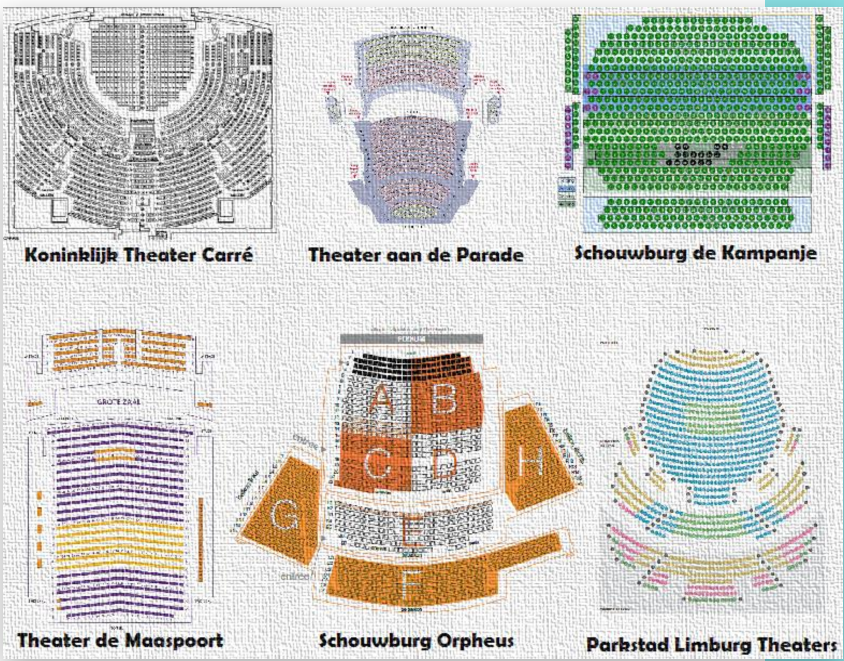
The Influence of Pricing in the Performing Arts

Maximize Attendance & Revenue



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09/06/2014

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Acknowledgement

At first, the main support during the writing process of this master thesis I have received from my supervisor Cees Langeveld. His enthusiasm for the performing arts, on top of my own enthusiasm, has motivates me to scientifically contribute to this sector. At the start he helped me to create and structure the topic of this thesis and during the writing process he gave useful feedback and provided me the contacts to collect my data. Therefore, many thanks to Cees Langeveld.

The data for this research was collected at a Dutch impresario and producer of theatrical productions, *Senf Theaterpartners*. Special thanks to Loes Hoogenboom for introducing me into the organisation and for providing me access to data of their theatrical productions.

After collecting the data, the time arrived to statistically analyze the data. This was one moment in the last months at which I felt a bit insecure because my statistical knowledge had kind of disappeared from my memory. But after reading a few statistical handbooks and receiving some useful tips of Erwin Dekker, I was back in business. Therefore, special thanks to Erwin Dekker (and my statistical handbooks).

Abstract

One way of generating more earned income for performing art theaters is to increase ticket sales by enhancing the structure of the price policy related to price differentiation in a theater hall.
There is studied that implementing various ranks in a theater hall is profitable for theaters, but what is its effect on attendance? Furthermore, knowledge about how to price the various ranks is still lacking. By studying pricing of the various ranks in performing art theater halls, a gap in theory will be filled which could be practically useful for performing art theaters.

The dataset of the research consists of data from 60 performances of 8 Dutch theatrical productions of various genres. The height of relative price differences between ranks in a theater hall is studied in relation to attendance and revenue.

This resulted in a significant evidence for the fact that an increase in relative price differences between the various ranks is related to an increase in total attendance, but a decrease in revenue per visitor. Its influence on total revenue was not significant, but the effect was positive. Furthermore, an increase in price differences between various ranks, even as a more equal dispersion of the number of seats per rank, is related to a more equally dispersed number of visitors per rank which is prove for an effective price policy.

A price policy with significant relative price differences between various ranks in a theater hall contributes to the maximization of attendance and revenue, with the highest contribution to attendance. Thinking of the main values theaters strive for (as artistic, cultural and societal values): the higher the number of visitors, the better theaters' main values can be realized.

In short, enhancing the structure of theaters' price policies, related to the pricing of ranks in theater halls, will simultaneously contribute to the realization of theaters' values. Therefore, pricing is of great importance.

Keywords

Performing arts, price policy, price differentiation, scaling the house, maximizing attendance, maximizing revenue.

Introduction

Organisations can never have ‘making profit’ or ‘making money’ as their main goal (Klamer, 2013). This is a statement I have learned during my Master Cultural Economics and Entrepreneurship at the Erasmus University which has greatly inspired me. Earning money is not an end in itself, it is only an instrument to achieve the main values of an organisation stated in its mission, which are going beyond earning money.

The focus of this thesis will be on Dutch performing art theaters which mostly have main values like social, societal and artistic values (Klamer, 2013). To achieve those values, it is necessary for a theater to have a sufficient amount of attendance. Values have to be implemented on and interact with an audience in order to realize them. One way of attracting an as large audience as possible is to present an interesting program and to implement an optimal theater hall’s price policy.

In contrast to this view on maximizing attendance, an increase in cultural entrepreneurship and earned income is necessary for Dutch cultural institutions. Recently this became more urgently because since 2011 the Dutch government decided to cut in cultural subsidies (Zijlstra, 2011). Because of this, cultural organisations are forced to focus on financial value, but they have to avoid to think of financial value as their main goal. ‘Money’ is not the main goal of a cultural organisation, its main goal goes beyond earning money. However in recent times, generating earned income, instead of relying on subsidies, is an important issue.

The Dutch government mentions three ways of generating earned income for cultural organisations (www.rijksoverheid.nl/onderwerpen/kunst-en-cultuur/ondernemerschap-kunst-en-cultuur):

-Income from private funds and other forms of own income, such as sponsoring.

-Private gifts

-Income from the audience, such as ticket sales. This is the option on which this thesis will focus.

An analysis of price policies of various Dutch theaters resulted in an observation that there is an increasing number of theaters having divided their theater halls in various ranks for which they ask a range of prices (price differentiation). This is done in contrast to theaters having a one price policy (one rank with one price), although there are a range of prices for specific segments in society (price discrimination). Hence, different price policies are existing, but the question is: which theater hall has the best price policy related to maximizing attendance and revenue?

There has to be taken into account that a relatively high price for a theater ticket usually is associated with a high quality performance. But at the other hand, prices cannot be too high, because then a part of your potential audience will be rejected, as will be emphasized in the theory of demand in section 1.2.2 of this thesis.

Furthermore, there always is the wish of funders and the government to keep the arts and culture open for every layer of society, which means that there have to be relatively low prices too (Langeveld & Stooker, 2012).

Pricing is of great importance, but there are many contradictory aspects attached to it. The challenge for this thesis will be to combine all those aspects into a price policy for theaters which will maximize attendance and revenue. This results in the following research question:

How can the price policy, related to price differentiation, of performing art's theater halls best be structured to maximize attendance and revenue?

To come to an answer to this question, first a literature review is given to get an understanding about supply, demand and pricing in the performing art sector. The next chapter presents the methodology of the research, which consists of the hypotheses, the ways of testing the hypotheses and the dataset. Thereafter, the results of the research will be shown after which a concluding chapter is added.

1. Literature Review

Before the focus will be set on price policies of performing art theaters, a clear overview of the world of theater, by emphasizing its supply and demand side, is necessary.

1.1 Supply in the performing arts

1.1.1 Characteristics of performing arts

The world of the performing arts is unique. The products which are supplied in this sector, performances and concerts, are not identical, neither is the experience of the visitor for each performance or concert. Aspects characterizing the performing arts are:
-Theatrical productions are heterogeneous, because of their unique character.
-Theatrical productions can be reproduced more than one time whereby the average fixed costs per performance decline over a longer period, while variable costs remain unchanged over that period.
-Performances and concerts are limited to time and place, they are ephemeral. Once a performance or concert starts, whether the theater hall is occupied or not, no tickets can be sold anymore. The show has to go on (Towse, 2010).

Overall, theatrical productions will never be seen as homogeneous products. Purely homogeneous products have the factor ‘price’ as the one and only distinguishing characteristic on which consumers base their choice of consumption. In the performing arts, price is one of the many characteristics on which consumers base their consumption.

1.1.1.1 Performing art’s supply side

When talking about price, performing art suppliers cannot purely be price-makers. Even though there is a limited number of suppliers in the market of the performing arts, they have to adjust to the behavior of their competitors because they share the same market. Two kind of markets related to performing arts are observed: a market in which performances are offered to theaters and concert halls by producers or performing companies, and a market in which theater tickets are offered to a public by theaters or concert halls (Langeveld, 2014). Both are heterogeneous markets, with an oligopoly as their market form because of the limited number of suppliers.

There are some exceptional performing art companies having the market form monopolistic competition instead of an oligopoly. Monopolistic competition exists in a market where the suppliers can act like monopolists, but in an environment with other suppliers. Those exceptional performing art companies living in this market form have achieved this position because of their highly distinctive product. This makes it possible for them to be price-makers and this gives them the advantage of not having the urge of taking into account the behavior of other suppliers, like is necessary in an oligopoly (Towse, 2010).

The form of the market is something each supplier has to adapt to. But the form of a performing art company itself is a (sometimes forced) decision independent of competitors in the market. In the Dutch performing arts there is noticed a distinction between subsidized and commercial performing art companies, as is noticed in fine arts and entertainment too. But a remark has to be made because on average, the number of subsidized companies are decreasing because of governmental budget cuts, as already said in the introduction.

1.1.1.1.1 Supply chains

In each market form, products are produced to be consumed in the end. The three traditional steps in an economic process are production, distribution and consumption: a supply chain. This chain can be observed in the performing arts too. To start with production: a playwright, a composer, a choreographer or a director creates a piece of art. This artistic material will be transformed into a theatrical production by a producer, a performing company or an orchestra.

After having a theatrical production, distribution has to be done. The production has to be sold to theaters or concert halls, or it has to be presented in a owned or rented venue (Langeveld, 2014).

The final step in the supply chain is consumption, but first the (potential) audience has to be convinced of buying a ticket for the performance or concert. Marketing and promotion are necessary at this step.

This was a short introduction to the supply side of the performing arts. An overview of the Dutch performing art market will be given in the following sections, because this is the geographical area on which this thesis mainly will focus.

1.1.2 The Dutch performing art market

1.1.2.1 From the 18^{th} century till now

By going back in time to the 18^{th} century, wealthy citizens and private entrepreneurs were entrepreneurial focused and established private theaters. Only after World War II (1945) the intervention of the local government in the performing arts was started by building and rebuilding theaters and concert halls. In those times, the local government had a goal of cultural dissemination which was the reason for their interventions in this sector (Sonneveldt, 2013).

Since 1990, the Dutch performing art market is greatly influenced by large-scale entertainment, starting by the introduction of big musical productions. This started a tendency of performing art companies and theaters becoming more commercial and independent of the government (although some of them were still partly subsidized by the government) (Langeveld, 2009).

In those large-scale entertainment companies, the supply chain is often vertically integrated into the organization itself. The links within the chain, from production to consumption, are owned by one organisation which will result in economies of scale and scope, increasing profitability and decreasing costs (Towse, 2010). However, costs for coordination will increase, but the advantages will overrule this.

Furthermore, this vertical integration has an advantage for the pricing policy of the organisation. Every link in the chain has the same mission and vision and therefore also the same view on pricing. Constructing a price policy is much easier when all links in the chain are facing the same direction (Langeveld & Stooker, 2012).

1.1.2.2 After the economic crisis

The past few years, there was a noticeable change in the Dutch performing art sector because the Netherlands was in an economic crisis. Governmental subsidies for performing art companies and venues were cut and the number of visitors for the performing arts decreased (Tereyagoglu, Fader, & Veeraraghavan, 2012 and Ministery of Culture, Education and Science, 2013). It is to the companies and theaters themselves to come up with creative ways of financing their continuity.

One of the solutions recently seen in the Dutch cultural sector for securing organisation's continuity is the phenomenon of horizontal integration. This type of collaboration was rarely used in the Dutch performing art sector until the economic crisis (Langeveld and Stooker, 2012). This kind of collaboration between different organisations or departments of organisations will reduce the costs of individual organisations and enhances its quality and effectiveness.

But as already said, the number of visitors for the performing arts has decreased over the past years (Tereyagoglu, Fader, & Veeraraghavan, 2012). All performing art disciplines, with film as an exception, had a decreasing participation from 2010 to 2012. This probably is the result of the economic crisis, therefore it could not be seen as a significant trend. The demand forecasts are still uncertain (Ministery of Culture, Education and Science, 2013).

As attendance is a primary necessity for cultural organisations to survive, demand is an important factor to take into account.

1.2 Demand in the performing arts

In the performing arts, attendance is necessary. Without an audience, a performance has no soul, no interaction and just makes no sense. That is why demand is an important aspect to go deeper into.

Purely homogeneous products have a simple theory behind their demand: the only factors influencing demand are price and utility. But as the performing arts have heterogeneous products, demand is more complicated. Next to price, there are a lot of other factors, such as taste and socio-economic factors, influencing the decision-making process of the customers.

1.2.1 Price and demand

1.2.1.1 Price elasticity of demand

To start with the influence of price on demand for performing arts, the price elasticity of demand is of importance. To what extent will the quantity demand changes by a change in price? This is the question which is answered by price elasticity of demand. When a product is elastic, a reduction in price will result in a more than proportionate increase in quantity demand. When the result is inelastic, a change in price will not significantly influence quantity demand (Towse, 2010).

The elasticity of demand in the performing arts is commonly interpreted as inelastic, like by Gapinski (1986). He conducted a research at thirteen performing art companies with the conclusion that an increase in price did not significantly influence demand, it only positively increased revenue.

Felton (1992) and Seaman (2006) stated that most of the studies about price elasticity of demand in the performing arts are conducted with an aggregate database. These aggregate data mostly result in an inelastic but generalized outcome. By looking at individual performing art companies, the price elasticity of demand is likely to be elastic, in contrast to the inelastic results of aggregate data (Felton, 1992, Seaman, 2006). An advice to every theater and performing art company: figure out the individual price elasticity of demand.

1.2.2 Demand's influencers

Next to the influence of price, there are some other factors influencing demand. In the theory of demand there is an economic explanation sought for consumer behavior influencing the decision-making process of a consumer. The demand function clearly shows which factors influence demand:

$Qd = f(P, Pz, Y, T)$ (Towse, 2010)

Qd means quantity demand which is influenced by P (price of the good), Pz (price of other goods), Y (income) and T (taste and preferences) (Towse, 2010). The relationship between quantity demand and price usually is negative (the higher the price, the lower the quantity demand), which results in a downward sloping demand schedule.

The price of the good is an important factor. With knowing this, there could be assumed that if a performing art theater has a good structured price policy, consumer's demand could be positively influenced. Which on its turn could result in a higher total revenue for a theater.

Secondly, the price of other goods is mentioned in the demand function. If the other good is a complementary good: if Pz goes up, Qd goes down. But if the other good is a substitute: if Pz goes up, Qd goes up as well. For the performing arts, mostly movies, reading or recreation are interpreted as substitutes. But within the performing arts there are so many different heterogeneous theatrical productions, that those productions consequently will be substitutes for each other too (Gapinski, 1986). For instance, if the price of a dance production goes up, then it is possible that the demand for a drama production goes up as well. Theater lovers will choose for a more affordable theatrical production.

Furthermore, the extent to which P and Pz can influence demand is limited by Y (income). People have a maximum budget suiting their income, which they preferably do not want to exceed.

At the other hand, taste and preference (T) are also influencing demand. This factor can be called the factor of temptation. A strong preference for a certain product can make people blind towards their budget.

1.2.3 Demand's influencers 2.0

The demand function emphasizes some factors influencing demand, but those factors are not the only influencers.

1.2.3.1 Socio-economic factors

One of those other influencers are socio-economic factors. Socio-economic characteristics of consumers are directing their decision-making processes. Income, education, age and gender are examples of those characteristics (Towse, 2010). Income and age are commonly seen as great influential factors of demand, but even more important is the level of education (Seaman, 2006). A higher level of education mostly results in a more frequent theater attendance.

For a theater manager it is important to know the characteristics of the theater's audience. Only then a customized and efficient marketing policy and price policy can be implemented.

1.2.3.1 Motivational factors

Swanson, Davis & Zhao (2008) even went a step further. Their research about theater visitors did not only took the earlier mentioned influencers of demand into consideration, they added psychological motives of theater visitors to demographic and behavioral (frequency of attendance) characteristics.

Already in 1980 there is observed something similar, life-style and attitudes of theater visitors are both more effective in understanding the behavior of theater visitors than socio-economic variables (Andreasen & Belk, 1980).

In short, price influences demand, next to socio-economic factors, psychological motives, life-style and attitude. Consumers' demand is a complex process.

Vandenberghe (2011) has combined all these factors into one research. She studied theater visitors at various price ranks in a theater hall (factor price) and asked them about their motivation of going to a theater and about their socio-economic characteristics. One of her results was that all respondents had a relatively high level of education. But her main finding was that the lowest price rank was occupied by mainly young professionals or students, with a motivation of socializing and intellectual enrichment. Whether the highest price rank was occupied by older and retired people, who are regular visitors, strong theater lovers and high cultural consumers. Their motivation of going to a theater was essentially enjoying the art itself, instead of socializing.

Sargeant (1997) did a similar research about characteristics of theater visitors, but without looking at the differences between visitors among various price ranks. He categorized the theater audience into three groups, varying in motivation, demographic and psychographic factors. His conclusion was that it is the theaters' job to use this knowledge or gain this kind of knowledge about their own audience to integrate it into their marketing campaigns. The better knowledge about the audience, the more effective promotional campaigns can be implemented which possibly results in higher attendance.

