completed the survey questionnaire. Thank you very much for your cooperation.

Would you like a copy of the results of this research paper?

Results will be sent by email, and will only be sent if an email was provided in section I.

Yes

No

*Thank you,
Nudruja Kiatipanya*

END OF RESEARCH PAPER