



# **Introducing Variable Pricing at The Cinema: Its Effects on Viewer Choices, Habits and Perceptions**

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## Abstract

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From an economic perspective, differentiated products call for differentiated pricing as the market efficient solution in face of varying price elasticities of demand. Noticeably, even though films are highly differentiated products, admission prices are uniform, save for a few exceptions. Most important, the existing price discrimination is independent of films themselves. Because licensing costs vary on a film-by-film basis, the current scheme of uniform prices is potentially not the profit-maximizing solution for exhibitors. This thesis seeks to investigate the impact of variable pricing on consumers' choices and filmgoing habits and behaviours. It also analyses the validity of two arguments put forward to justify why uniform pricing might be the efficient solution from a demand standpoint. In an online survey, the study combines conjoint analysis to uncover consumers' preference structure with direct questions to assess their perceptions toward variable pricing. The results show that, although important, price does not become a dominant decision variable, as other factors weigh just as heavily on consumers' choices. On the other hand, we conclude that consumers are price sensitive and that the number of films watched at the cinema decreases, even though we show this need not be the case. Results also show that lower prices are predominantly attributed to cost- (rather than quality-) differentials. Finally, we observe that fairness perceptions are heterogenous and neutral on average and display strong respondent bias.

*Keywords:* Film exhibition, motion picture industry, uniform versus variable pricing, fairness perceptions, demand instability, conjoint analysis

## Abstrato (Português)

**Título:** Introduzindo Preços Variáveis no Cinema: Efeitos sobre as Escolhas, Hábitos e Percepções do Espectador

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De uma perspectiva económica, para produtos diferenciados, preços diferenciados são a solução eficiente mediante diferentes elasticidades da procura. Curiosamente, apesar de filmes serem produtos altamente diferenciados, os preços dos bilhetes de cinema são uniformes, salvo algumas exceções. Crucialmente, a discriminação de preços existente é independente dos próprios filmes. Tendo em conta que as taxas de licença variam entre filmes, o atual esquema de preços não é potencialmente a solução ótima para as salas de cinema. Esta tese procura investigar o impacto de preços variáveis na escolha dos consumidores, nos seus hábitos e comportamentos, bem como analisar a validade de dois argumentos utilizados para justificar por que razão preços uniformes podem ser a solução eficiente da perspectiva da procura. Num questionário *online*, o estudo combina análise *conjoint* para desvendar a estrutura de preferências dos consumidores e questões diretas para avaliar as suas percepções sobre preços variáveis. Os resultados mostram que, apesar de importante, o preço não se torna numa variável de decisão dominante, visto que outros fatores pesam igualmente nas escolhas dos consumidores. Por outro lado, concluímos que os consumidores são sensíveis ao preço e que o número de filmes vistos no cinema decresce, apesar de mostrarmos que este não tem de ser necessariamente o caso. Os resultados mostram também que preços inferiores são predominantemente atribuídos a diferenças de custos e não de qualidade. Por fim, observamos que percepções de justiça são heterogéneas e neutras em média e evidenciam um forte enviesamento por parte dos consumidores.

*Palavras-chave:* Exibição de filmes, indústria cinematográfica, preços uniformes versus preços variáveis, percepções de justiça, instabilidade da procura, análise *conjoint*

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## Introduction

### 1.1. Topic Presentation

The motion picture industry offers some particularities that render it an especially interesting research subject. Because of films' short life cycle, the industry benefits from rich data covering the entire value chain (Eliashberg, Elberse, & Leenders, 2006). Moreover, because films are experience goods, viewers cannot easily evaluate their quality before choice. As a result, they are strongly influenced by psychological (expectations) and informational (word-of-mouth) inputs (Neelamegham & Jain, 1999). Also, filmmakers' decision-making relies heavily on tradition, intuition and rules of thumb and the practical application of scholarly research has been more limited compared to other industries (e.g. consumer packaged goods) (Eliashberg et al., 2006). Finally, films are important cultural products and their variety, wide appeal and social engagement role make for an interesting consumer behaviour research avenue.

Yet, the motion picture industry remains relatively underexplored compared to other industries. Eliashberg et al. (2006) offered a comprehensive review on the body of research on the motion picture industry, identifying research directions of managerial relevance across the value chain. One of those referred to the contractual agreements between distributors and exhibitors and to the specific issue of uniform pricing.