1.2.4 Advice: linking price and demand

Price ranks in a theater hall will attract different kind of people with different motivations, socio-economic characteristics and lifestyles. This thesis will focus on the prices of the various ranks related to demand and revenue. Price and demand, hence, are two variables linked to each other. Both have to be effectively taken into account in the marketing campaign of a theater.

An advice for theaters is to get a clear picture of the kind of people sitting at the various ranks in a theater hall. A theater's marketing campaign and price policy have to anticipate on this knowledge.

In short, price is one of the many factors influencing demand and can help attracting visitors to a theater when the price policy is structured well. But the question is, how to structure an effective price policy? In the following chapter theaters' price policies will be examined.

1.3 Pricing in the performing arts

The price policy of a theater has to do with financial values, but it is not primary set to contribute to financial values. Other values, like societal, cultural and artistic values, are also contributed to by theaters' price policies.

1.3.1 Values in the performing arts

Performing art theaters have to fulfill and contribute to a lot of different values and goals. At first, theaters have to fulfill cultural and artistic goals, contribute to education, economy, tourism and well-being. Secondly, they have to generate income (financial value) to secure their continuity. One major challenge for cultural organisations in general, as it is for theaters, is to find a balance between financial values and cultural or artistic values (Hume & Mort, 2006).

1.3.1.1 Money as an instrument

To successfully realize all those different values, a theater needs to attract as much visitors as possible. Only with audience's interaction, theaters' values can be realized. Therefore a maximization of attendance is of great importance.

Structuring the price policy of a theater hall as optimal as possible sounds like it could only contribute to financial values, but that is not true because it also is a way to maximize attendance. Klamer (2013) said that financial values always are used as an instrument to achieve one or more of theaters' main values which go beyond earning money. Having more earned income, therefore, will give a theater more flexibility in achieving its main goals. Hence, price policies of a theater hall take on the role of being an instrument to realize all values a theater strives for especially the ones which are going beyond earning money.

But this knowledge does not seem to be arrived well by theater managers or managers of performing art companies. Most of them do not want to think too much about financial values because they think that would harm their artistic image. But since generating financial value contribute to the artistic image of a theater or performing art company (as an instrument to realize artistic values), this argument cannot be applied anymore.

1.3.2 Price strategies in the performing arts

Before arriving at the stage of using financial value as an instrument to achieve other values, first this financial value has to be gained. Ticket sales are part of the financial value of a theater and it will get the focus in this section. Setting appropriate prices for theater tickets is not straightforward, there are a lot of factors which have to be taken into account. Just looking at the costs to be covered is not the strategy performing art companies use. There is a lot more going on.

1.3.2.1 Conflicting values to pricing

One of the values a theater wants to strive for is to be accessible for every layer of society: the societal value. For this reason, ticket prices cannot be too high because otherwise a theater will exclude the lower layers of society. This reason is often used by the government when it is about its cultural policy and its reasons for subsidizing performing art companies and theaters. But as already said in the introduction, most subsidies could not anymore be relied on in the Netherlands.

Next to the link of price with social accessibility, price also has a link with perceived quality. Voss, Parasuraman and Grewal (1998) found out that price influences the perceived quality and visitors' satisfaction evaluation. According to them, there are two options: 'quality given price' and 'price given quality'. The first option describes the fact that the price of a theater ticket is adapted to the quality of a performance. But often this is complicated to execute, because ticket prices mostly have to be set before a performance is totally finished. Only an indication of the quality can be made on which the price can be based. The second option, 'price given quality', means that people form their quality perception of a performance before having seen it from the ticket price. The higher the price of a ticket, the higher the perceived quality. This is part of a psychological process, which is hard to dive into as a cultural economist. But it is something to think about, and if it is possible for a theater, take it into account.

1.3.2.1.1 Balancing on a tightrope

Financial values versus artistic values, low ticket prices versus high ticket prices, a theater has to take all these conflicting values into consideration by constructing their price policy of the theater hall.
In the performing arts, figuratively, everybody is walking on a tightrope: balancing between all those different and conflicting values.

Price strategies of theaters will not only contribute to maximize revenue, it also contributes to other values of theaters, like maximizing attendance. The following part will give an overview of some important possible price strategies currently used by theaters, starting with price discrimination.

1.3.2.2 Price discrimination

Charging different prices for the same good or service to different segments of society and by which the price differences cannot be explained by cost differences, this is what is called price discrimination (Towse, 2010). For theaters this means charging different prices for theater tickets to people with different financial budgets, like students and seniors. Furthermore price discrimination is executed in discounts of any sort; early buyers discounts, discount coupons and last-minute price discounts (Courty, 2000).

To conclude, price discrimination is implemented a lot in the performing arts to attract a diverse audience. This price strategy contributes to theaters' societal value of being accessible for every layer of society. The government likes this price policy because it is implemented to please specific segments of society.

1.3.2.3 Discounts

Another price strategy to increase attendance is the implementation of discounts (Langeveld and Stooker, 2012). There are different sorts of discounts:

-Discounts could be part of price discrimination: special prices for special segments in society.

-Furthermore, there are volume discounts, subscriptions, by which visitors get a discount buying tickets for at least two performances simultaneously.

-Last-minute discounts are a regular used price strategy in the theater sector. When there is noticed that a performance is not sufficiently occupied, last-minute discounts are implemented to increase attendance. Because of this, potential visitors are postponing their purchase of tickets in order to anticipate on future promotion periods and discounts (Tereyagoglu, Fader & Veeraraghavan, 2012). This results in an ongoing circle. To break through this circle, last-minute discounts have to be transformed into early-buyer discounts. This enforces people to purchase tickets in time and will give the marketing department a clue about the theater hall's occupation rate in an early stage. The marketing department is prevented from throw out costly last-minute promotions and discounts, which saves them marketing costs.

1.3.2.4 Yieldmanagement

While discounts are primary set to increase attendance, yield management has maximizing revenue as its main goal. Yield management has to do with selling a product or service to the right people, at the right time and for the right price (Langeveld and Stooker, 2012). An organisation has to know the time preference of purchase of each segment of their customers. Adapting to the preferences, an appropriate price can be set for every segment of their customers.

Theaters are aware of yieldmanagement by applying price discrimination. But mostly this price strategy is used in commercial and competitive organisations, such as airlines, who do not have a fixed capacity. Theaters cannot fully adapt to attendance since their theater hall's capacity is fixed. A solution for this problem could be to present a performance a few times at the same hall to overcome the limitation of fixed capacity. But with a mostly fixed theater agenda this is hard to accomplish.

Next to that, yieldmanagement is focused on maximizing revenue. While theaters have main values which go beyond financial values, theaters mostly are reluctant to limit their attitude to yieldmanagement.

1.3.2.5 Dynamic pricing

Customers' time preference of purchasing theater tickets is an important fact for theaters. In the preferred time of purchasing theater tickets, it is possible to ask higher prices, which will give the theater a higher revenue.

Being flexible and adjust prices to demand, this is what is called dynamic pricing (Larson, 2009). Commonly, the season brochure of a theater is published for a whole season and is consisting of the ticket prices for every performance. The ticket prices are set upon production costs and upon a prediction of demand, which possibly are not appropriate anymore one year later when the performance or concert is staged. As Larson said, dynamic pricing offers the opportunity to flexibly adjust to demand and re-set prices in reaction to errors in predictions of demand.

Flexible prices are seen in the variation of ticket prices over the week, with mostly the highest price on Saturday night. Prices rarely vary from week to week, but demand does. Adjusting prices to demand does mean adjusting prices per week, or even per day (Courty, 2000). For a regular analysis of demand to set appropriate prices for theater tickets, a specialized employee is needed next to a visitor registration system which consists of useful data. Since most theaters have advanced digital registration systems, implementing dynamic pricing is possible and will maximize theaters' revenue in the end.

1.3.2.6 Price differentiation

A price strategy with a longer history than dynamic pricing, but which are both trying to understand and adapt to demand, is price differentiation. While in price discrimination there are different prices for exactly the same seats in a theater hall, price differentiation asks different prices for slightly different products (different theater seats) (Langeveld and Stooker, 2012).

As is already known, products in the performing arts are not identical, even as the experience of the visitor for each performance or concert. The variance in visitor experience is caused by different personal preferences, but also each seat will give a different theater experience because of its distance between the seat and the stage. There is commonly thought that the bigger the distance, the lower the quality of the experience, hence the lower the price of the seat. But there are not set unique prices for each theater seat, seats are categorized in different ranks according to the quality of the experience. This is called 'scaling the house' (Courty, 2000).

1.3.2.6.1 One price policy VS price range policy

Even though scaling the house is increasingly implemented at theaters, there still are theaters with a one price policy. The difference in earned revenue between those two price policies is researched in 1993 by Huntington. He studied 33 theaters in Great Britain from which halve of it used different price ranks. He found out that theaters without a range of prices could increase their revenue by about 24 percent by implementing a price range policy.

Other researchers, Leslie (2004) and Stooker (2012), did study the same subject and also concluded that a price range policy will increase revenue relative to an one price policy, only not with the significant amount of increase Huntington concluded. Next to this, Stooker also concluded that the net revenue per seat is higher at theater with various price ranks than at theaters without.

1.3.2.6.2 Maximize revenue

The implementation of various price ranks hence increases revenue. The theory of demand stated that all factors influencing demand (section 1.2.2) are causing a downward sloping demand curve: the higher the price, the lower the demand. Therefore, there are a range of willingnesses to pay which a theater has to take into account by setting its prices. Higher prices for people with a high willingness to pay (1st rank or even golden rank) and lower prices for people with lower willingnesses to pay (2nd or 3rd rank). This price strategy maximize attendance and revenue.

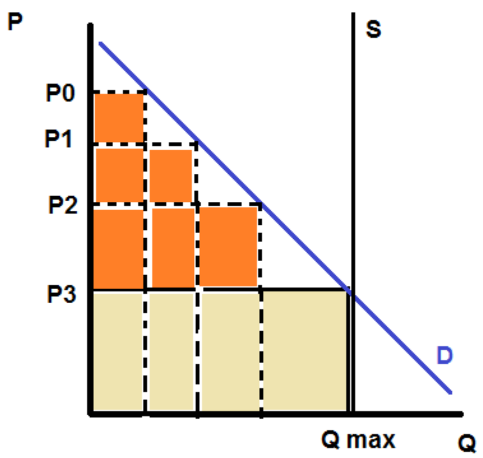

Figure 1

Figure 1 shows the demand curve and price policy of a hypothetical theater. Price 3 (P3) can be the price when a theater just implements a one price policy. The light colored area is the revenue the theater can make in this case. By implementing more ranks, P0, P1 and P2, extra revenue is added (the dark colored areas). Therefore, a price range policy will maximize the revenue of a theater, as Huntington (1993), Leslie (2004) and Stooker (2012) gave evidence for.

An issue a theater has to take into account is that its revenue is limited to the maximum capacity of its theater hall. Moreover, to make appropriate use of figure 1, the exact demand curve of each particular theater has to be known. Since the demand curve is a theory, in practice it is hard to sketch the real demand curve.

1.3.2.6.3 Maximize attendance

Various ranks with a range of prices for people with different willingnesses to pay will attract a varied audience, and therefore has an influence on attendance. The realization of societal value is a fact.

There is explained how price differentiation contributes to gaining revenue, but even as important is its influence on attendance. As said before in section 1.3.1.1, to realize theater's values, a sufficient amount of attendance is necessary. By maximizing attendance, the societal and cultural value is maximized too.

Moreover, a maximization of attendance will also lead to a maximization of ancillary goods, which will increase the revenue of a theater tremendously (Waddell, 2009). The price visitors paid for their tickets does not matter in this case, it is just about the amount of attendance. This phenomenon is most influential at performances of a popular genre, as pop music concerts, where there is a lot of merchandise. But do not forget ancillaries like parking tickets, consumptions and program books which contributes to the theater's revenue.

1.3.2.6.4 Price differences in price differentiation

Revenue and attendance can be maximized by implementing the right price strategy in the right way. Price differentiation is one of those price strategies which has a long history, but knowledge about how various ranks in a theater hall should be priced is still lacking (Courty, 2004; Langeveld and Stooker, 2012).

As is made clear in this literature review, pricing is a complex process at which a lot of factors have to be taken into consideration. By pricing the various ranks in a theater hall, the following aspects are of importance:

-At first, ranks in a theater hall have to be categorized in a for visitors recognizable and acceptable structure.

-Furthermore, price differences between the various ranks have to be significant to motivate visitors to choose for a particular rank. People do know that there are quality differences between seats at each rank. They are willing to sit at a less quality seat if the price is reflecting the quality (lower prices for lower quality and higher pricing for higher quality). But they are no risk-takers; if the price differences between ranks are small, people prefer to sit at the 1st rank at which they do not risk a disappointment in quality.
-Lastly, significant price differences between ranks also will influence the 'decision frame' of potential visitors in making their purchase decisions. The formulation and presentation of a product controls the decision-making frame of customers (Tversky and Kahneman, 1981). Customers' decisions are biased by producers, which is called the framing effect (Jepma & Lo´pez-Sola, 2014). The price of the first rank acts like the frame, the reference point, of the decision a potential visitor makes. If the prices of the other ranks significantly differ from the reference price, they are seen as a kind of 'discount' on the reference price which is a gain for visitors. This will disperse the audience effectively among the various ranks.

1.3.2.7 Mixed price strategy

All the price strategies mentioned above are summed up separately from each other. But a remark has to be made about the possibility of implementing mixed price strategies. Theaters have to understand the preferences of their potential audience and choose the right price strategies that fit to their audience. It is likely that different audience segments need different price strategies, or a combination of two, three or even more price strategies.

1.3.2.8 Values and pricing

Within the performing arts various objectives are pursued. Objectives can be, for instance, societal, social, cultural, artistic and financial objectives. The last mentioned objective, financial objective, is often included in endless performing art debates. However, the performing art sector has to let go its mindset of thinking about financial values as a destruction of its artistic image. As already said (section 1.3.1.1), having more earned income will give a theater more possibilities in achieving its main values, like artistic and societal values.

Maximizing attendance and revenue can be realized by implementing appropriate price policies adjusted to the preferences of the audience. Pricing is of great importance. The more attendance, the more successfully theaters' values will be realized: financial values and all values besides that.

2. Methodology

A way of generating earned income is to enhance ticket sales, this can be realized by having an attractive theater program, an intense marketing campaign, an optimal theater's service and pricing theater tickets smartly. The latter is important, since this is the subject of this thesis.

There are already a few researches conducted with the focus on pricing in the performing arts. At first, there is proved that visitors having a seat in different price ranks were having different motivations to go to a theater (Vandenberghe, 2011).

Furthermore, when it is about the effect of pricing on revenue, Courty and Pagliero (2012) have researched the impact of price discrimination on revenue at pop music concerts. They found out that price discrimination increases revenue by 5%.

Even more important for this thesis, is that there is evidence for the fact that theaters having various ranks in their theater halls gain more revenue than theaters with a one price policy (Huntington, 1993; Leslie, 2004; Stooker, 2012). Next to that, Stooker also showed evidence for the fact that the net revenue per seat will be higher in theaters with various ranks than theaters without ranks.

The question by now is, why do some theaters still hold on to a one price policy, even with these breakthrough results? Maybe such theaters are small and already do not have expensive tickets, which makes them think that implementing a range of prices do not make any sense. But there is stated by Stooker (2012) that this is not a significant reason. She found that price differentiation will not only have a positive effect for relatively expensive theater tickets, it has a positive effect on less expensive theater tickets too.

Subsequently, there is an option left which simultaneously is the main reason of writing this thesis: theaters might not know how to structure the price policy of their theater halls in an effective way. Both Courty (2004) and Langeveld and Stooker (2012) raised some questions after their review about price differentiation and scaling the house. They both wondered:

1)How to determine the optimal number of ranks?

2)How should an organisation select seats for each ranks?

3)How should each seating category be priced?

Question number three is the focus of this thesis. Hopefully a gap in theory will be filled by answering the following research question (as already stated in the introduction):

How can the price policy, related to price differentiation, of performing art's theater halls best be structured to maximize attendance and revenue?

Initially, the effect of the price policy of a theater hall on revenue would be the center of this thesis. But as already explained in the literature review, there are a lot of different values and goals a theater has to strive for (Hume & Mort, 2006). To achieve those values, a sufficient amount of attendance is necessary. Therefore, the effect of price policies on attendance will be examined too.

The research of this thesis consists of two important factors, attendance and revenue, and how these factors are influenced by a theater hall's price policy. By price policy is meant the existence of various ranks in a theater hall and, moreover, the relative price differences between those ranks.

Only in an ideal world just the two factors, attendance and revenue, should be taken into account. But we live in reality, that is why in this research some other influential variables are included too: capacity, number of ranks and genre.

The main expectation of this research is that the more ranks and the bigger the price differences between the various ranks, the higher the attendance and the more revenue a theater will realize. A few small hypotheses are formed to get a clear picture of this broad expectation.

2.1 Hypotheses

Hypothesis 1 - Attendance

1.1 The higher the price differences between ranks, the higher the attendance.

An appropriate ticket price for different visitors with a different willingness to pay; this hypothetical theory would suggest a range of prices will attract more and a varied audience.

Price differences between ranks in this hypothesis is approached as a percentage of the rank price of the 2nd rank to the rank price of the 1st rank (taking the rank price of the 1st rank as 100%). The price difference between the 1st and 2nd rank gives a good indication of the price differences of the other ranks, if they are present.

