

## Curves Don't Lie: The Cost Curve Analysis of a Belly Dance Studio

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### Abstract

In a highly competitive environment with slight product differentiation, managers should focus their business resources in two areas: marketing strategy and cost structure. Dance studios and academies fall into this category. They provide a service under a highly competitive setting in which minor errors in estimations might take the business from profits to losses. The case-study of *Hip Expression* Belly Dance studio offers insights of the managerial process on how to develop a profitability outlook and cost analysis at different output levels and market assumptions. The revenue-cost analysis forecasts profit-maximizing prices and the monthly number of classes to be offered in a new location.

**Keywords:** Case study, cost curves, demand curves and demand function, marginal analysis, dance and fitness studios

Johanna Xenobia DeShazo feels the joy of fulfillment as she sips her champagne at the sixth anniversary party of *Hip Expressions*, the largest and most popular Belly Dance studio in St. Petersburg, FL. After two years of struggling to break even, the first five months of 2014 continuously yielded positive figures. In her reflection, Johanna is thankful to her co-founder Karen Sun-Ray and all the dance instructors for their unceasing dedication to carry on *Hip Expressions*' mission: to create a community for belly dancers, either for fun and fitness or for the passion of choreographic arts.

In fact, the expertise of the instructors has made its name popular to the dance and cultural community in South Tampa. An agreement in which *Hip Expressions* instructors teach two classes per week at *Happy To Be Hooping* studio in South Tampa has been a great success: the classrooms were always full and the students asked for more classes. Even though most of the current members live in St. Petersburg and southern Pinellas County, about 11 percent of the members drive across the bridge from Tampa to St. Petersburg to join the studio. Catching herself drifting away in the dream of expanding eastward, Johanna wonders whether to contact Mary Moran to assist her in the financial planning of this new and promising endeavor. Because resources are tight and competition is fierce among dance studios, Johanna wants to make sure that the optimal prices and number of classes per month are determined before opening the Tampa location.

### I. The Belly Dance Fever and its Followers in South Tampa

In spite of its cultural controversies, Belly Dance or RaqShaqi, the Arabic name for this Middle Eastern dance, became a new fitness-athletic alternative for women in American metropolitan cities in the 1990s (Moe, 2012). Navigating through contradictory beliefs and values, the dance has gained more acceptance and appreciation for its health and social benefits as well as its enchanting feminine beauty (Maira, 2008; Hesser, 1999). The increasing acceptance of Belly Dance is also evidenced in the diversity of *Hip Expressions* members (see Figure 1).

#### Refer Figure 1

A Belly Dance studio business is categorized in the gym and fitness industry. Among all the gyms and dance studios (including ballet and ball room dance) in the Tampa Bay area, there are only two other studios that offer Belly Dance choreography. Moreover, *Hip Expressions* studio

has a competitive advantage thanks to its wide variety of dance activities, the opportunity for students to voluntarily join troupes to perform in front of an audience, and the affordability of membership prices. The studio operating highlights are summarized in Table I.

**Refer Table I**

The enthusiasm and requests from residents in South Tampa convinced Johanna to call her friend and owner of a business consultant firm in Tampa, Mary Moran, to assist her with the business plan of the new location. It would be ideal that the future studio in Tampa had similar characteristics to the one in St. Petersburg with its affordability and proximity to I275. Johanna was lucky to rent the second story of a law firm building for \$1,100 per month, but this rent might not be possible in South Tampa. The ideal location would need to be between 1700 to 2000 sq. foot venue with hard wood floor, which can be divided into three relatively equal rooms to make two dance studios and a reception area. The location must be close to main streets in South Tampa but away from traffic congestions during rush hours. The location must also be accessible to a large parking space or street parking. She already spotted some buildings in the area, but rents range between \$1,600 and \$2,000 per month.

Moreover, in order to maintain *Hip Expressions'* current quality and values, Johanna rules out any chance of having more than 20 students in one dance class. Three months ago, all these concerns were discussed with Mary. Today, Johanna received a call from Mary's assistant to set an appointment and discuss the profitability outlook and the optimal price to offer at the *Hip Expression* Tampa branch.

**II. Hip Expressions Cost Analysis**

While relaxing at the veranda of her favorite coffee shop, Johanna reviewed Mary's package. It seems that Johanna's brave decision to offer the one-month trial membership at \$49.99 in February and the \$39.99 in December last year worked well in improving revenues and profits in the St. Petersburg location. This information complemented with other competitor's prices in the Tampa area produced an approximate demand program for the Tampa branch. Figure 2 shows the potential demand curve constructed using data from Table II. Johanna was no expert in finance, but she knew that her competitors' prices would give her an estimated price for her own business.