There are different ways in which admission prices can be made variable. Prices can differ across viewing time, seat location or films themselves. Yet, exhibitors' price structure has remained largely uniform. This is puzzling both theoretically and in practice. On the one hand, viewers' willingness to pay is likely to differ across viewing occasions and films themselves – films with different genres, production budgets, stars or critics' reviews should be differently valued by consumers. To the extent pricing for such highly differentiated products as films is the same, the prevalence of uniform pricing is potentially contributing to market inefficiency (Orbach, 2004). Yet, the wholesale price exhibitors pay to studios/distributors differs widely across films (Weinberg, 2005).

Admission pricing is legally imposed by exhibitors (Eliashberg et al., 2006) but impacts both exhibitors' and distributors' payoff, as typical contractual agreements are based on an arrangement whereby the split between parties is not totally fixed, but rather depends on how much the films sell and changes over time (Vogel, 2014). Because the licensing fees exhibitors

pay to studios vary on a film-by-film basis, but the exhibitor does not pass that difference on to the consumer, one can question whether uniform pricing is the optimal pricing strategy to exhibitors. It has been speculated that uniform pricing is likely the result of distributors' market power and indirect influence on prices (Orbach, 2004).

Several reasons have been put forward to justify the practice of price uniformity. On the supply side, uniform pricing can be explained, *inter alia*, by its role in reducing demand uncertainty (a hallmark of the motion picture industry), the agency problem (between exhibitors and distributors) and the administrative complexity of enforcing variable pricing (Orbach, 2004). On the demand side, implementing variable pricing may be constrained by demand uncertainty, demand instability and consumers' fairness perceptions (Orbach, 2004). While price discrimination based on time of day, day of the week and booking time is perceived as fair, discrimination based on film popularity is perceived as unfair (Choi, Jeong, & Mattila, 2015). Moreover, because demand for motion pictures is highly uncertain (De Vany & Walls, 1999), deciding on the specific bases for price differentiation is complex. Additionally, under demand instability, consumers might perceive lower-priced films to be of lower quality, in which case a lower price reduces demand instead of increasing it (Orbach, 2004).

The purpose of this thesis is to understand how variable pricing might impact consumers' choice of films. In particular, this study focuses on the demand arguments against variable pricing. We seek to understand how heavily price could weigh on consumers' choices as a decision variable, how consumers would adjust their preferences, habits and filmgoing behaviours as a result of introducing differentiated pricing, what attributions they would make to lower-priced films and how fair they would perceive variable pricing to be.

This study employs qualitative and quantitative research procedures. In-depth interviews allowed us to uncover greater insight on consumers' decision-making and their views toward variable pricing. Additionally, an online survey employed conjoint analysis to force a trade-off between ticket prices and other film attributes and hence uncover consumers' preference structure. This was complemented with direct questions assessing consumers' price-quality schema, behavioural adjustments and fairness perceptions in a variable-pricing context.

This thesis is organised as follows. First, we review existing literature on two main streams – film audience behaviour and the prevailing practice of uniform pricing. Next, we develop our study's research questions and hypotheses. We proceed to describe our methodology, where we

describe data collection procedures and layout our main findings. We conclude with a general discussion, implications for practice and a set of limitations and suggestions for future research.

## **1.2. Problem Statement**

In order to understand whether admission price discrimination across films is desirable to exhibitors given proposed demand constraints, this thesis strives to analyse how introducing variable pricing impacts the perceptions and choices of filmgoers. In particular, we seek to study how heavily price can weigh on consumers' choice of film, how introducing differentiated pricing affects consumers' preferences and filmgoing habits and behaviours, whether consumers judge lower-priced films as having lower quality and how fair they perceive variable pricing to be.

## **1.3. Academic and Managerial Relevance**

Analysing the impact of price differentiation on consumer choice of films at the cinema is academically relevant inasmuch as the issue of uniform pricing in the motion picture industry is insufficiently researched. Even though observers have discussed the phenomenon for some time, scholarly researched is still very limited.

Moreover, the subject of this thesis is one of evident managerial significance. Because licensing costs are film-specific, uniform pricing is likely not the profit-maximizing solution for the exhibition business or the channel as a whole. Among other implications, uniform pricing harms consumers as well inasmuch as a lower incentive is given to studios to produce high-quality, innovative pictures (Reynolds, 2013). Many arguments have been put forward to justify why such practice prevails but they have not yet been addressed by research. As mentioned by Wierenga (2006, p. 2) "more insight is necessary in consumer behavior with respect to movies." In a demand-driven industry, shedding light onto the impact of price discrimination on filmgoer behaviour might provide the investigation of supply considerations with greater focus.