1.2 The higher the price differences between ranks, the more equally spread are the visitors among ranks.

If rank prices significantly differ from each other, visitors are more persuaded to get a seat in the 2nd or 3rd rank instead of the 1st rank (more equal spread of visitors among ranks). The poorer quality of a 2nd or 3rd rank seat is then included in the price; the right value for the right money. But if the prices of ranks are not significantly differing from each other, the risk of having a worse quality seat at the 2nd or 3rd rank is not worth it. Paying one or two euros more for a 1st rank seat to overcome the risk is preferred.

Capacity

1.3 The more equally divided the capacities of the ranks, the more equally spread are the visitors among the various ranks.

To control for capacity, also capacity is taken as a variable influencing attendance. Next to the influence of price differences on the spread of visitors among ranks, the number of seats per rank relative to each other is assumed to have an influence too.

Ranks

1.4 The higher the number of total ranks, the higher the number of visitors.

To control for the number of ranks, also this variable is assumed as a possible influencer of attendance.

1.5 A golden rank has a relatively high occupation rate

To see if a golden rank is efficient to implement, the occupation rate of the golden rank is assessed.

Hypothesis 2 - Revenue

2.1 The higher the price differences between ranks, the higher the total revenue.

If higher price differences will attract more visitors than small price differences (as assumed in hypothesis 1.1), it will result in higher total revenue too.

2.2 The higher the price differences between ranks, the higher the revenue per visitor.

More attendance and more revenue will cause a higher revenue per visitor.

Ranks

2.3 The higher the number of ranks, the higher the total revenue.

To control for the number of ranks, also this variable is taken into consideration.

2.4 The higher the number of ranks, the higher the revenue per visitor.

2.5 Theaters with a golden rank have a higher total revenue than theaters without a golden rank.

Hypothesis 3 - Genre

To control for the kind of performing art genre, this variable is taken into account too.

3.1 There is variance between the four genres in relative price difference rank 2 to rank 1.

3.2 There is variance in attendance between the four genres.

3.3 There is variance in total revenue between the four genres.

3.4 There is variance in the number of ranks between the four genres.

2.1.2 Statistical tests

2.1.2.1 Values

At first, the way price differences between ranks are approached is by giving the percentage of the price of the 2nd rank relative to the price of the 1st rank (determining the 1st rank price as 100%). In 36.7% of the cases in the used dataset, there only exists two ranks. For the other 63.3%, the price ratio between the 1st and 2nd rank is a good indicator for the price differences between the possible other ranks.

The values of the variables mostly are expressed in ratio numbers (percentages) or absolute numbers. Only at hypotheses 1.2 and 1.3 there are used other sort of values: the standard deviation (*SD*) of the variables. These hypotheses are to be distinguished because they both contain two variables of dispersion, which is to measure in *SD*. Having two variables measured in *SD*, an easy interpretation of the results is possible (Verhoeven, 2013). All other hypotheses contain variables measured in percentages or absolute numbers, because they do not have two variables of dispersion. Even though price difference, as being a variable often included in the other hypotheses, could be seen as a variable of dispersion too, those are not measured in *SD*. In all hypotheses besides 1.2 and 1.3, price difference will not be seen in relation to another variable of dispersion. In these cases, it is not possible to measure both variables in *SD*. Therefore, those variables are both measured in percentages or absolute numbers to make it easier to interpret the results.

2.1.2.2 Tests

Each hypothesis has to be scanned on the variables included. Each variable can be different: there are ratio/interval variables, like price difference, there are ordinal variables, like number of ranks, and there are nominal variables, like genres. Furthermore there are categorized variables (golden rank or no golden rank) and uncategorized variables (absolute attendance), with each having an own appropriate statistical test (Bryman, 2008).

For variables with two categories (golden rank or no golden rank), an *independent samples t-test* is computed to assess the significance of the variance in the corresponding means of the two categories. A *one-way ANOVA* is computed when a variable has more than two categories at which the variance of means of a corresponding variable has to be tested on significance. To go a step further, the correlation of the relationship between two variables are assessed by *Pearson's R* (two interval/ratio variables), *Spearman's Rho* (interval/ratio and ordinal variables) or *Chi-square* (ordinal and nominal variables). To get an even more in depth view into the relationship between two variables, about the strength and direction, a *single regression analysis* or a *multi regression analysis* is computed (Verhoeven, 2013).

2.1.3 The data

The dataset studied in this research is collected at *Senf Theaterpartners*, a Dutch impresario and producer of theatrical productions.

To get a glimpse of the Dutch theater world, performing art productions of four different genres are included in the dataset. Verhoeff (1993) divided the performing art sector into four different genres: drama, music, dance and musical theater. This researcher described musical theater as musical and opera, but the genre show is missing in this list of genres. Therefore, 'musical theater' will include 'musical & show' in this research.

Under each of the four genres there are selected two Dutch theatrical productions presented their performances in different theaters in the Netherlands. The theatrical productions included in this dataset were not selected in advance, the productions were selected according to the availability of useful data. All selected productions were playing in the theater season 2013/2014.

To get a useful database, the selected productions had to meet the following criteria:

-The productions had to play at different theaters in the Netherlands.

-The productions did not have to be sold out. At sold out performances the choice for a seat at a particular rank has to do with availability instead of motivation.

-The productions did not have to had discounts at large scale.

-The productions did not have to had a centrally stated price. Otherwise there were no differences between price policies between theaters.

-The productions have to be divided over the four different genres (musical & show, music, drama and dance).

Checked upon the earlier mentioned criteria, the following productions are included in the dataset (in parentheses the number of included performances of that theatrical production). The theaters included in the dataset are listed in appendix 1.

<u>Musical & show (17)</u>:

-*Tineke Schouten – Moet niet gekker worden!* (6)

-*Love Story* (11)

<u>Music (9)</u>:

-*Top 2000 Live* (5)

-*Boudewijn de Groot – Vaarwel, misschien tot ziens* (4)

<u>Theater/Drama (20)</u>:

-*Het Toneel Speelt – Familie (9)*

-*Huub Stapel, Johanna ter Steege, Anneke Blok and Paul R. Kooij - God van de slachting (Carnage) (11)*

Dance (14):

-Sint Petersburg Ballet – Notenkraker & Sleeping Beauty (7)

(The ballet productions *Notenkraker* and *Sleeping Beauty* are in this dataset interpreted as one theatrical production, similar as *Senf* did in its portfolio. These two ballet productions were performing in the same time period and danced by the same ballet company, therefore they are comparable to each other.

-Isabelle Beernaert – Red, Yellow and Blue (7)

From each particular performance of the eight theatrical productions, the following data was collected:

-Total capacity of the theater hall and the capacity per rank

-Price per rank (base price, without any discount)

-Total number of sold seats and the number of sold seats per rank

-Total revenue and revenue per rank

2.1.3.1 Adjustments of the data

One of the criteria for a selected theatrical production is that a production cannot be sold out. Because of this, individual sold out performances of each theatrical production are removed from the dataset. Even when only one rank is sold out, the performance is deleted from the dataset.

Furthermore, at many performances in the dataset there was a large number of discount tickets sold. Since this research will only take into account tickets sold for the base price, the amount of total revenue and total visitors will in some cases be biased. The actual amount of total revenue and total number of visitors will be higher than stated in this research. But this is the case for almost all cases in this dataset, which makes this adjustment not influencing the results of the research itself.

3. Research

Following the order of the hypotheses, in this chapter all hypotheses will statistically be tested on significance. The main hypothesis of this research is that bigger price differences between ranks have a beneficial effect on theaters' attendance and revenue. To test this main hypothesis, all previously mentioned hypotheses will be statistically tested.

3.1 Hypothesis 1 - Price differences between ranks influence attendance.

3.1.1 The higher the price differences between ranks, the higher the attendance.

Many theaters have a societal value. This value means, for instance, that a theater wants to be accessible for every layer of society (Klamer, 2013). Theoretically, one way to achieve this is to implement more than two ranks in a theater with significant price differences between them. The idea behind this is that the price should not be an obstacle for anyone to go to a theater. It depends on people's own preference, not on the price of the theater ticket, if they will go to a theater or not.

Before the strength and direction of the relationship between price difference and attendance can be assessed, firstly it is important to assess if there is a relationship between them at all.

H0: Price differences between ranks do not have influence on attendance.
H1: Price differences between ranks do have influence on attendance.

For this hypothesis, the relative price difference between the 1st and 2nd rank is categorized in three categories (high, modest and low). Per category, the average number of visitors is computed.

The high price difference category (2nd rank price deviates between 75% and 83% from the 1st rank price) has an average attendance of 689 (*Standard deviation* (*SD)* = 345), the modest price difference category (2nd rank price deviates between 83% and 91% from the 1st rank price) has an average attendance of 351 (*SD* = 205), and the low price difference category (2nd rank price deviates between 91% and 99% from the 1st rank price) has a mean of 439 visitors (*SD* = 270). The measurement *SD* is the average deviation of all observations with respect to the mean (De Vocht, 2013).

In short: the category with the highest price difference has the highest number of visitors. The category with modest price difference has the lowest number of visitors and the category with low price differences has a modest number of visitors.

The highest price category has relatively the biggest impact on attendance, since this number of visitors significantly stands out. But price difference does not exclusively influence attendance, also the different levels of attractiveness of each of the theatrical productions could have played a role, even as the variation in intensity of marketing campaigns of each of the productions.

3.1.1.1 One-way ANOVA

To test if there is a significant difference between the means of attendance in each category of price difference, a *one-way analysis of variance* (*one-way ANOVA*) is computed with a significant result: $F(2, 57) = 3{,}677$; $p < 0.05$. The F-statistic is to test the statistical significance of the variance. It measures if the variance is caused by variance between categories or by variance within categories. If the F-statistic is significantly above 1, the majority of the variance is declared by variance between categories. The p-value is testing the statistical significance of the whole statistical test (De Vocht, 213). In this research the level of significance of 0.05 will be applied. This means that if the p-value is below 0.05, the results of the test are statistical significant, but if the p-value is above 0.05, the results of the test are not statistical significant.

In this case, $F > 1$ which means that the majority of variance is caused by differences between the categories. Furthermore $p < 0.05$, there hence can be concluded that the height of the price difference between the 1st and 2nd rank does have a significant influence on attendance.

The strength of this relationship can be measured by *Eta Squared*: 0.114. The price difference categories are causing 11,4% of total variance in attendance, which is a modest effect (De Vocht, 2013). This suggests that it makes sense to implement a good and effective price policy, because it has significant and positive influence on attendance.

3.1.1.2 Post Hoc Multiple Comparisons

The *one-way ANOVA* just showed that the three price difference categories significantly differ from each other in the number of total visitors. A *Post Hoc Multiple Comparison* will test which categories are significantly different from each other (De Vocht, 2013).

The *Bonferroni Test* is appropriate in this case (homogeneity of variance, but not an equal number of units in each category) (De Vocht, 2013). The category with a high price difference between the 1st and 2nd rank and the category with modest price differences between the 1st and 2nd rank are significantly different from each other, $p < 0{,}05$ (appendix 2.1.1c). These are the groups with the highest and lowest number of visitors.

To conclude, *H0* can be rejected. *H1* is accepted, which means that average attendance per performance varies because of the height of relative price difference between the 1st and 2nd rank. The most significant result was found between the highest and modest price category.

As the *one-way ANOVA* and *Post Hoc Multiple Comparisons* have shown, price differences between ranks have influence on attendance. But the question still is, is there a significant correlation between those two variables? And what about the direction and strength?

H0: The height of price differences between ranks does not have an influence on attendance.
H1: The higher the price differences between ranks, the higher the attendance.

3.1.1.3 Pearson's R

A *Pearson's R* test was computed to assess the relationship between attendance and relative price difference between the 1st and 2nd rank. There was a negative correlation between the two variables, r = -0,267, n = 59, p = 0,041 ($p < 0{,}05$).
r is the *correlation coefficient* which expresses the strength and direction of the relationship between the two variables and n is the number of observation included in the test (De Vocht, 2013). A scatterplot summarizes the results (Appendix 2.1.1d).

Overall, there is a weak, negative correlation between attendance and relative price difference rank 2 to rank 1. Increases in price differences are weakly but significantly correlated with increases in attendance.

The result of the *one-way ANOVA* test can be used to explain the weak outcome of the *Pearson's R* test. There was not seen a direct decrease of visitors by smaller price differences. A modest price difference has the lowest attendance, while the lowest price difference has modest attendance. But because the attendance at the highest price difference category is significantly higher than the rest, the result is significant.

3.1.1.4 Single regression analysis

To assess the strength of the effect price differences between ranks have on attendance, a *single regression analysis* is computed. The percentage of declared variance in attendance by price difference can be seen at the r^2 : 0.071 (De Vocht, 2013). 7.1% of the variance of attendance is declared by the height of the price difference between the 1st and 2nd rank. This means that there is a small linear relationship between those two variables.

A regression formula can be shaped in which the implemented or desired relative price difference between rank 2 and rank 1 can be included to find out the number of visitors matching this price difference. The plain formula looks like this: $\hat{Y} = B_0 + B_1 * X$ (De Vocht, 2013)

$\hat{Y}$ is the predicted *Y*-value (the dependent variable). B_0 is the *Constant*: it is the intercept of the regression line with the *Y-axis*, in other words, it is the value of $\hat{Y}$ if $X = 0$. Thirdly, B_1 is the *regression coefficient*, this value indicates the change in $\hat{Y}$ if *X* increases with one. Last but not least, the *X* is the independent variable which influences the $\hat{Y}$ (De Vocht, 2013).

A *single regression analysis* gave a B_0 (*constant*) of 1881.098 and B_1 (*regression coefficient*) = -16.381. The following formula can be shaped:

*Attendance = 1,881.098 – 16.381 * relative price difference price rank 2 to price rank 1 in percentage*

The *regression coefficient* shows that if the 2nd rank price will be set one percentage closer to the 1st rank price (smaller price difference), the attendance will decrease with 16 visitors.

To give an example of how to fill in this formula, a hypothetical theater with a relative price difference price rank 2 to price rank 1 for a particular performance is 88%.

In this case the formula will be:

*1881.098 – 16.381 * 88 = 439.57 visitors*

If there is a theater having a relative price difference price rank 2 to price rank 1 for a particular performance of 92%, the formula will be:

*1881.098 – 16.381 * 92 = 374.046*

This proves the assumption of having higher price differences means a higher amount of attendance.

=>

-Relative price difference between the 1st and 2nd rank has a significant effect on attendance, b = -16,381, t = -2,092, $p < 0.05$. *b* is the *regression coefficient* and *t* is a determinant to test how probable it is that the true value of the *regression coefficient* is zero, as the null hypothesis suggests (De Vocht, 2013). A big *t*, with a small *p*-value, means that the null hypothesis can be rejected. In such cases the *regression coefficient* is not 0.

-Relative price difference between the 1st and 2nd rank explains a small significant proportion of variance in attendance, $r^2 = 0.071$, $F(1, 57) = 4.376$, $p < 0.05$.

To conclude, *H0* can be rejected and *H1* can be accepted. Even though the correlation is weak; the higher the price difference between ranks, the higher the attendance.

3.1.2 The higher the price differences between ranks, the more equally spread are the visitors among ranks.

In section 3.1.1, the effect of the height of price differences between ranks on the absolute amount of total attendance was measured. In this section, the effect of the height of price differences between ranks on the spread of attendance among all ranks will be assessed.

H0: The dispersion of rank prices has no influence on the dispersion of visitors among ranks.
H1: The dispersion of rank prices has influence on the dispersion of visitors among ranks.

This hypothesis includes two variables calculated in a *measurement of dispersion*: *standard deviation (SD)* which shows how the cases are located relative to each other, in other words; how the variables are divided (Verhoeven, 2013). If the *SD* of rank prices is relatively high, then the price differences between ranks are relatively high. If the *SD* of visitors among ranks is relatively high, then the visitors are relatively not equally divided among the ranks.
(The *SD* of prices includes the prices of all ranks (rank gold to rank 4) and the *SD* of visitors includes all visitors among all ranks (rank gold to rank 4).)

3.1.2.1 Pearson's R

A *Pearson's R* test was computed to assess the relationship between the dispersion of attendance among all ranks and the dispersion of rank prices. There was a negative correlation between the two variables, $r = -0.534$, $n = 60$, $p < 0.01$ ($p = 0.00$). A scatterplot summarizes the results (appendix 2.1.2a).

Overall, there is a strong, significant and negative correlation between the dispersion of visitors among ranks and the dispersion of rank prices. An increase in the *SD* of rank prices is strongly and significantly correlated with a decrease in the *SD* of visitors among ranks. This means that the bigger the price differences between ranks, the more equally divided is the number of visitors among all ranks.

This is an evidence for the fact that significant price differences between ranks are effective in influencing visitors' choices of a seats. Often, people are choosing for a 1st rank seat to be assured to have a good quality seat. But if the poorer quality of a 2nd or 3rd rank seat is reflected in the price, people are willing to take a risk of having a lower quality seat.

3.1.2.2 Single regression analysis

To assess the strength of the effect price differences have on the spread of visitors among ranks, a *single regression analysis* is computed. The percentage of declared variance in the *SD* of visitors among all ranks can be seen at the r^2: 0.285 (De Vocht, 2013). 28.5% of the variance in the *SD* of visitors is declared by the *SD* of rank prices. This means that there is a strong linear relationship between those two variables.