**Refer Figure 2**

**Refer Table II**

The St. Petersburg location offers ancillary products such as dance costumes, dance and music DVDs, and admissions to the monthly show case, which yield an honest profit and fulfill the necessity of a complimentary ambience. With the new Tampa location, Mary suggested not to focus on ancillary products but save all her efforts in attracting committed membership by offering a one-month unlimited access package of \$62 per month. Two months ago, the manager at the St. Petersburg location proposed that Johanna sets a price of \$66 and offers 80 to 90 courses per month. Johanna agreed with these numbers, but wanted to corroborate them with Mary's analysis. Based on the consolidated statements of operating income from the St. Petersburg's branch, Mary prepared an estimated cost structure for the Tampa branch (Table III).

**Refer Table III**

The new studio in Tampa will benefit from economies of scope as most of its marketing expenses will be covered by the St. Petersburg location. Besides the higher rent at the new location, Johanna has to consider a higher average wage for dance instructors to compensate for the commute (most of the instructors live in St. Petersburg). The instructors' wage will be \$45

per hour (\$5 higher per hour). A store manager will be hired to incorporate all the activities such as paying bills, collecting revenues from off-studio activities, planning instructors' schedules, and coordinating special events. A part-time receptionist will also be hired to take care of registration, front-desk activities, opening the studio, and tidying things up early mornings. The receptionist's and studio manager's salary will be set at the same rates as those employed by St. Petersburg studio. Johanna's ambition is to have classes on at least six days a week to offer a flexible schedule for potential dancers with tight work hours. To maintain the variety of activities, she will try to schedule at least two choreography classes per day.

Overall, Johanna's expansion seems profitable while carrying on *Hip Expressions'* overall mission. Even though the \$59 price has succeeded in St. Petersburg, she is concerned about the higher costs in the Tampa location. She also wants to ensure the financial viability even when providing offers such as \$49.99 and \$39.99 for membership during specific months of the year. Now, she is studying Mary's optimal prices and number of courses per month and is eager to release marketing brochures for her new business.

### References

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### Possible Questions

1. Briefly summarize Johanna's situation.
2. Develop a revenue-cost table and curves that include total and marginal revenues, and total, average, and marginal costs at different membership prices. Calculate (graphically and numerically) the optimal number of classes per month, the optimal price per membership, and the total profits (assumption: 20 students per class attending twice per week). Are the optimal values similar to those suggested by the St. Petersburg Manager?
3. Determine the level of classes per month and total profits if Johanna offers the special prices of \$49.99 and \$39.99 per membership (assumption: once the studio offers more than 125 classes per month, miscellaneous variable costs remain constant at \$300). Does higher membership justify the lower prices (e.g. calculate the elasticity of demand at these prices)?
4. After the first three months of opening, actress *Jenifer Lopez* tweets that she got her curves thanks to practicing Belly Dance, increasing the demand for membership at *Hip Expressions*. Johanna estimated an increase of 25 percent in membership throughout all Belly Dance studios in the area. Given this new information, what is the new demand curve? What is the final effect on optimal price, quantity of classes offered per month, and profits?
5. Offer a list of possible opportunity costs associated with the decision to open the new dance studio in South Tampa. Do these costs alter the optimal solution found in question 2?

Figure 1: Hip Expressions Demographics (2013)