## **1.4. Scope of Analysis**

This thesis focuses on the effects of price discrimination on a film-by-film basis. Admission price discrimination is already in place on a service-by-service basis (e.g. through 3D and IMAX formats). Other bases include, for instance, booking date, time of day, day of week and season. Discrimination based on these is already applied in some markets and has been covered

by the literature. Discrimination between films themselves for the same service level or time of viewing, however, is the core issue of admission price uniformity and therefore the subject of this study. Moreover, this analysis focuses on Portuguese consumers, as reference prices need to be controlled for to allow for comparisons between subjects. Finally, our study is concerned with the choice and consumption of films in the theatrical window (i.e. cinema), with other release windows (e.g. home video) being only considered concomitantly.

## Literature Review

### 2.1. Film Audience Behaviour

Research on filmgoing behaviour has been traditionally organised in two streams: the economic and the psychological approaches. The economic approach uses aggregate, film-level data and seeks to identify the antecedents of theatrical success, as measured most commonly by box-office receipts. The psychological approach focuses on individual-level decision-making; it includes individual-specific behavioural variables such as needs and values, as well as film production and distribution variables shared with the economic approach (e.g. star participation). Because of the amount of secondary data available, the economic approach has been the most prevalent (Gazley, Clark, & Sinha, 2011).

Because the consumption of films is a highly hedonic experience (Addis & Holbrook, 2010) and films are complex experience products, there are multiple film characteristics that will determine film choice and evaluation (Holbrook, 1999). The extant literature presents contradictory findings on the impact of multiple factors on film success. Nonetheless, it provides evidence that several factors do drive commercial success, namely budget (i.e. production costs), time of release, genre, critics' reviews and MPAA ratings (Pangarker & Smit, 2013).

#### *2.1.1. Antecedents of box office performance*

**Star power.** Many studies have shown film stars to be one of the most important contributors for a film's success owing to their ability to signal superior quality (Addis & Holbrook, 2010) and to elicit an emotional bond with consumers (Till, Stanley, & Priluck, 2008). Film stars carry brand equity through name recognition, favourable image and an association with specific types of films, which can positively affect consumer response and attenuate the impact of critics' reviews (Basuroy, Chatterjee, & Ravid, 2003; Desai & Basuroy, 2005; Levin, Levin, & Heath, 1997).

However, even though some studies have been able to tie star participation to box office revenue (Elberse, 2007; Sochay, 1994; Wallace, Seigerman, & Holbrook, 1993), others have found no significant relation (Desai & Basuroy, 2005; Prag & Casavant, 1994; Ravid, 1999). Desai and Basuroy (2005) argued that (1) there are many elements in a film that determine quality, (2)

successful stars usually have a track-record of both successful and unsuccessful films, and (3) stars' popularity itself might actually entice consumers' interest and prompt them to search for more information and consider critics' reviews more heavily.

Still, film stars hold considerable power in what films are made (Albert, 2008). Many films are given green light because a star has agreed to participate in it, in which case stars are used to cover executives' risk in face of extreme uncertainty (Ravid, 1999). Another hypothesis pertains to the industry's overemphasis on revenues versus profits, whereby executives seek big budgets (to which expensive stars contribute substantially) to reap larger receipts (Ravid, 1999).

Ultimately, it is widely recognized that no film star is a guarantee of success (Albert, 1998), as only the participation of a select group of superstars has been consistently correlated with higher revenues, with most stars displaying substantial variance (De Vany & Walls, 1999).

**Critics' reviews.** Critics are often invited to attend early film screenings (Basuroy et al., 2003) and their reviews are typically published shortly before release. Expert judgments are useful to consumers who otherwise face a taxing choice process as new films are released every week and comparison is made difficult by the uniqueness of each film (Elliott & Simmons, 2008; Moon, Bergey & Iacobucci, 2010). On the other hand, the role of critics in influencing audiences is only as strong as the extent to which consumers and experts value or experience a film in a similar manner (Hennig-Thurau, Walsh, & Wruck, 2001). In that regard, Holbrook (1999) has shown that professional critics and the general public use different criteria in judging a film's worth.

Despite the fact that most studies have shown a significant impact of reviews on revenues (Elberse & Eliashberg, 2003; Eliashberg & Shugan, 1997; Prag & Casavant, 1994; Reinstein & Snyder, 2005; Sochay, 1994; West & Broniarczyk, 1998), findings on the specific nature of such effect have been conflicting. This reflects a complex relationship – the impact of reviews changes over the course of the theatrical run (Simonton, 2009) and it depends on whether such reviews are positive or negative (Basuroy et al., 2003) and on the degree of consensus versus disparity among critics (Basuroy, Desai, & Talukdar, 2006). While some authors have concluded that reviews significantly impact opening-week earnings (Moon et al., 2010), others have ascertained that film critics play more of a predictor versus an influencer role (Eliashberg & Shugan, 1997). Moreover, the impact of reviews has been shown to depend on other attributes such as stars and big budgets (Basuroy et al., 2003), genre (Desai & Basuroy, 2005) and

advertising spend (Basuroy et al., 2006; Elliott & Simmons, 2008; Moon et al., 2010). In sum, the nature of the effect of reviews on audience behaviour is unclear (Basuroy et al., 2003).