Furthermore, the *regression coefficient* shows that if the *SD* of rank prices increases with 1 (higher dispersion of rank prices), the *SD* of visitors decreases with 1.139 (higher dispersion of visitors among ranks). From this, a regression formula can be formed (B_0 (*constant*) = 54.408, B_1 (*regression coefficient*) = -1.139):

SD of visitors among all ranks = 54.408 + -1.139 * *SD rank prices*

As an example, assume a theater has a *SD of rank prices* of 18. In this case, the formula will be:
Example 1: 54.408 + -1.139 * 18 = 33.906
The second example is a theater having a *SD of rank prices* of 4.
Example 2: 54.408 + -1.139 * 4 = 49.852
A high *SD* of rank prices means high price differences between ranks and a high *SD* of visitors among ranks means a relatively not equally divided number of visitors among ranks. Example 1, hence, has relatively high price differences between ranks (*SD* = 18), but a relatively equal distribution of visitors among ranks (*SD* = 33.906). While example 2 has relatively low price differences between ranks (*SD* = 4), and a relatively low equality of distribution of visitors among the various ranks (*SD* = 49.852).

=>
-The *SD* of rank prices has a significant effect on the *SD* of visitors among all ranks, $b = -1.139$, $t = -4.808$, $p < 0.01$ ($p = 0.00$).
-The *SD* of rank prices explains a strong significant proportion of variance in the *SD* of visitors among all ranks, $r^2 = 0.285$, $F(1, 58) = 23.115$, $p < 0.01$.

To conclude, *H0* can be rejected and *H1* can be accepted. The higher the differences between rank prices, the more equally divided are the visitors among all ranks.

3.1.3 The more equally divided the capacities of the ranks are, the more equally spread are the visitors among the various ranks.

In section 3.1.2, the effect of price difference on the equality of visitors among ranks is assessed. But the capacity of ranks could be another factor influencing the equality of visitors among ranks.

H0: The dispersion of capacity of ranks has no influence on the dispersion of visitors among ranks.
H1: The dispersion of capacity of ranks has influence on the dispersion of visitors among ranks.

Just as in section 3.1.2, this hypothesis has to deal with two variables calculated in a *measurement of dispersion*: *standard deviation (SD)*, which is the average amount of variation around the mean which shows how the variables are divided (Verhoeven, 2013).
The *SD* of capacity includes the capacities of all ranks (rank gold to rank 4) and the *SD* of visitors includes all visitors among all ranks (rank gold to rank 4).

3.1.3.1 Pearson's R

A *Pearson's R* test was computed to assess the relationship between the dispersion of attendance among ranks and the dispersion of capacities of ranks. There was a positive correlation between the two variables, r = 0,507, n = 60, p < 0,01 (p = 0.00). A scatterplot summarizes the results (Appendix 2.1.3a).

Overall, there is a strong, significant and positive correlation between the dispersion of visitors and the dispersion of capacities. An increase in equality of capacities of ranks is significantly correlated with an increase in equality of visitors among ranks.
This means that the more equally divided the number of seats are among the various ranks, the more equally divided the number of visitors are among the various ranks.

When the capacities of ranks are more equally dispersed, a possible consequence would be that total revenue goes down. There are less 1st rank seats, resulting in less tickets sold for the 1st rank price. Unless the 1st rank price significantly increases, total revenue goes down.

3.1.3.2 Single regression analysis

To assess the strength of the effect the dispersion of capacities has on the dispersion of visitors, a *single regression analysis* is done. The percentage of declared variance in the dispersion of visitors among the various ranks by the dispersion of capacities of the various ranks can be seen at the r^2: 0.257 (De Vocht, 2013). 25.7% of the variance in the dispersion of visitors among the various ranks is declared by the dispersion of capacities of the different ranks. There is a strong linear relationship between those two variables.

The *regression coefficient* is 0.746, which shows that if the *SD* of capacity goes up with 1 (more equal dispersion of the number of seats per rank), the *SD* of visitors goes up with 0.746 (more equal spread of visitors among ranks). The following regression formula can be made (B_0 (*constant*) = 21.57, B_1 (*regression coefficient*) = 0.746):

*SD of visitors among all ranks = 21.57 + 0.746 * SD of capacities of all ranks*

The *SD* of capacities of all ranks of a hypothetical theater is 37, shown in example 1.
Example 1: *21.57 + 0.746 * 37 = 49.172*
The *SD* of capacities of all ranks of a hypothetical theater is 15, shown in example 2.
Example 2: *21.57 + 0.746 ** 15 = 32.76
Example 1 has a higher equality of dispersion of the number of seats per rank (*SD* = 37) than example 2 (*SD* = 15) and at the same time also a higher equality of dispersion of visitors among ranks (*SD* = 49.172) than example 2 (*SD* = 32.76).

=>
-The *SD* of capacity of all ranks has a significant effect on the *SD* of visitors among all ranks, $b = 0.746$, $t = 4.474$, $p < 0.01$ ($p = 0.00$).
-The *SD* of capacity explains a strong significant proportion of variance in the *SD* of visitors among all ranks, $r^2 = 0.257$, $F(1, 58) = 20.014$, $p < 0.01$.

To conclude, *H0* can be rejected and *H1* can be accepted. The more dispersed are the capacities of all ranks, the more dispersed are the visitors among all ranks too.

3.1.3.3 Multi regression analysis

This is an additional section at which the influence of two variables on the spread of visitors among ranks will be tested.

At hypothesis 1.2, the influence of relative price difference between the 1st and 2nd rank on the spread of visitors among all ranks is computed. Taking both the equality of capacities among ranks (as in hypothesis 1.3) and the relative price difference between the 1st and 2nd rank (as in hypothesis 1.2) as independent variables, and the spread of visitors as the dependent variable: a *multi regression analysis* can be computed. The strength and size of the influence those two independent variables have on the spread of visitors among ranks will be assessed.

The percentage of declared variance in the dispersion of visitors among the various ranks by the dispersion of capacities of the various ranks and relative price differences between ranks can be seen at the r^2: 0.494 ($F(2, 57) = 27.789$, $p < 0.01$) (De Vocht, 2013). 49.4% of the variance in the dispersion of visitors among the different ranks is declared by the dispersion of capacities of the different ranks and the relative price difference between ranks, which is a strong effect (appendix 2.1.3d).

3.1.4 The higher the number of total ranks, the higher the number of visitors.

In prior calculations, only the effect of relative price difference between the 1st and 2nd rank on attendance is taken into account. But the effect of the number of ranks on attendance is ignored. To correct for this lack, the following hypotheses are made:

H0: The number of total ranks in a theater hall will not influence attendance.

H1: The number of total ranks in a theater hall will influence attendance.

Theater halls with two ranks have an average attendance of 361.64 (*SD* = 168.79); three ranks have a mean of 384.29 visitors (*SD* = 283.17); four ranks have an average attendance of 564.57 (*SD* = 373.91) and five ranks have a mean of 507.29 visitors (*SD* = 203.01). Appendix 2.1.5b shows the course of the line of these means. Until five ranks, it is an upward sloping line: more ranks means more attendance. In this relationship there also does to be taken into consideration that it is likely that, for instance, theaters with four ranks have a higher total capacity than theaters with two ranks.

Furthermore, when a theater has more than two ranks, a golden rank could possibly be included. In this sample, a golden rank is just taken as an extra rank. (The influence of a golden rank in particular will be analyzed in section 3.1.6.)

3.1.4.1 One-way ANOVA

To test if these differences between means of attendance per total number of ranks is significant, a *one-way analysis of variance* (*one-way ANOVA*) is computed with the following result:

$F(3, 56) = 1{,}591$; $p > 0.05$ ($p = 0.202$).

The *F statistic* is close to 1, which means that just a small proportion of variance in attendance is caused by the number of ranks. Furthermore, $p > 0.05$ which means that the differences in attendance among the different number of total ranks cannot be called significant.

3.1.4.2 Spearman's Rho

To look further into the variables 'number of ranks' and 'attendance', the correlation between them can be computed by a *Spearman's Rho* test. Because we have to deal with, respectively, an ordinal variable and an interval/ratio variable, a *Spearman's Rho* test have to be computed instead of a *Pearson's R test* which is used before.

The *Spearman's Rho* test showed a weak, positive correlation between the number of ranks and attendance, $r = 0.204$, $n = 60$, $p > 0.05$ ($p = 0.117$).
Overall, the positive correlation between those variables does show us that the more ranks a theater hall has, the more attendance there will be. But this correlation is weak, and even more important, it is not significant.

=>

To conclude, *H0* cannot be rejected. The total number of ranks does not have a significant influence on attendance.

3.1.4.3 Non-statistical conclusions

Even though the results of the *one-way ANOVA* were not significant, a quick look into the statistics is interesting.

Report

Absolute number of visitors

Number of ranks	Mean	N	Std. Deviation
2	361,64	22	168,787
3	384,29	24	283,169
4	564,57	7	373,909
5	507,29	7	203,010
Total	411,37	60	254,763

Table 1

With looking at the means of attendance per number of ranks, there is seen that having two ranks has the smallest attendance and having three ranks has a bit more attendance but still not that much. A high rise in attendance is seen by having four or five ranks, the mean of attendance suddenly lies between 500 and 600.

=>

-It is not a significant result ($p > 0.05$), but having four or five ranks will give a theater a higher average attendance than having two or three ranks.

3.1.5 A golden rank has a relatively high occupation rate

While studying the effectiveness of the golden rank, a look into the occupation rate of the golden rank is useful. The number of visitors at a golden rank is divided by the possible capacity of the golden rank: the golden rank occupation rate. This rate is compared by the total number of visitors at a performance divided by the total possible capacity of a theater hall: the total occupation rate.

H0: The golden rank occupation rate is the same as the total occupation rate.
H1: The golden rank occupation rate is not the same as the total occupation rate.

3.1.5.1 Independent samples t-test

The golden rank occupation rate has a mean of 59.60% (*SD* = 30.16%) and the total occupation rate has a mean of 46.85% (*SD* = 25.46%). In short, the golden rank has on average more than 50% occupied, which is a higher percent than the average percentage of total occupation. To analyze the difference in means between these two groups, an *independent-samples t-test* has to be done because there are less than three groups (Verhoeven, 2013).

By looking at the occupation rate of the golden rank in comparison with the total occupation rate, there can be concluded that there is not a significant difference: $t = -0.891$, $p > 0.05$ ($p = 0.382$).

=>

To conclude, *H0* cannot be rejected. Even though the golden rank occupation rate is slightly higher than the total occupancy rate, this difference is not significant.

3.2 Hypothesis 2 - Price differences between ranks influence total revenue.

3.2.1 The higher the price differences between ranks, the higher the total revenue.

There is evidence for the fact that if price differences between ranks are high, the attendance also is relatively high. But do price differences have effect on total revenue too? Mostly it is the case that by more attendance there is more revenue. But if the price differences between ranks are higher at the same time, which will result in relatively cheaper prices from rank 2, this could cause a lower total revenue. Unless the price of rank 1 is set more expensive to have a higher starting point from which the prices of the other ranks are subtracted, as said in section 4.6.2.
The following hypotheses will help to give insight in this issue.

H0: Price differences between ranks do not influence total revenue.
H1: Price differences between ranks do influence total revenue.

The same categories of price differences between the 1st and 2nd rank as used at hypothesis 1.1 (low, modest, high) will be used for analyzing this hypothesis. By using these categories, the average number of visitors per category is computed.

The high price difference category (2nd rank price deviates between 75% and 83% from the 1st rank price) has an average total revenue of €19,157 (*SD* = €10,979); the modest price difference category (2nd rank price deviates between 83% and 91% from the 1st rank price) has an average total revenue of €10,766 (*SD* = €6,543), and the low price difference category (2nd rank price deviates between 91% and 99% from the 1st rank price) has a mean of €14,644 (*SD* = €8,936).
With the measurement *SD* as the average deviation of all observations with respect to the mean (De Vocht, 2013).

In short, the category with the highest price difference has the highest total revenue. The category with modest price difference has the lowest total revenue and the category with low price differences has a modest total revenue. This same trend was seen at attendance (hypothesis 1.1). The category with the highest price difference, hence, has the highest total attendance, which probably also influences the number of total revenue. Next to price differences between ranks, the attractiveness of the theatrical production and the intensity of the marketing campaign does not have to be forgotten.

3.2.1.1 One-way ANOVA

To test if the differences in means of total revenue of each category of price difference are significant, a *one-way analysis of variance* (*one-way ANOVA*) is computed; $F(2, 57) = 2,942$; $p > 0,05$ ($p = 0.061$).

The *F*-statistic is to test the statistical significance of the variance. It measures if the variance is caused by variance between categories or by variance within categories. If the *F*-statistic is above 1, the majority of the variance is declared by variance between categories (De Vocht, 213).
The *p*-value is testing the statistical significance of the whole statistical test (De Vocht, 213). In this research the level of significance of 0.05 will be applied. This means that if the *p*-value is below 0.05, the results of the test are statistical significant, but if the *p*-value is above 0.05, the results of the test are not statistical significant.

In this case, the *F statistic* is close to 1, which means that just a small proportion of variance in total revenue is caused by price difference. Furthermore, $p > 0.05$; which means that the differences in total revenue among the various price categories cannot be called significant.

3.2.1.2 Pearson's R

The *one-way ANOVA* did not give a significant result, but maybe there will be a correlation between those two variables. A *Pearson's R* test gave evidence for a weak and negative correlation between the relative price difference rank 2 to rank 1 and total revenue, $r = -0.0128$, $n = 60$, $p > 0.05$ ($p = 0.328$).

r is the *correlation coefficient* which expresses the strength and direction of the relationship between the two variables and *n* is the number of observation included in the test (De Vocht, 2013).

This *one-way ANOVA* test results in a negative correlation which means that the smaller the price difference between the 1st and 2nd rank is, the less the total revenue will be. But this correlation is weak and not significant ($p > 0.05$).

=>

To conclude, *H0* cannot be rejected. Price differences between the 1st and 2nd rank do not have a significant influence on total revenue.

3.2.2 The higher the price differences between ranks, the higher the revenue per visitor.

Next to total revenue, another revenue related variable, the revenue per visitor, will be assessed in relation to price differences between ranks. This variable is comparable with the average price a visitor paid for a theater ticket.

H0: The height of price differences between ranks does not affect the revenue per visitor.
H1: The height of price differences between ranks does affect the revenue per visitor.

3.2.2.1 Pearson's R

A *Pearson's R* test was computed to assess the relationship between revenue per visitor and relative price difference between the 1^{st} and 2^{nd} rank. There is a positive correlation between the two variables, $r = 0.332$, $n = 60$, $p < 0.01$ (p = 0.009). A scatterplot summarizes the results (appendix 2.2.2b).

Overall, there is a modestly strong, positive correlation between relative price difference between 1^{st} and 2^{nd} rank and revenue per visitor. An increase in price difference between the 1^{st} and 2^{nd} rank is modestly strong and significantly correlated with a decrease in revenue per visitor.

3.2.2.2 Single regression analysis

To assess the strength of the effect price difference has on revenue per visitor, a *single regression analysis* can be computed. The percentage of declared variance in revenue per visitor by relative price difference can be seen at the r^2; 0.110 (De Vocht, 2013). 11% of the variance in revenue per visitor is declared by price difference between the 1^{st} and 2^{nd} rank. This means that there is a modestly strong linear relationship between those two variables.

A regression formula can be shaped in which there can be discovered the height of the relative price difference between rank 2 and rank 1 in order to realize the desired total revenue. The plain formula looks like this: $\hat{Y} = B_0 + B_1 * X$ (De Vocht, 2013)

$\hat{Y}$ is the predicted *Y*-value, the dependent variable, which in this case is the total revenue. B_0 is the *Constant*: it is the intercept of the regression line with the *Y-axis*, in other words, it is the value of $\hat{Y}$ if $X = 0$. Thirdly, B_1 is the *regression coefficient*, this value indicates the change in $\hat{Y}$ if X increases with one. Last but not least, the X is the independent variable which influences the $\hat{Y}$, in this case X is the relative price difference rank 2 to rank 1 (De Vocht, 2013).

A *single regression analysis* with those two variables gave a B_0 (*constant*) of -20.675 and B_1 (*regression coefficient*) is 0.595. The following formula is formed:

Revenue per visitor = -20.675 *+ 0.595 * relative price difference rank 2 to rank 1*

The *regression coefficient* shows that if the 2nd rank price will be set one percentage closer to the 1st rank price (smaller price difference), the revenue per visitor will increase with 0.595.

To make this formula understandable, two examples will be given.
In the first example a hypothetical theater has a relative price difference rank 2 to rank 1 of 93%.
Example 1: -20.675 *+ 0.595 * 93 = €34.66*
The second example is an example of a hypothetical theater with the price of the 2nd rank being 80% of the price of the 1st rank.
Example 2: -20.675 *+ 0.595 * 80 = €26.92*
Concluding from this, if the price difference is relatively high (2nd rank price is 80% of the 1st rank price instead of 93%), the revenue per visitor is relatively low (€*26.92* instead of €34.66).

=>
-The price difference between the 1st and 2nd rank has a significant effect on revenue per visitor, b = 0.595, t = 2.684, $p < 0.01$ (p = 0.009). b is the *regression coefficient* and t tests the null hypothesis. A big t, with a small p-value means that the *regression coefficient* is not 0 and therefore the null hypothesis can be rejected (De Vocht, 2013).
-The price difference also explains a modestly strong and significant proportion of variance in revenue per visitor, r^2 = 0.110, $F(1, 58)$ = 7,204, $p < 0.01$.

To conclude, *H0* can be rejected and *H1* can be accepted. Price difference does have influence on revenue per visitor: the higher the price difference between the 1st and 2nd rank, the lower the revenue per visitor.

3.2.3 The higher the number of ranks, the higher the total revenue.

To correct for the lack of taking into account the price differences of the 3rd, 4th and 5th ranks (if they are present), this hypothesis will assess those numbers of ranks too.

H0: The number of total ranks in a theater hall will not affect total revenue.
H1: The number of total ranks in a theater hall will affect total revenue.