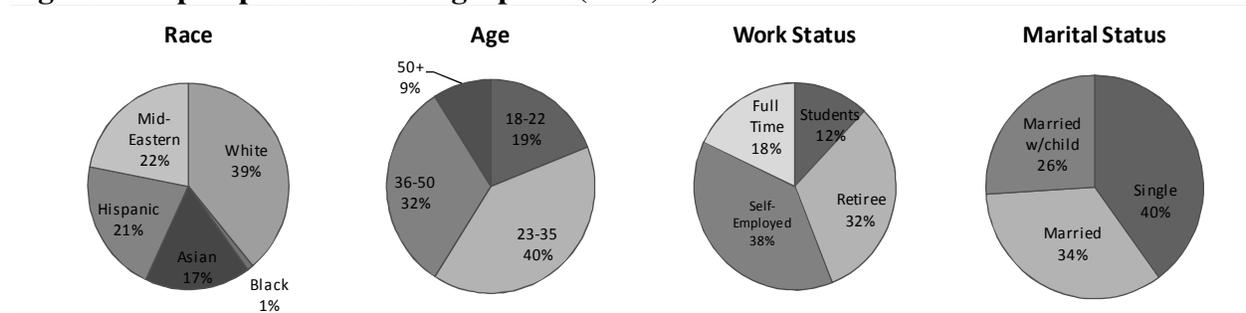
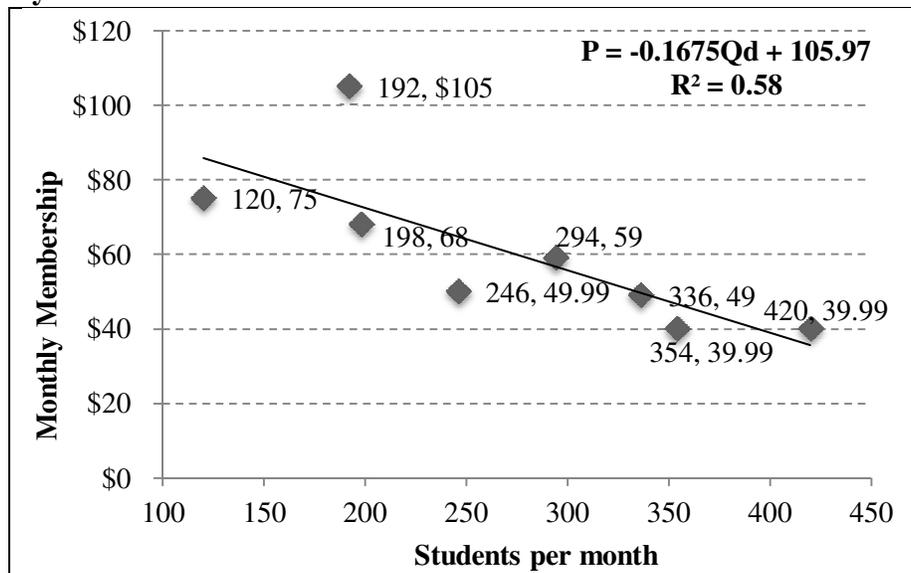


Table I: Belly Dance Studio Features in the Tampa Area

Companies	Location	Focus	Classes Offered		Days of Operation
			Choreog	Fitness	
Hip Expressions	St. Pete	Belly dance (mid-Eastern, Egyptian), Polynesian dance, Temple dance, jazz, and yoga	60	73	MTWRFSS
American Belly Dance	North Tampa	Belly dance	28	0	MTWRFS
Temple Goddess Dance & Yoga	Tarpon Springs	Yoga & Indian styled Temple dance, modern dance	12	40	MTWRFS

Source: Studios' websites

Figure 2: Belly Dance Classes – Demand Curve



Note: The source of the data is in Figure 4. The demand function of  $P = -0.1675Q_d + 105.97$  is the result of a linear regression between prices and quantity of members. The  $R^2 = 0.58$  represents the fitness of the equation. A value closer to one indicates a demand equation that closely replicates the real data.

**Table II: Monthly Membership Price and Demand of Dance Classes in the Tampa Area**

Studio	Price	Classes per Month	Students per Month
Temple Goddess Dance & Yoga	\$105	64	192
American Belly Dance	\$68	66	198
Hip Expression (regular price)	\$59	98	294
Hip Expression (sale price-February)	\$49.99	112	336
Hip Expression (sale price-December)	\$39.99	118	354
Franchesca School of Theatre and Dance	\$75	40	120
Rose & Francis Dance Studio	\$49.99	82	246
Monica Herrera Salsa Studio	\$39.99	140	420

Note: Prices and number of classes per month were collected from the studios' websites. The students per month were estimated assuming that each member attends two classes per week and each class has 24 students.

**Table III: Hip Expression South Tampa – Estimated Monthly Cost Structure**

Estimated Monthly Cost Structure								
Classes/ Month	90	95	100	105	110	115	120	125
<b>Operating Expenses</b>								
Rent	1,780	1,780	1,780	1,780	1,780	1,780	1,780	1,780
Utility	135	135	135	135	135	135	135	135
Studio Manager	1,580	1,580	1,580	1,580	1,580	1,580	1,580	1,580
Front Desk staff	925	925	925	925	925	925	925	925
Website Maintenance	28	28	28	28	28	28	28	28
Google Priority Service	6	6	6	6	6	6	6	6
Misc. Variable Costs	150	163	182	203	227	247	265	281
Misc. Fixed Costs	175	175	175	175	175	175	175	175
Instructors	4,050	4,275	4,500	4,725	4,950	5,175	5,400	5,625
<b>Total Operating Expenses</b>	<b>8,829</b>	<b>9,067</b>	<b>9,311</b>	<b>9,557</b>	<b>9,806</b>	<b>10,051</b>	<b>10,294</b>	<b>10,535</b>

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