***Production budget.*** Extant research has consistently shown that production budget positively impacts box office revenues (Hennig-Thurau, Houston, & Walsh, 2007; Pangarker & Smit, 2013; Prag & Casavant, 1994; Ravid, 1999; Terry, Butler, & De'Armond, 2005). This is an intuitive result, as production budget, as Simonton (2009) put it, “represents the literal ‘bottom-line’ factor that imposes constraints on all other aspects of filmmaking that contribute to cinematic success” (p. 407). A film with a big budget affords amenities such as popular actors, special effects and impressive sets (Addis & Holbrook, 2010; Basuroy et al., 2003; Pangarker & Smit, 2013) and is typically accompanied by a larger advertising budget (Prag & Casavant, 1994). Thus, a higher budget can leverage a film both artistically and technologically and signal superior quality to audiences as well as producers and external funders, as it indicates that earnings are expected to be large enough to make up for the larger costs (Hennig-Thurau et al., 2001). A higher budget also helps distributors secure a greater number of screens (De Vany & Walls, 1999; Hennig-Thurau et al., 2007).

Be that as it may, production costs are negatively correlated with returns (Hennig-Thurau et al., 2007; Ravid, 1999; Wallace et al., 1993) and, even if they contribute positively to revenues on average, this relationship is quite noisy (Prag & Casavant, 1994) – many big-budget productions turn out to be massive flops at the box office while many low-budget films yield high return rates. Basuroy et al. (2003) contended that a big budget is used by film executives to hedge their investments against high uncertainty; as they argued, this may be unnecessary on average but serve to protect producers when the film is panned by critics, as in those cases the added-value features of big budgets might entice audiences enough to turn a profit.

***Industry awards.*** Film awards are the result of the comparison of films released every year by associations of practitioners and experts. Therefore, awards make up an important quality signal in a competitive setting (Hennig-Thurau et al., 2001). The awards given by the Academy of Motion Picture Arts and Sciences (the Oscars) are the most publicized, therefore yielding a higher impact on audiences (Hennig-Thurau et al., 2001). Previous research has consistently found a positive correlation between Oscar nominations and box office (Deuchert, Adjamah, & Pauly, 2005; Hennig-Thurau et al., 2007; Nelson et al., 2001; Pangarker & Smit, 2013; Prag & Casavant 1994; Sochay, 1994).

Importantly, existing studies have found mixed results regarding the value added by an award win over a nomination. While Nelson et al. (2001) concluded that wins generate returns several times higher than that of nominations, Deuchert et al. (2005) found that the main effect of awards on revenues is generated by nominations rather than wins; the authors contended that a possible explanation for this finding is that audiences go to the cinema often enough to watch other nominees beyond the winner.

**Genre.** Genre is one of the most salient attributes audiences can evaluate a film by. Different film genres are associated with different aesthetic patterns – identifying a film’s genre provides audiences with cues concerning storyline, content, structure and feelings associated with it prior to viewing (Hennig-Thurau et al., 2001).

On the other hand, there exist no strict definitions of genres that new films must conform to and many films are cross-genre in nature, which might explain the mixed evidence existing literature provides in regard to how different genres contribute to box office (Chang & Ki, 2005; Hennig-Thurau et al., 2001). While some authors find evidence that genre is a significant predictor of earnings (Wallace et al., 1993), others find only evidence of a statistically significant impact for one (Chang & Ki, 2005; Sochay, 1994) or two (Terry et al., 2005) specific genres, or for none at all (Pangarker & Smit, 2013). Drama, the most common genre (De Vany & Walls, 1999; Simonton, 2009; Suárez-Vázquez, 2011), has received most attention; dramas tend to get less screen allocations and advertising (Elliott & Simmons, 2008) and earn less in box office (Prag & Casavant, 1994) but receive more positive reviews from critics and are more often awarded in the most prestigious categories (Simonton, 2009; Suárez-Vázquez, 2011).

Overall, genre is one of the most accessible attributes of a film for audiences and is bound to influence their decision making; for that reason, filmmakers need to be on top of changing consumer preferences, which may also explain the conflicting results on the impact of genre on box office earnings (Pangarker & Smit, 2013; Sochay, 1994).