Theater halls with two ranks have an average total revenue of €11,415 (*SD* = €5,491); three ranks have a mean of €12,649 (*SD* = €9,441); four ranks have an average revenue of €16,534 (*SD* = €11,414) and five ranks have a mean of €15,703 (*SD* = €7,180).

When a theater has more than two ranks, a golden rank could be included. In this sample, a golden rank is just taken as an extra rank. (The influence of a golden rank in particular will be analyzed at section 3.2.5.)

3.2.3.1 One-way ANOVA

To test if the means of total revenue per total number of ranks significantly differ from each other, a *one-way analysis of variance* (*one-way ANOVA*) is computed: $F(3, 56) = 0.973$; $p > 0.05$ ($p = 0.412$).

The *F statistic* is below 1, the variance in revenue therefore cannot be declared by the different number of ranks. The variance within a category is bigger than the variance between the categories, which makes *F* having a statistic below 1 (Verhoeven, 2013).

Furthermore, $p > 0.05$ ($p = 0.412$); which means that the variance in total revenue among the different number of total ranks cannot be called significant.

3.2.3.2 Spearman's Rho

To get a closer look into the variables 'number of ranks' and 'total revenue', the correlation between them can be computed by a *Spearman's Rho* test. Because we have to deal with, respectively, an ordinal variable and an interval/ratio variable, a *Spearman's* Rho test have to be computed instead of a *Pearson's R* test which is mostly used before.

The *Spearman's Rho* test showed a weak, positive correlation between the number of ranks and total revenue, $r = 0.178$, $n = 60$, $p > 0.05$ ($p = 0.174$).

Overall, the positive correlation between those variables does show that the more ranks a theater hall has, the higher the total revenue will be. Appendix 2.2.3c gives an overview of the results. But this correlation is weak and not significant.

=>

To conclude, *H0* cannot be rejected. The total number of ranks does not have a significant influence on total revenue.

3.2.3.3 Non-statistical conclusions

Even though the results of the *one-way ANOVA* were not significant, it is interesting to look into the statistics.

		Total Revenue	
		Mean	Standard Deviation
Number of ranks	2	11415	5491
	3	12649	9441
	4	16534	11414
	5	15703	7180

Table 2

With looking at the means of total revenue per number of ranks, there is seen that having two or three ranks will give the lowest total revenue. Having four or five ranks will give, in comparison with two and three ranks, a higher total revenue.

Next to this, there has to be said that the capacity of the theater hall has to be taken into account. Theaters with a larger number of ranks, mostly have a larger total capacity and therefore they can sell more tickets which results in a higher total revenue.

=>

-It is not a significant result ($p > 0.05$), but having four or five ranks will give a theater a higher total revenue than having two or three ranks.

3.2.4 The higher the number of ranks, the higher the revenue per visitor.

H0: The number of total ranks in a theater hall will not influence the revenue per visitor.

H1: The number of total ranks in a theater hall will influence the revenue per visitor.

Theater halls with two ranks have on average a revenue per visitor of €33.33 (*SD* = €8.54); three ranks have a mean of €33.93 (*SD* = €9.36); four ranks have an average revenue per visitor of €28.19 (*SD* = €3.11) and five ranks have a mean of €29.84 (*SD* = €3.96).

When a theater has more than two ranks, a golden rank could be included. In this sample, a golden rank is just taken as an extra rank. (The influence of the golden rank in particular will be analyzed at section 3.2.5.)

3.2.4.1 One-way ANOVA

To test if there is significant variance in revenue per visitor among the different rank categories, a *one-way analysis of variance* (*one-way ANOVA*) is computed: $F(3, 56) = 1.229$; $p > 0.05$ ($p = 0.308$). The *F statistic* is just above 1, just a small proportion of the total variance in revenue per visitor can be declared by the variance between rank categories.

Furthermore, $p > 0.05$ ($p = 0.412$); which means that the differences among the rank categories in revenue per visitor cannot be called significant.

3.2.4.2 Spearman's Rho

Even though the variance in revenue per visitor between rank categories is not significant, the possible correlation between number of ranks and revenue per visitor is computed.
A correlation between, respectively, an ordinal variable and an interval/ratio variable forces to compute a *Spearman's Rho* test which gave a weak, negative correlation between the number of ranks and revenue per visitor, $r = -0.122$, $n = 60$, $p > 0.05$ ($p = 0.354$).

This negative correlation means that the more ranks a theater hall has, the lower is the revenue per visitor. But it is a weak and not significant correlation.

=>
To conclude, *H0* cannot be rejected. The total number of ranks does not have a significant influence on revenue per visitor.

3.2.4.3 Non-statistical conclusions

A non-statistical analysis of the statistics about the relation between number of ranks and revenue per visitor, in comparison with the statistics about the relation between the number of ranks and total attendance and total revenue, could give interesting insights.

		Revenue per Visitor	
		Mean	Standard Deviation
Number of ranks	2	33,33	8,54
	3	33,93	9,36
	4	28,19	3,11
	5	29,84	3,96

		Total Revenue	
		Mean	Standard Deviation
Number of ranks	2	11415	5491
	3	12649	9441
	4	16534	11414
	5	15703	7180

		Absolute number of visitors	
		Mean	Standard Deviation
Number of ranks	2	362	169
	3	384	283
	4	565	374
	5	507	203

Table 3

Not all of the statistics mentioned in table 3 are statistically significant, but some non-statistical relationships are seen. By looking at the means of revenue per visitor per number of ranks, there is seen that having two or three ranks result in the highest revenue per visitor. Applying four or five ranks will give, in comparison to two and three ranks, a lower revenue per visitor. These statistics are the contrary of the statistics of total revenue. But this can be explained by taking into account the statistics of attendance. Attendance has a higher percentage of increase between the lowest and highest number of ranks (56,08%) than total revenue (44,84%) has. A relatively lower amount of revenue has to be divided by a relatively higher amount of attendance, which causes a lower revenue per visitor.

3.2.5 Theaters with a golden rank have a higher total revenue than theaters without a golden rank.

Computing the means of total revenue for performances with a golden rank and without a golden rank, the following results are shown:

		Total Revenue	
		Mean	Standard Deviation
Golden rank	No	12807	8415
	Yes	13602	7783

Table 4

Performances with a golden rank have a slightly higher total revenue than performances without a golden rank.

H0: Total revenue for theater with and without a golden rank is equal.
H1: Total revenue for theaters with and without a golden rank is not equal.

3.2.5.1 Independent-samples t-test

An *independent-samples t-test* showed that the difference between means of total revenue, showed in table 4, is not significant: $t = -0.336$, $p > 0.05$ ($p = 0.382$).

=>

To conclude, *H0* cannot be rejected. Even though theaters with a golden rank have a slightly higher total revenue than theaters without, this variance is not significant.

3.3 Hypothesis 3 - What differences are seen between four performing art genres in price, attendance and revenue?

3.3.1 There is variance between the four genres in relative price difference rank 2 to rank 1.

H0: There is no significant variance between the four genres in relative price difference rank 2 to rank 1.
H1: There is significant variance between the four genres in relative price difference rank 2 to rank 1.

The price of the 2nd rank is on average 91.52% from the 1st rank at the genre musical & show (*SD* = 3,95%); the price of the 2nd rank is on average 89.88% from the 1st rank at the genre music (*SD* = 4,92%); the price of the 2nd rank is on average 89.13% from the 1st rank at the genre drama (*SD* = 4.35%) and at the genre dance the average price difference between those two ranks is 88.16% (*SD* = 3,17%). The *SD* is mentioned together with each mean to give an indication of the deviation of all observations with respect to the mean (De Vocht, 2013).

Musical & show is the genre which has on average the lowest price difference between the 1st and 2nd rank. Dance is the genre which has on average the highest price difference between the 1st and 2nd rank. To conclude from this, there is variance in relative price difference rank 2 to rank 1 between the four genres, but is this variance between genres significant?

3.3.1.1 One-way ANOVA

To test if the variance in means of price difference in each genre is significant, a *one-way analysis of variance* (*one-way ANOVA*) is computed. This analysis results in a significant outcome: $F(3, 55) = 3.267$; $p < 0.05$.

The *F*-statistic tests if the variance is statistical significant by measuring if the variance is caused by variance between categories or by variance within categories. If the *F*-statistic is above 1, the majority of the variance is declared by variance between categories (De Vocht, 213).
The *p*-value is testing the statistical significance of the whole statistical test (De Vocht, 213). A level of significance of 0.05 is be applied. This means that if the *p*-value is below 0.05, the results of the test are statistical significant, but if the *p*-value is above 0.05, the results of the test are not statistical significant.

The *one-way ANOVA* test of this hypothesis results in a $F > 1$ which means that the majority of variance in price difference is caused by differences between genres (De Vocht, 2013). $p < 0.05$, therefore, the results of the test are significant. To get a deeper insight about the strength of the relationship, the *Eta Squared* is an important measurement (De Vocht, 2013). In this case the *Eta Squared* is 0.151, which means that the different genres are causing 15.1% of total variance in relative price difference rank 2 to rank 1, which is a modest effect (De Vocht, 2013).

3.3.1.2 Post Hoc Multiple Comparisons

The *one-way ANOVA* just showed that the four genres significantly differ from each other in relative price difference between the 1st and 2nd rank. But with this is not said which genres are significantly different from each other. This can be tested by a *Post Hoc Multiple Comparison* (De Vocht, 2013). A homogeneity of variance is present in this case, but the samples are not equal in number which leads to compute a *Bonferroni Test*. This test gives evidence for the fact that a significant variance is present between the genres musical & show and dance ($p < 0.05$).

Musical & show is the genre with the lowest price difference and dance is the genre with the highest relative price difference, that was already showed before. But with this *Post Hoc Multiple Comparison*, the difference between those genres can be called significant.

=>

To conclude, *H0* can be rejected. There is significant variance in price difference between the four genres.

3.3.2 There is variance in attendance between the four genres

H0: There is no significant variance in attendance between the four genres.
H1: There is significant variance in attendance between the four genres.

The absolute attendance of the genre musical & show is 339 (*SD* = 237), the absolute attendance of the genre music is the highest of all (*M* = 612, *SD* = 386). The lowest mean of attendance is for the genre drama (*M* = 312, *SD* = 162), but the genre dance has a quite high score with a mean of 512 visitors (*SD* = 187).

As seen in hypothesis 3.1, genre is a possible influencer of relative price differences between ranks. But this hypothesis has nothing to do with price differences between ranks, as actually is the subject of this thesis. However, the variance in attendance between the four genres could give an insight in the popularity of each particular genre, which on its turn can give an explanation for the results of hypothesis 3.1.

3.3.2.1 One-way ANOVA

To test if the differences in means of attendance between the four genres are significant, a one-*way analysis of variance* (*one-way ANOVA*) was computed. This analysis gave a significant result: $F(3, 56) = 4.848$; $p < 0.01$. $F > 1$ which means that the majority of variance in attendance is caused by differences between genres (De Vocht, 2013). To get knowledge of the strength of the relationship, the *Eta Squared* is an important measurement (De Vocht, 2013). In this case the *Eta Squared* is 0.206, which means that the different genres are causing 20.6% of total variance in attendance, which is a modestly strong effect (De Vocht, 2013).

3.3.2.2 Post Hoc Multiple Comparisons

The *one-way ANOVA* showed that the four genres significantly differ from each other in attendance. Which genres significantly differ from each other are tested by a *Post Hoc Multiple Comparison* (De Vocht, 2013).

The *Bonferroni Test* will be applied, the same test as applied before. This test results in a significant difference between the genres music and musical & show ($p < 0.05$) and music and drama ($p < 0.05$).

Music is the genre with the highest absolute attendance and drama the one with the lowest absolute attendance. Since the absolute attendance of the genre musical & show is not differing much from the attendance of the genre drama in absolute terms, there also is seen a significant variance between music and musical & show.

=>

To conclude, *H0* can be rejected. There is significant variance in attendance between the four genres.

3.3.3 There is variance in total revenue between the four genres.

H0: There is no significant variance in total absolute revenue between the four genres.

H1: There is significant variance in total absolute revenue between the four genres.

The absolute revenue of the genre musical & show is €13,396 (*SD* = €7,896), the absolute revenue of the genre music is the highest of all (*M* = €18,280, *SD* = €13,145). The lowest mean of revenue is for the genre drama (*M* = €8,393, *SD* = €4,494), but the genre dance has a quite high score with a mean of €15,731 (*SD* = €5,717).

3.3.3.1 One-way ANOVA

To test if the differences between those means of revenue are significant, a one-*way analysis of variance* (*one-way ANOVA*) is computed. A significant result is found: $F(3, 56) = 4.581$; $p < 0.01$. $F > 1$ which means that the majority of variance in revenue is caused by differences between genres (De Vocht, 2013). To get knowledge of the strength of the relationship, the *Eta Squared* is an important measurement (De Vocht, 2013). In this case the *Eta Squared* is 0.197, which means that the different genres are causing 19.7% of total variance in average revenue per genre, which is a modestly strong effect (De Vocht, 2013).

3.3.3.2 Post Hoc Multiple Comparisons

The *one-way ANOVA* showed that the four genres significantly differ from each other in revenue. With the following *Post Hoc Multiple Comparison* there will be clear which genres are significantly differing from each other (De Vocht, 2013).

The *Bonferroni Test* will be used again: a significant difference is present between the genres drama and music ($p < 0.05$) and drama and dance ($p < 0.05$).
When looking to the absolute amounts, music and dance both have a relatively high average revenue, while drama has a relatively very low average revenue.

=>

The *H0* can be rejected. There is a significant variance in total absolute revenue between the four genres.

3.3.4 There is variance in the number of ranks between the four genres.

The total number of ranks varies between 2 and 5. If the number is 3 or higher, this could mean that there is a golden rank included. But in this sample, the golden rank is taken as an extra rank. (The influence of the golden rank in particular is analyzed in sections 3.1.6 and 3.2.5.)

H0: There is no significant variance in the number of ranks between the four genres.
H1: There is significant variance in the number of ranks between the four genres.

3.3.4.1 Chi-square

Because the variable 'genre' is a nominal variable and the variable 'number of ranks' is an ordinal variable, the appropriate test for doing a bivariate analysis is the *chi-square* (x^2) (Bryman, 2008). The result of this test was not significant, therefore the number of ranks did not differ by genre, $x^2(1, n = 60) = 11.861$, $p > 0.05$. x^2 gives a determination of the level of significance of the relationship.

The greater the x^2 is, the stronger is the relationship between the two variables with always taking into account the *p*-value (De Vocht, 2013).

=>

H0 cannot be rejected. There is no significant variance in the number of ranks between the four genres.

3.4 Final price schemes

To end up with one final optimal price scheme which results in highest attendance and highest revenue for each individual performance is complex to shape. Each theater has its own values and its own characteristics, also each performance has a different genre, popularity and audience.

To get an idea of an optimal price scheme for theaters, a division is made between the four genres to sketch an optimal price scheme for each of them. Analyzing the dataset used for this research, from each genre the performance with the highest gained revenue and the highest realized attendance is considered as the performance with the most optimal price scheme. The following table is showing the results.

Optimal price scheme per genre

	Musical & Show	**Music**	**Drama**	**Dance**
Golden Rank	-	108,33 %	-	107,94 %
1st Rank	100 %	100 %	100 %	100 %
2nd Rank	91,89 %	91,33 %	92,54 %	84,13 %
3rd Rank	83,78 %	82,59 %	86,57 %	52,37 %
4th Rank	-	74 %	-	-
	N = 1	*N = 1*	*N = 1*	*N = 1*
	Theater Orpheus	*Theater Orpheus*	*De Flint*	*Lucent Danstheater*

*All prices are given in a percentage relative to the 1st rank price

Table 5

A clearly aberrant price scheme is seen at the genre dance. In contrast to the other genres, big price differences between ranks are present. In general, dance is with drama one of the most unpopular performing art genres (Berg, Marlet, Ponds, & Van Woerkens, 2011). But this contrasting price scheme could have compensated for its unpopularity and therefore especially resulted in high attendance, but also in high revenue.

Table 5 functions as an advice for practitioners who need to set prices for their performing arts performance in one of those genres. There has to be taken into consideration that the previously sketched optimal price schemes are based on one performance of each genre, which results in not totally representative price schemes. The price schemes mentioned in table 5 are guidelines, not standards, and will guide practitioners towards optimal attendance and revenue.

4. Conclusions

All relationships tested in this research are categorized per variable and are summarized in this concluding chapter before an answer will be given on the research question.

4.1 Price difference

At first, the distance between rank prices has a positive and significant influence on total attendance: with a 1% larger relative price difference of price rank 2 to price rank 1, attendance will increase with 16 visitors. Furthermore, 7.1% of the variance in attendance is declared by the height of the relative price difference between the 1st and 2nd rank.

Secondly, the distance between rank prices also has a positive, strong and significant influence on the spread of visitors among all ranks: the higher the price differences, the more equally spread are the visitors among the various ranks.

An equal spread of visitors among ranks is evidence for an effective operation of the rank prices with a significant relative price difference between them.

Thirdly, the distance between rank prices has a positive, but not significant influence on total revenue. Moreover, the revenue per visitor is significantly, modestly strong, but negatively affected by the distance between rank prices. 11% of total variance in revenue per visitor is declared by relative price differences between ranks.

With knowing that attendance is positively and significantly affected by price differences and revenue not, (almost) the same size of revenue has to be divided among more visitors: ending in a lower amount of revenue per visitor. A limited increase in total revenue could be explained by the fact that having higher price differences between ranks, cheaper tickets are taking away tickets which could be sold for a 1st rank price.

At the other hand, if simultaneously the 1st rank price increases, the other ranks have a higher starting point from which to derive their prices. This could overcome the problem of having a lower total revenue: the high priced ranks will make up for the ranks with low prices.

The theory of framing (section 1.3.2.6.4) is applicable in this case. Visitors interpret the 1st rank price as their reference point from which the other rank prices are interpreted and observed as 'discount prices'. These 'discount prices' are attractive for visitors and motivate them to buy a ticket for a seat in the 2nd rank or up instead of the 1st rank, despite of the less quality.

4.2 Capacity

Besides price differences between ranks, also the dispersion of the number of seats in the various ranks (the equality of rank capacities) is of strong and significant influence on the spread of visitors among all ranks.

Taking both the dispersion of capacities at various ranks and price differences between ranks as influencers of the spread of visitors among all ranks: 49.4% of variance in the spread of visitors among ranks is caused by the first two mentioned variables.

Capacity of ranks especially could have influence on the spread of visitors among ranks when the rank capacities are visible for (potential) visitors at their reservation of theater tickets. Digital sales systems of theater tickets are showing the seating plan of a theater hall, including the rank capacities, from which potential visitors can choose their own seats. The size of the capacities of ranks possibly affects the choice of a seat.

4.3 Number of ranks

The influence of the number of ranks in a theater hall is tested on its effect on attendance, revenue and revenue per visitor. The number of ranks seems to have a positive influence on attendance and revenue, but a negative effect on revenue per visitor. Before giving to much value to these relationships, there has to be known that none of these relationships were significant.

But with significant evidence for the fact that the distance between rank prices positively affects attendance, a remark has to be made. Because to implement effective price differences between ranks, a theater hall needs a sufficient number of ranks. Therefore, the number of ranks certainly is important.

Theaters with 4 ranks or more sometimes forget to implement the price policy efficiently among all ranks. Even with 4 or more ranks, the price differences have to be significant, otherwise people will not be motivated to take a seat at a lower quality rank. There could be predicted that if the price differences are significant between all ranks, the number of ranks will have a positive and significant influence on attendance too.

4.4 Genre

Hypothesis 3 analyzed the variance in variables (price difference, attendance, total revenue and number of ranks) between the genres musical & show, music, drama or dance.

Overall, music and dance had the best results, while musical & show and drama scored on average low at all variables. At the variables relative price differences, attendance and total revenue were found significant variances among the four genres, despite of the number of ranks.

4.4.1 Popular VS unpopular

When still looking at genre, the tests in this research showed that musical & show and drama are the less popular genres having on average the lowest total attendance (appendix 2.5a). This outcome is partially in contrast to the findings of the research of Van den Berg, Marlet, Ponds, & Van Woerkens (2011). They said that in 2011 the attendance at the genres musical & show and music was the highest, while the attendance for drama and dance was the lowest.

Focusing on musical & show, in this research, this genre has the smallest relative price difference between the 1st and 2nd rank and it has performed in no theater hall with a number of ranks higher than 3 (appendix 2.5a). Low attendance and revenue seemingly is the consequence even when this genre on average is the most popular genre.

Dance, in contrary, has on average the highest relative price difference between the 1st and 2nd rank and has played 42.86% of its performances in theaters with a higher number of ranks than 3. The average price policy of the genre dance seems theoretically most beneficial, and it is. Together with music, dance always got the highest average scores at all variables, even though dance has been seen by Van den Berg et al. (2011) as one of the less popular genres.

There has to be admit that the popularity of the theatrical productions included in the dataset could have influenced the results. The dance productions selected for this research were both presented by quite popular dance companies, while one of the theatrical production included in the genre musical & show, the musical *Love Story,* was in general not a successful theatrical production. These differences in popularity could possibly have biased the results of this research.

4.5 Values

The height of price differences between ranks affects attendance in a significant and positive way. Attendance is a factor which is necessary for a theater in realizing its main values. Without visitors to implement on and to interact with their values, none of their values will be realized. Societal values, social values, educational values, all of them are achievable with a sufficient number of visitors.

Theater's instrumental value, financial value, is not significantly affected by price differences between ranks. But attendance is and by maximizing attendance, the sales of ancillary goods are

maximized too (section 1.3.2.6.3). According to this theory, maximizing attendance can directly lead to maximizing revenue too. Furthermore, a thriving theater with a sufficient amount of attendance helps to enhance the popularity of a theater, visitors' goodwill for a theater, long term relationships with visitors and regular visitors. This all will increase the probability to receive financial value out of the social sphere, for instance donations (Klamer, 2013). Also the probability of a cooperation with volunteers increases, which could save costs for a theater.
For receiving financial value: in every unexpected corner there are solutions. Just think creatively.

4.6 To conclude…

To summarize the previous sections of this concluding chapter, all relationships between variables are listed in table 6 (derived from appendix 3). In a glance there can be observed which variables have a significant or an insignificant influence on other variables.

Variable	**Significant influence =** → **Insignificant influence =** –//→	**Variable**
Relative price difference rank 2 to rank 1	→	Attendance
	→	Equality attendance
	–//→	Revenue
	→	Revenue per visitor
Capacity	→	Equality attendance
Number of ranks	–//→	Attendance
	–//→	Revenue
	–//→	Revenue per visitor
Genre	→	Price difference
	→	Attendance
	→	Revenue
	–//→	Number of ranks

Table 6

With the help of table 6, an answer on the research question of this Master Thesis can be given. The research question of this research is (with price policy including the existence of various ranks in a theater hall with certain price differences between them):

How can the price policy, related to price differentiation, of performing art's theater halls best be structured to maximize attendance and revenue?

There is tested that the price policy has an influence on attendance in a significant and positive way, while the price policy had a positive but insignificant effect on total revenue. Even though the effect on total revenue was not significant, both effects were positive. This leads to the final conclusion that higher relative price differences between ranks are contributing to the maximization of attendance and revenue, with the highest contribution to attendance.

Of course, price policy is not the only factor influencing attendance and revenue. The effect of capacities of the ranks, the number of total ranks and genre is in this research taken into consideration too. However, the day of the week or even the weather of the day could also have an influence on attendance and revenue, but these kind of factors are not taken into account.

By implementing a price policy with higher price differences between ranks, start to think about the height of the 1st rank price. This price functions as a starting point from which the other rank prices are set. If a theater implements high price differences without increasing the 1st rank price (starting point), a decrease in revenue per visitor could possibly be the consequence.

The main advice I want to give to all theatres is that they have to let go their mindset of thinking about financial aspects, pricing, as destroying their artistic image. When earned income increases, theatres have more possibilities and flexibility in achieving their main values as artistic, cultural and societal values. Furthermore, a good structured price policy will contribute to maximizing revenue and especially attendance. The higher the attendance, the better theaters' main values could be realized.

In short, pricing is of great importance!

5. Reflection

Firstly, in the previous research, there is studied the effect of price policy on attendance and revenue. As already said, this factor is not the sole influencer. Therefore the side variables: capacities of ranks, the number of total ranks and genre are included in the research too.

But a probably even more important influencer is the popularity and attractiveness of the theatrical production which is linked to the intensity of the marketing campaign. A suggestion for future research would be to study the effect of marketing by researching if a variance in marketing budget causes variance in attendance and revenue.

Besides this, other variables as the day of the week, the time of the day, the location and service of the theater and even the weather of the day could have an effect on attendance and revenue, but these factors were all holding *ceteris paribus* in the research done in this thesis.

Secondly, as it is about the variables included in the dataset, only the variable of relative price difference studied in hypotheses 1.2 and 1.3 was including the relative price differences between all ranks in a theater hall by studying the dispersion of the rank prices.

In all other hypotheses there was included the relative price difference of rank 2 to rank 1 as being the indicator for the price differences between all ranks. A 1st and 2nd rank was present in all theater halls, in contrast to 3 or more ranks, therefore the relative price difference between these two ranks is an usable measurement. But I would like to see future researchers dive deeper into the optimal relative price differences between all ranks in a theater hall to achieve an even more complete overview.

In third place, the number of cases included in the dataset are limited because of the limited availability of useful data (n = 60). This means that on average each of the four genres in this dataset has a number of 20 cases. To realize a more representative result, a larger dataset with more performances and more theatrical productions is desired. This is an advice for a future researcher of this topic.

The dataset was categorized in four performing art genres. This has caused results based on aggregate data of all four genres. Felton (1992) and Seaman (2006) stated that aggregate data mostly results in generalized results. Hence, those results are not true for each individual case. Therefore it would be interesting to do a similar research but exclusively focusing on one of the four genres to achieve specific and in depth results.

Lastly, an advice for theaters is to think of the theater's specific situation, for instance its own audience, and imply a price policy adjusted to that. Each theater is different and unique and therefore needs another structure of the price policy fitting to its unique situation.

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7. Appendices

Appendix 1

A total of 25 theaters are included in the dataset:

Theater	City
Chassé Theater	Breda
Cool kunst en cultuur	Heerhugowaard
De Flint	Amersfoort
Koninklijk Theater Carré	Amsterdam
Lucent Danstheater	Den Haag
Martini Plaza	Groningen
Music Sacrum/Schouwburg Arnhem	Arnhem
Parktheater Eindhoven	Eindhoven
Parkstad Limburg Theaters	Heerlen
Rabotheater Hengelo	Hengelo
Schouwburg Agnietenhof	Tiel
Schouwburg de Kampanje	Den Helder
Schouwburg Orpheus	Apeldoorn
Schouwburg Venray	Venray
Spant!	Bussum
Stadsschouwburg Groningen	Groningen
Stadsschouwburg Velsen	IJmuiden
Theater aan de parade	's-Hertogenbosch
Theater de Bussel	Oosterhout
Theater De Lievekamp	Oss
Theater de Maagd	Bergen op Zoom
Theater de Maaspoort	Venlo
Theater Hengelo	Hengelo
Theaters Tilburg	Tilburg
World Forum Theater	Den Haag

Appendix 2

Hypothesis 1

2.1.1 Hypothesis 1.1 - The higher the price differences between ranks, the higher the attendance.

2.1.1 a=

		Count
Number of ranks	2	22
	3	24
	4	7
	5	7

2.1.1 b=

		Absolute number of visitors		
		Mean	Standard Deviation	Standard Error of Mean
Price difference rank 2 to rank 1	High:75% - 83%	689	345	173
	Modest: 83% - 91%	351	205	37
	Low: 91% - 100%	439	270	53

2.1.1 c=

Oneway

Descriptives

Absolute number of visitors

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1,00	4	689,00	345,373	172,687	139,43	1238,57	407	1169
2,00	30	350,80	204,833	37,397	274,31	427,29	39	879
3,00	26	438,54	269,607	52,874	329,64	547,44	80	1227
Total	60	411,37	254,763	32,890	345,55	477,18	39	1227

Test of Homogeneity of Variances

Absolute number of visitors

Levene Statistic	df1	df2	Sig.
1,446	2	57	,244

ANOVA

Absolute number of visitors

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	437566,672	2	218783,336	3,677	,031
Within Groups	3391785,262	57	59505,005		
Total	3829351,933	59			

Post Hoc Tests

Multiple Comparisons

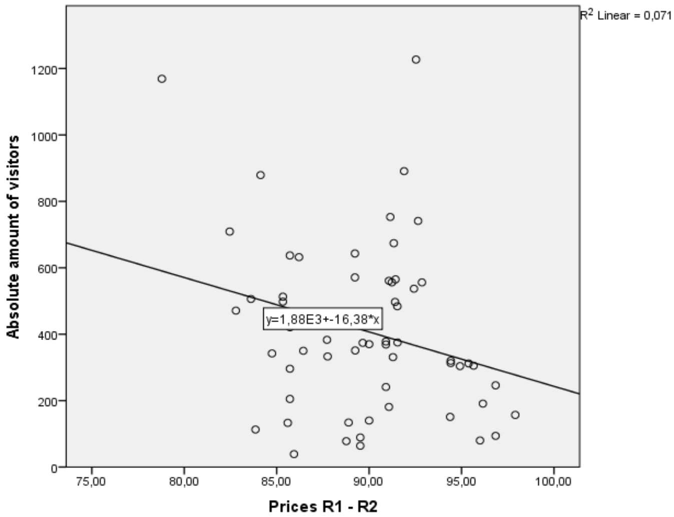
Dependent Variable: Absolute number of visitors

Bonferroni

(I) Class_Price	(J) Class_Price	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1,00	2,00	338,200*	129,845	,035	17,91	658,49
	3,00	250,462	131,015	,183	-72,71	573,63
2,00	1,00	-338,200*	129,845	,035	-658,49	-17,91
	3,00	-87,738	65,362	,554	-248,97	73,49
3,00	1,00	-250,462	131,015	,183	-573,63	72,71
	2,00	87,738	65,362	,554	-73,49	248,97

*. The mean difference is significant at the 0.05 level.

2.1.1 d=



2.1.1 e=

Correlations

		Absolute number of visitors	Prices R1 - R2
Absolute number of visitors	Pearson Correlation	1	-,267[*]
	Sig. (2-tailed)		,041
	N	60	59
Prices R1 - R2	Pearson Correlation	-,267[*]	1
	Sig. (2-tailed)	,041	
	N	59	59

*. Correlation is significant at the 0.05 level (2-tailed).

2.1.1 f=

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Prices R1 - R2[b]	.	Enter

a. Dependent Variable: Absolute number of visitors

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,267[a]	,071	,055	249,783

a. Predictors: (Constant), Prices R1 - R2

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	273004,893	1	273004,893	4,376	,041[b]
	Residual	3556327,650	57	62391,713		
	Total	3829332,542	58			

a. Dependent Variable: Absolute number of visitors
b. Predictors: (Constant), Prices R1 - R2

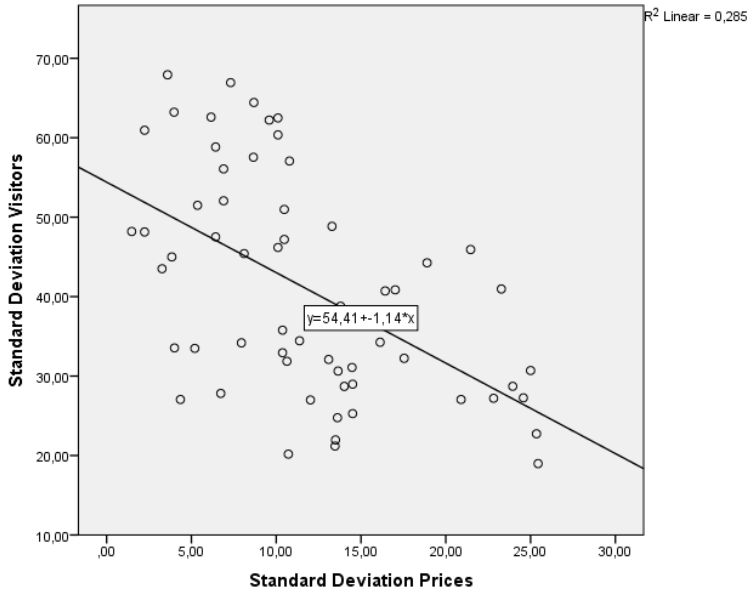
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1881,098	703,330		2,675	,010
	Prices R1 - R2	-16,381	7,831	-,267	-2,092	,041

a. Dependent Variable: Absolute number of visitors

2.1.2 Hypothesis 1.2 - The higher the price differences between ranks, the more equally spread are the visitors among ranks.

2.1.2 a=



2.1.2 b=

Correlations

		Standard Deviation Visitors	Standard Deviation Prices
Standard Deviation Visitors	Pearson Correlation	1	-,534**
	Sig. (2-tailed)		,000
	N	60	60
Standard Deviation Prices	Pearson Correlation	-,534**	1
	Sig. (2-tailed)	,000	
	N	60	60

**. Correlation is significant at the 0.01 level (2-tailed).

2.1.2 c=

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Standard Deviation Prices[b]	.	Enter

a. Dependent Variable: Standard Deviation Visitors

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,534[a]	,285	,273	11,82771

a. Predictors: (Constant), Standard Deviation Prices

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3233,709	1	3233,709	23,115	,000[b]
	Residual	8113,891	58	139,895		
	Total	11347,600	59			

a. Dependent Variable: Standard Deviation Visitors

b. Predictors: (Constant), Standard Deviation Prices

Coefficients[a]

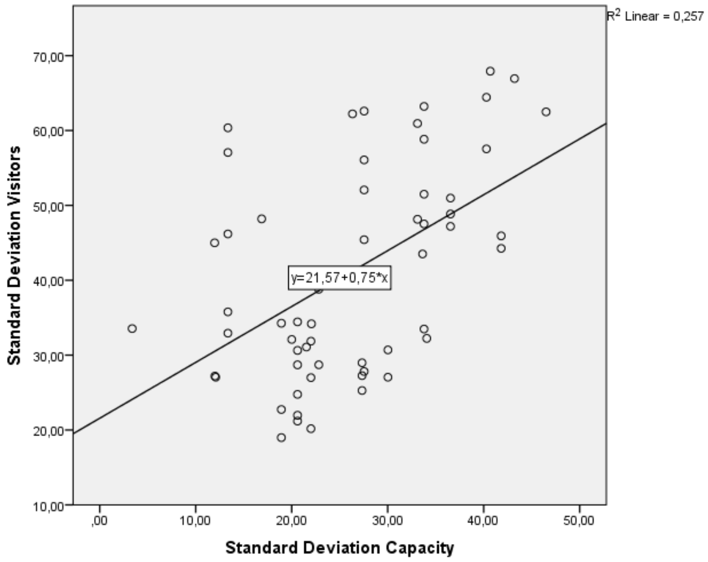
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	54,408	3,183		17,092	,000
	Standard Deviation Prices	-1,139	,237	-,534	-4,808	,000

a. Dependent Variable: Standard Deviation Visitors

**. Correlation is significant at the 0.01 level (2-tailed).

2.1.3 Hypothesis 1.3 - The more equally divided the capacities of the ranks ar more equally spread are the visitors among the different ranks.

2.1.3 a=



2.1.3 b=

Correlations

		Standard Deviation Capacity	Standard Deviation Visitors
Standard Deviation Capacity	Pearson Correlation	1	,507**
	Sig. (2-tailed)		,000
	N	60	60
Standard Deviation Visitors	Pearson Correlation	,507**	1
	Sig. (2-tailed)	,000	
	N	60	60

**. Correlation is significant at the 0.01 level (2-tailed).

2.1.3 c=

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Standard Deviation Capacity[b]	.	Enter

a. Dependent Variable: Standard Deviation Visitors

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,507[a]	,257	,244	12,06050

a. Predictors: (Constant), Standard Deviation Capacity

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2911,168	1	2911,168	20,014	,000[b]
	Residual	8436,432	58	145,456		
	Total	11347,600	59			

a. Dependent Variable: Standard Deviation Visitors

b. Predictors: (Constant), Standard Deviation Capacity

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21,574	4,608		4,681	,000
	Standard Deviation Capacity	,746	,167	,507	4,474	,000

a. Dependent Variable: Standard Deviation Visitors

Multiple regression SD capacity and SD price on SD visitors

2.1.3 d=

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Standard Deviation Prices, Standard Deviation Capacity[b]	.	Enter

a. Dependent Variable: Standard Deviation Visitors

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,703[a]	,494	,476	10,03983

a. Predictors: (Constant), Standard Deviation Prices, Standard Deviation Capacity

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5602,109	2	2801,054	27,789	,000[b]
	Residual	5745,491	57	100,798		
	Total	11347,600	59			

a. Dependent Variable: Standard Deviation Visitors

b. Predictors: (Constant), Standard Deviation Prices, Standard Deviation Capacity

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	35,702	4,711		7,578	,000
	Standard Deviation Capacity	,676	,140	,459	4,847	,000
	Standard Deviation Prices	-1,044	,202	-,489	-5,167	,000

a. Dependent Variable: Standard Deviation Visitors

2.1.4 Hypothesis 1.4 - The higher the number of total ranks, the higher the number of visitors.

2.1.4 a=

Means

Case Processing Summary

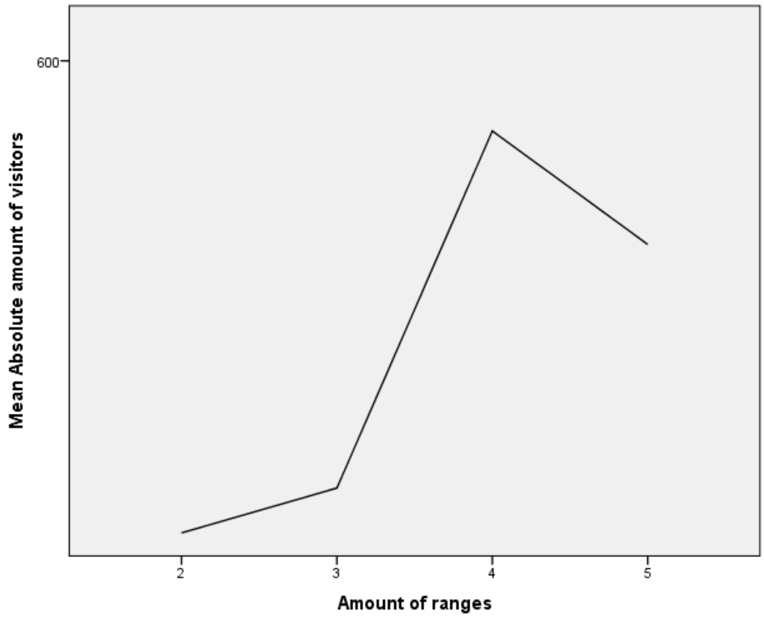
	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Absolute number of visitors * Amount of ranks	60	63,2%	35	36,8%	95	100,0%

Report

Absolute number of visitors

Number of ranks	Mean	N	Std. Deviation
2	361,64	22	168,787
3	384,29	24	283,169
4	564,57	7	373,909
5	507,29	7	203,010
Total	411,37	60	254,763

2.1.4 b=



2.1.4 c=

One Way

Test of Homogeneity of Variances

Absolute number of visitors

Levene Statistic	df1	df2	Sig.
2,397	3	56	,078

ANOVA

Absolute number of visitors

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	300706,741	3	100235,580	1,591	,202
Within Groups	3528645,192	56	63011,521		
Total	3829351,933	59			

Robust Tests of Equality of Means

Absolute number of visitors

	Statistic[a]	df1	df2	Sig.
Welch	1,376	3	15,971	,286

a. Asymptotically F distributed.

2.1.4 d=

Nonparametric Correlations

Correlations

			Number of ranks	Absolute number of visitors
Spearman's rho	Number of ranks	Correlation Coefficient	1,000	,204
		Sig. (2-tailed)	.	,117
		N	60	60
	Absolute number of visitors	Correlation Coefficient	,204	1,000
		Sig. (2-tailed)	,117	.
		N	60	60

2.1.5 Hypothesis 1.5 - A golden rank has a relatively high occupation rate

2.1.5 a=

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Attendance Golden Rank To Capacity Golden Rank	15	8,82	90,48	59,5965	30,15563
Total Attendance to Capacity	60	5,79	96,74	46,8464	25,45570
Valid N (listwise)	15				

2.1.5 b=

T-Test

Group Statistics

	Golden_Rank	N	Mean	Std. Deviation	Std. Error Mean
Total Attendance to Capacity	No	45	45,0877	24,99533	3,72608
	Yes	15	52,1226	26,97233	6,96423

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total Attendance to Capacity	Equal variances assumed	,269	,606	-,926	58	,358	-7,03488	7,59863	-22,24519	8,17543
	Equal variances not assumed			-,891	22,574	,382	-7,03488	7,89836	-23,39097	9,32122

Hypothesis 2

2.2.1 Hypothesis 2.1 - The higher the price difference between ranks, the higher the total revenue.

2.2.1 a=

		Total Revenue	
		Mean	Standard Deviation
Price difference rank 2 to rank 1	High:75% - 83%	19,157	10,979
	Modest: 83% - 91%	10,766	6543
	Low: 91% - 100%	14,644	8936

2.2.1 b=

Oneway

Descriptives

Total Revenue

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1,00	4	19157,00	10979,153	5489,577	1686,72	36627,28	9970	34704
2,00	30	10765,97	6542,537	1194,498	8322,94	13208,99	1222	25353
3,00	26	14643,62	8936,280	1752,549	11034,17	18253,06	1971	39730
Total	60	13005,68	8203,957	1059,126	10886,38	15124,99	1222	39730

Test of Homogeneity of Variances

Total Revenue

Levene Statistic	df1	df2	Sig.
1,371	2	57	,262

ANOVA

Total Revenue

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	371598065,863	2	185799032,931	2,942	,061
Within Groups	3599391597,121	57	63147221,002		
Total	3970989662,983	59			

Robust Tests of Equality of Means

Total Revenue

	Statistic[a]	df1	df2	Sig.
Welch	2,302	2	7,938	,163

a. Asymptotically F distributed.

Post Hoc Tests

Multiple Comparisons

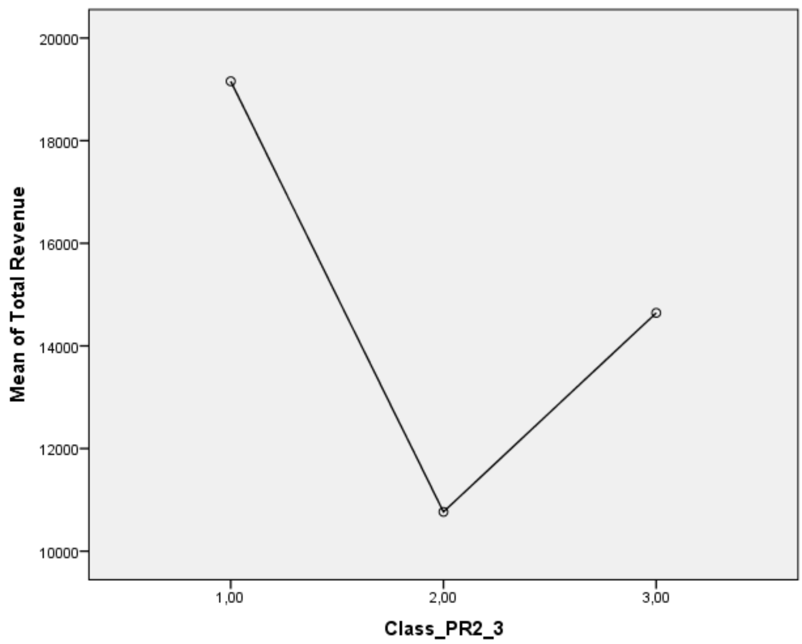
Dependent Variable: Total Revenue

Bonferroni

(I) Class_Price	(J) Class_Price	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
1,00	2,00	8391,033	4229,860	,156	-2042,71	18824,77
	3,00	4513,385	4267,967	,884	-6014,35	15041,12
2,00	1,00	-8391,033	4229,860	,156	-18824,77	2042,71
	3,00	-3877,649	2129,236	,222	-9129,81	1374,51
3,00	1,00	-4513,385	4267,967	,884	-15041,12	6014,35
	2,00	3877,649	2129,236	,222	-1374,51	9129,81

2.2.1 c=

Means Plots

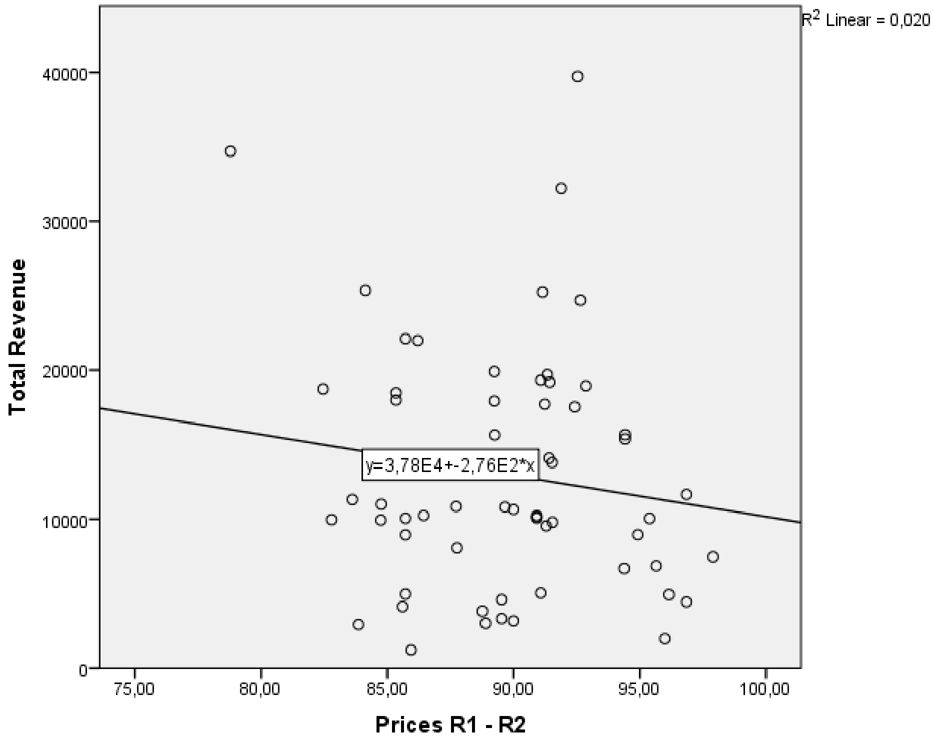


2.2.1 d=

Correlations

		Prices Rank 1 - 2	Total Revenue
Prices Rank 1 - 2	Pearson Correlation	1	-,128
	Sig. (2-tailed)		,328
	N	60	60
Total Revenue	Pearson Correlation	-,128	1
	Sig. (2-tailed)	,328	
	N	60	60

2.2.1 e=



2.2.2 Hypothesis 2.2 - The higher the price difference between ranks, the higher the revenue per visitor.

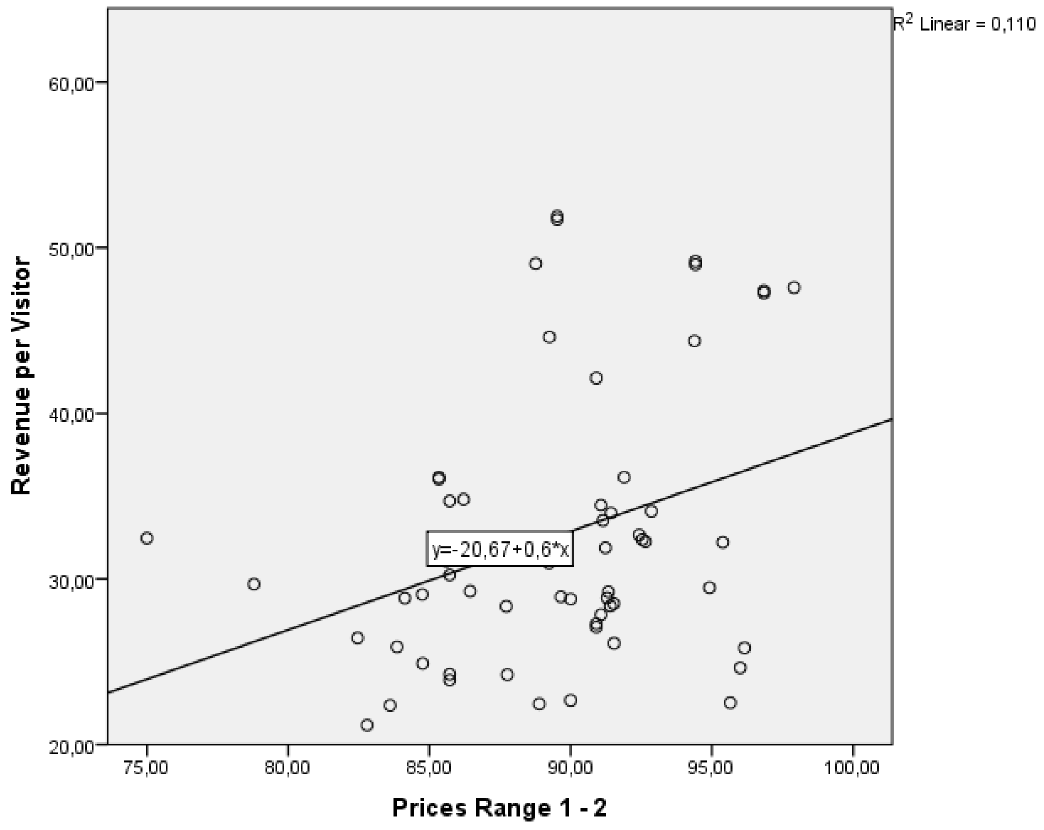
2.2.2 a=

Correlations

		Prices Rank 1 - 2	Revenue per Visitor
Prices Rank 1 - 2	Pearson Correlation	1	,332**
	Sig. (2-tailed)		,009
	N	60	60
Revenue per Visitor	Pearson Correlation	,332**	1
	Sig. (2-tailed)	,009	
	N	60	60

**. Correlation is significant at the 0.01 level (2-tailed).

2.2.2 b=



2.2.2 c=

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Prices Rank 1 - 2[b]	.	Enter

a. Dependent Variable: Revenue per Visitor

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,332[a]	,110	,095	7,77617

a. Predictors: (Constant), Prices Rank 1 - 2

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	435,628	1	435,628	7,204	,009[b]
	Residual	3507,188	58	60,469		
	Total	3942,816	59			

a. Dependent Variable: Revenue per Visitor

b. Predictors: (Constant), Prices Rank 1 - 2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-20,675	19,860		-1,041	,302
	Prices Rank 1 - 2	,595	,222	,332	2,684	,009

a. Dependent Variable: Revenue per Visitor

2.2.3 Hypothesis 2.3 - The higher the number of ranks, the higher the total revenue.

2.2.3 a=

		Total Revenue	
		Mean	Standard Deviation
Number of ranks	2	11415	5491
	3	12649	9441
	4	16534	11414
	5	15703	7180

2.2.3 b=

Oneway

Descriptives

Total Revenue

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
2	22	11414,50	5491,481	1170,788	8979,71	13849,29	3825	24707
3	24	12648,63	9440,556	1927,045	8662,23	16635,02	1222	39730
4	7	16533,57	11414,096	4314,123	5977,29	27089,85	3009	34704
5	7	15702,86	7180,485	2713,968	9062,02	22343,70	3173	25245
Total	60	13005,68	8203,957	1059,126	10886,38	15124,99	1222	39730

Test of Homogeneity of Variances

Total Revenue

Levene Statistic	df1	df2	Sig.
2,445	3	56	,073

ANOVA

Total Revenue

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	196805979,287	3	65601993,096	,973	,412
Within Groups	3774183683,696	56	67396137,209		
Total	3970989662,983	59			

Robust Tests of Equality of Means

Total Revenue

	Statistic[a]	df1	df2	Sig.
Welch	,960	3	15,833	,436
Brown-Forsythe	,844	3	20,181	,486

a. Asymptotically F distributed.

Post Hoc Tests

Multiple Comparisons

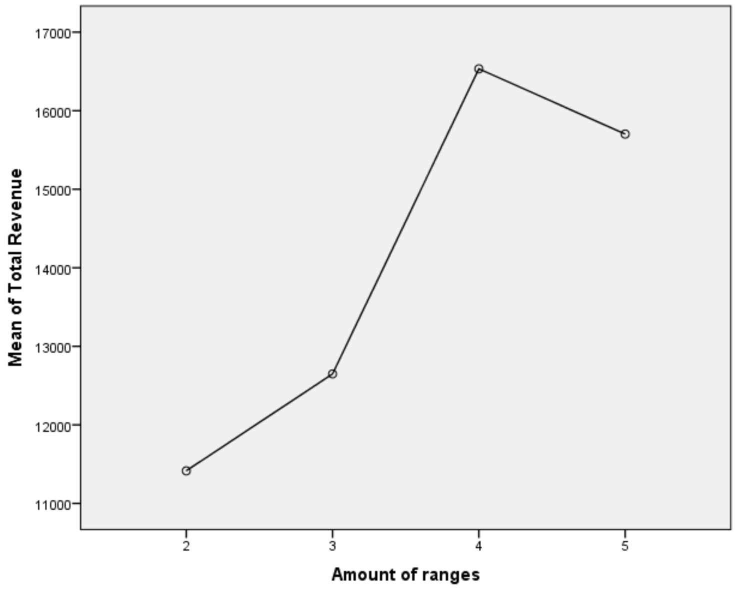
Dependent Variable: Total Revenue

Bonferroni

(I) Amount of ranks	(J) Amount of ranks	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
2	3	-1234,125	2423,145	1,000	-7861,96	5393,71
	4	-5119,071	3562,510	,938	-14863,32	4625,18
	5	-4288,357	3562,510	1,000	-14032,61	5455,89
3	2	1234,125	2423,145	1,000	-5393,71	7861,96
	4	-3884,946	3526,499	1,000	-13530,70	5760,80
	5	-3054,232	3526,499	1,000	-12699,98	6591,52
4	2	5119,071	3562,510	,938	-4625,18	14863,32
	3	3884,946	3526,499	1,000	-5760,80	13530,70
	5	830,714	4388,170	1,000	-11171,90	12833,33
5	2	4288,357	3562,510	1,000	-5455,89	14032,61
	3	3054,232	3526,499	1,000	-6591,52	12699,98
	4	-830,714	4388,170	1,000	-12833,33	11171,90

2.2.3 c=

Means Plots



2.2.3 d=

Correlations

			Total Revenue	Amount of ranks
Spearman's rho	Total Revenue	Correlation Coefficient	1,000	,178
		Sig. (2-tailed)	.	,174
		N	60	60
	Number of ranks	Correlation Coefficient	,178	1,000
		Sig. (2-tailed)	,174	.
		N	60	60

2.2.4 Hypothesis 2.4 - The higher the number of ranks, the higher the revenue per visitor.

2.2.4 a=

		Revenue per Visitor	
		Mean	Standard Deviation
Number of ranks	2	33,33	8,54
	3	33,93	9,36
	4	28,19	3,11
	5	29,84	3,96

2.2.4 b=

Oneway

Descriptives

Revenue per Visitor

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
2	22	33,3278	8,54436	1,82166	29,5394	37,1161	22,37	49,04
3	24	33,9304	9,35770	1,91013	29,9790	37,8818	21,17	51,90
4	7	28,1866	3,10728	1,17444	25,3128	31,0603	22,46	31,41
5	7	29,8440	3,96141	1,49727	26,1803	33,5077	22,67	34,46
Total	60	32,5626	8,17480	1,05536	30,4508	34,6744	21,17	51,90

Test of Homogeneity of Variances

Revenue per Visitor

Levene Statistic	df1	df2	Sig.
3,279	3	56	,027

ANOVA

Revenue per Visitor

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	243,567	3	81,189	1,229	,308
Within Groups	3699,248	56	66,058		
Total	3942,816	59			

Robust Tests of Equality of Means

Revenue per Visitor

	Statistic[a]	df1	df2	Sig.
Welch	3,056	3	23,483	,048
Brown-Forsythe	2,010	3	55,200	,123

a. Asymptotically F distributed.

Post Hoc Tests

Multiple Comparisons

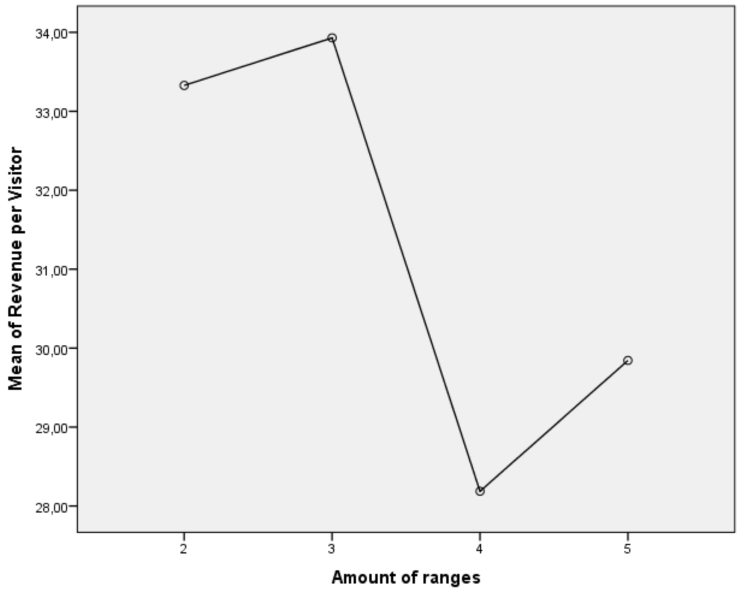
Dependent Variable: Revenue per Visitor

Bonferroni

(I) Number of ranks	(J) Number of ranks	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
2	3	-,60264	2,39897	1,000	-7,1644	5,9591
	4	5,14122	3,52697	,903	-4,5058	14,7883
	5	3,48379	3,52697	1,000	-6,1632	13,1308
3	2	,60264	2,39897	1,000	-5,9591	7,1644
	4	5,74386	3,49131	,633	-3,8057	15,2934
	5	4,08643	3,49131	1,000	-5,4631	13,6359
4	2	-5,14122	3,52697	,903	-14,7883	4,5058
	3	-5,74386	3,49131	,633	-15,2934	3,8057
	5	-1,65743	4,34439	1,000	-13,5403	10,2254
5	2	-3,48379	3,52697	1,000	-13,1308	6,1632
	3	-4,08643	3,49131	1,000	-13,6359	5,4631
	4	1,65743	4,34439	1,000	-10,2254	13,5403

2.2.4 c=

Means Plots



2.2.4 d=

Correlations

			Revenue per Visitor	Number of ranks
Spearman's rho	Revenue per Visitor	Correlation Coefficient	1,000	-,122
		Sig. (2-tailed)	.	,354
		N	60	60
	Number of ranks	Correlation Coefficient	-,122	1,000
		Sig. (2-tailed)	,354	.
		N	60	60

2.2.5 Hypothesis 2.5 - Theaters with a golden rank have a higher total revenue than theaters without a golden rank.

2.2.5 a=

		Total Revenue	
		Mean	Standard Deviation
Golden Rank	No	12807	8415
	Yes	13602	7783

2.2.5 b=

T-Test

Group Statistics

	Golden Rank	N	Mean	Std. Deviation	Std. Error Mean
Total Revenue	No	45	12806,87	8415,000	1254,434
	Yes	15	13602,13	7783,392	2009,663

Independent Samples Test

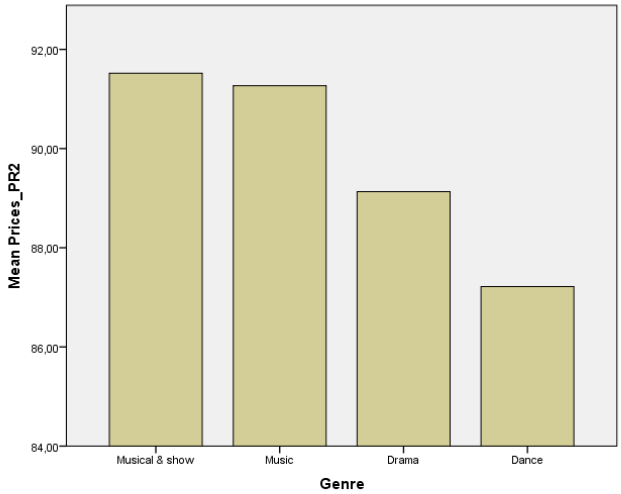
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total Revenue	Equal variances assumed	,071	,791	-,323	58	,748	-795,267	2464,732	-5728,964	4138,430
	Equal variances not assumed			-,336	25,789	,740	-795,267	2369,040	-5666,836	4076,303

Hypothesis 3

2.3.1 Hypothesis 3.1 - There is variance between the four genres in relative price difference rank 2 to rank 1

2.3.1 a=

		Prices R1 - R2	
		Mean	Standard Deviation
Genre	Musical & show	91,52	3,95
	Music	89,88	4,92
	Drama	89,13	4,35
	Dance	88,16	3,17



2.3.1 b=

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Prices * Genre	Between Groups	(Combined)	168,545	3	56,182	3,267	,028
	Within Groups		945,837	55	17,197		
	Total		1114,381	58			

Measures of Association

	Eta	Eta Squared
Prices * Genre	,389	,151

2.3.1 c=

Oneway

ANOVA

Prices

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	168,545	3	56,182	3,267	,028
Within Groups	945,837	55	17,197		
Total	1114,381	58			

Robust Tests of Equality of Means

Prices

	Statistic[a]	df1	df2	Sig.
Welch	3,150	3	26,412	,042

a. Asymptotically F distributed.

Test of Homogeneity of Variances

Prices

Levene Statistic	df1	df2	Sig.
1,295	3	55	,285

Multiple Comparisons

Dependent Variable: Prices

Bonferroni

(I) Genre	(J) Genre	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Musical & show	Music	,25192	1,77798	1,000	-4,6145	5,1183
	Drama	2,38832	1,36801	,519	-1,3560	6,1326
	Dance	4,30165*	1,49665	,034	,2053	8,3980
Music	Musical & show	-,25192	1,77798	1,000	-5,1183	4,6145
	Drama	2,13640	1,73479	1,000	-2,6118	6,8846
	Dance	4,04973	1,83793	,191	-,9808	9,0802
Drama	Musical & show	-2,38832	1,36801	,519	-6,1326	1,3560
	Music	-2,13640	1,73479	1,000	-6,8846	2,6118
	Dance	1,91333	1,44506	1,000	-2,0419	5,8685
Dance	Musical & show	-4,30165*	1,49665	,034	-8,3980	-,2053
	Music	-4,04973	1,83793	,191	-9,0802	,9808
	Drama	-1,91333	1,44506	1,000	-5,8685	2,0419

*. The mean difference is significant at the 0.05 level.

2.3.2 Hypothesis 3.2 - There is variance in attendance between the four genres.

2.3.2 a=

		Absolute number of visitors	
		Mean	Standard Deviation
Genre	Musical & show	339	237
	Music	612	386
	Drama	312	162
	Dance	512	187

2.3.2 b=

Oneway

Descriptives

Absolute number of visitors

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum	Maximum
Musical & show	17	338,76	236,966	57,473	216,93	460,60	64	891
Music	9	612,11	385,590	128,530	315,72	908,50	140	1227
Drama	20	312,40	161,941	36,211	236,61	388,19	39	674
Dance	14	511,86	186,803	49,925	404,00	619,71	133	879
Total	60	411,37	254,763	32,890	345,55	477,18	39	1227

Test of Homogeneity of Variances

Absolute number of visitors

Levene Statistic	df1	df2	Sig.
5,438	3	56	,002

ANOVA

Absolute number of visitors

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	789557,471	3	263185,824	4,848	,005
Within Groups	3039794,462	56	54282,044		
Total	3829351,933	59			

Robust Tests of Equality of Means

Absolute number of visitors

	Statistic[a]	df1	df2	Sig.
Welch	4,492	3	23,757	,012
Brown-Forsythe	3,745	3	20,500	,027

a. Asymptotically F distributed.

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Absolute number of visitors

Bonferroni

(I) Genre	(J) Genre	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Musical & show	Music	-273,346*	96,044	,037	-536,05	-10,65
	Drama	26,365	76,858	1,000	-183,86	236,59
	Dance	-173,092	84,085	,265	-403,08	56,90
Music	Musical & show	273,346*	96,044	,037	10,65	536,05
	Drama	299,711*	93,517	,013	43,92	555,50
	Dance	100,254	99,542	1,000	-172,02	372,52
Drama	Musical & show	-26,365	76,858	1,000	-236,59	183,86
	Music	-299,711*	93,517	,013	-555,50	-43,92
	Dance	-199,457	81,187	,103	-421,52	22,61
Dance	Musical & show	173,092	84,085	,265	-56,90	403,08
	Music	-100,254	99,542	1,000	-372,52	172,02
	Drama	199,457	81,187	,103	-22,61	421,52

*. The mean difference is significant at the 0.05 level.

Measures of Association

	Eta	Eta Squared
Absolute number of visitors * Genre	,454	,206

2.3.3 Hypothesis 3.3 - There is variance in total revenue between the four genres.

2.3.3 a=

		Total Revenue	
		Mean	Standard Deviation
Genre	Musical & show	13396	7896
	Music	18280	13145
	Drama	8393	4494
	Dance	15731	5717

2.3.3 b=

Oneway

Descriptives

Total Revenue

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Musical & show	17	13395,88	7895,738	1914,998	9336,27	17455,50	3322	32199
Music	9	18280,22	13144,942	4381,647	8176,13	28384,32	3173	39730
Drama	20	8392,85	4493,959	1004,880	6289,61	10496,09	1222	19699
Dance	14	15730,86	5717,459	1528,055	12429,69	19032,02	4132	25353
Total	60	13005,68	8203,957	1059,126	10886,38	15124,99	1222	39730

Test of Homogeneity of Variances

Total Revenue

Levene Statistic	df1	df2	Sig.
10,170	3	56	,000

ANOVA

Total Revenue

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	782511823,399	3	260837274,466	4,581	,006
Within Groups	3188477839,585	56	56937104,278		
Total	3970989662,983	59			

Robust Tests of Equality of Means

Total Revenue

	Statistic[a]	df1	df2	Sig.
Welch	6,465	3	23,179	,002
Brown-Forsythe	3,401	3	18,386	,040

a. Asymptotically F distributed.

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Total Revenue

Bonferroni

					95% Confidence Interval	
(I) Genre	(J) Genre	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
Musical & show	Music	-4884,340	3110,560	,732	-13392,41	3623,73
	Drama	5003,032	2489,196	,296	-1805,47	11811,53
	Dance	-2334,975	2723,266	1,000	-9783,71	5113,76
Music	Musical & show	4884,340	3110,560	,732	-3623,73	13392,41
	Drama	9887,372*	3028,729	,011	1603,13	18171,61
	Dance	2549,365	3223,861	1,000	-6268,61	11367,34
Drama	Musical & show	-5003,032	2489,196	,296	-11811,53	1805,47
	Music	-9887,372*	3028,729	,011	-18171,61	-1603,13
	Dance	-7338,007*	2629,409	,043	-14530,02	-145,99
Dance	Musical & show	2334,975	2723,266	1,000	-5113,76	9783,71
	Music	-2549,365	3223,861	1,000	-11367,34	6268,61
	Drama	7338,007*	2629,409	,043	145,99	14530,02

*. The mean difference is significant at the 0.05 level.

Measures of Association

	Eta	Eta Squared
Total Revenue * Genre	,444	,197

2.3.4 Hypothesis 3.4 - There is variance in the amount of ranks between the four genres.

2.3.4 a=

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Genre * Number of ranks	60	63,2%	35	36,8%	95	100,0%

Genre * Number of ranks Crosstabulation

Count

		Number of ranks				Total
		2	3	4	5	
Genre	Musical & show	7	10	0	0	17
	Music	3	2	2	2	9
	Drama	9	7	2	2	20
	Dance	3	5	3	3	14
Total		22	24	7	7	60

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11,861[a]	9	,221
Likelihood Ratio	15,092	9	,088
Linear-by-Linear Association	3,669	1	,055
N of Valid Cases	60		

a. 10 cells (62,5%) have expected count less than 5. The minimum expected count is 1,05.

2.4 Conclusion genres

2.4 a=

Count

		Number of ranks				Total
		2	3	4	5	
Genre	Musical & show	7	10	0	0	17
	Music	**3**	**2**	**2**	**2**	**9**
	Drama	9	7	2	2	20
	Dance	**3**	**5**	**3**	**3**	**14**
Total		22	24	7	7	60

		Total Attendance to Capacity	
		Mean	Standard Deviation
Genre	Musical & show	38,64	26,85
	Music	**64,76**	**29,07**
	Drama	39,87	20,59
	Dance	**55,26**	**21,29**

		Total Revenue	
		Mean	Standard Deviation
Genre	Musical & show	13396	7896
	Music	**18280**	**13145**
	Drama	8393	4494
	Dance	**15731**	**5717**

		Absolute number of visitors	
		Mean	Standard Deviation
Genre	Musical & show	339	237
	Music	**612**	**386**
	Drama	312	162
	Dance	**512**	**187**

		Prices	
		Mean	Standard Deviation
Genre	Musical & show	91,52	3,95
	Music	89,88	4,92
	Drama	**89,13**	**4,35**
	Dance	**88,16**	**3,17**

Appendix 3

1. Price difference
   - → Attendance
   - → Equality attendance
   - —//→ Revenue
   - → Revenue per visitor

2. Capacity
   - → Equality attendance

3. Ranks
   - —//→ Attendance
   - —//→ Revenue
   - —//→ Revenue per visitor

4. Golden rank
   - —//→ Occupation rate
   - —//→ Revenue

5. Genre
   - → Price difference
   - → Attendance
   - → Revenue
   - —//→ Number of ranks