**Sequel.** A sequel (or a prequel or spin-off) provides an important quality signal (Basuroy et al., 2006), and is the equivalent of a brand extension in the market for motion pictures (Basuroy et al., 2006; Chang & Ki, 2005). This signal is particularly credible, as a studio would presumably be willing to incur in the typically higher costs of a sequel only if it believed that the equity borrowed from the original film would pay off; additionally, a poor-quality sequel can spoil revenues from licensing deals or further sequels (Basuroy et al., 2006; Pangarker & Smit, 2013).

However, sequels tend to be of lower quality relative to original films, as judged by critics and audiences (Elliott & Simmons, 2008; Prag & Casavant, 1994; Ravid, 1999; Simonton, 2009), which may stem from the difficulty in meeting the high expectations set for the sequel (Elliott & Simmons, 2008). Then again, sequels have consistently been shown to generate higher revenues and profits (Basuroy et al., 2006; Chang & Ki, 2005; Elliott & Simmons, 2008; Hennig-Thurau et al., 2007; Moon et al., 2010; Pangarker & Smit, 2013; Prag & Casavant, 1994; Terry et al., 2005).

### ***2.1.2. Individual-level film choice and evaluation***

As discussed above, the psychological approach in studying audience behaviour has been covered to a lesser extent. Still, the role of two quality signals –critics’ reviews and star power – has received some attention.

Professional reviews are expected to be an important driver of a viewer’s choice, as they provide information about the film’s quality which can hardly be assessed prior to viewing the film (Moon et al., 2010). D’Astous and Touil (1999) showed that the influence of a review is mediated by information concerning its author (their style and personal preferences), the film’s director and the degree of critical consensus. Additionally, Suárez-Vázquez (2011) has shown how negative criticism is capable of influencing pre-viewing expectations. Stars, on the other hand, represent a tangible attribute; in addition to their quality-signalling nature, stars are informational signals, as a cast of big names spurs conversation among consumers and reinforces the film’s ability to nurture social relations (Suárez-Vázquez, 2011).

Of particular interest to the present study, however, is Gazley et al.’s (2011) application of the conjoint analysis technique to filmgoing decision-making. The authors studied how film choice varied, namely, with price, genre, star power, friend’s judgments, promotional strategy and sequels, and found all of these but sequels to drive film choice. Importantly, the authors found individuals to be sensitive to price discounts.

These efforts to understand what drives consumers in their choices and evaluations of films are therefore not only scarce but also conflicting in their findings. Methodological issues aside, such scarcity and discrepancy is likely to be partly due to the complexity and hedonic nature of film consumption, which renders choice ever more subjective. Hedonic consumption relates to the multisensory, fantasy and emotive aspects of the consumption experience that create pleasure (Hirschman & Holbrook, 1982). Motion pictures are typical hedonic products, and the

film experience is particularly rich in all these three dimensions. Film choice is contingent on the viewer's emotional expectations rather than the cognitive evaluation of alternatives (Neelamegham & Jain, 1999) and film enjoyment is determined by the dynamic interaction of film and consumer attributes rather than by either in isolation (Eliashberg & Sawhney, 1994).

Other authors have studied the symbolic motivators driving film consumption such as relaxation, arousal, social activity and communication resources (Austin, 1986), self-enjoyment, relief of boredom and cultivating oneself (Cuadrado & Frascuet, 1999) and escapism (Addis & Holbrook, 2010).

It is also important to consider how film consumption at the cinema is typically a social activity, and that in such circumstances so should film choice be. Crucially, Delre, Broekhuizen and Bijmolt (2016) drew attention to the importance of shared film consumption and showed that social influence was mainly exerted through shared consumption rather than internal influence (i.e. word of mouth).

## **2.2. The Prevailing Practice of Uniform Pricing**

After discussing how aggregate and individual filmgoing behaviour may vary with film attributes and other elements of the film marketing mix, the pricing element, and in particular the prevalence of uniform pricing, is now reviewed in detail.

### ***2.2.1. The puzzle***

To the extent films are highly differentiated products – and hence lead to different price elasticities of demand – their prices should differ. On the grounds of economic theory, prices for differentiated products should vary in a free market. Still, pricing all films the same has been the prevailing practice in the motion picture industry – admission prices do not vary across films. Some forms of price variation are already in place, which typically include student, senior, children and bulk discounts, as well as seating options (Reynolds, 2013). Admission prices also vary across theatres and geographic locations. Additionally, many theatres have specific discount days (de Roos & McKenzie, 2014; Einav & Orbach, 2007) and premium pricing for larger formats, such as IMAX and 3D showings, which are typically reserved for high-grossing popular releases (Reynolds, 2013). Still, these price variations refer only to discrimination across audience members, theatres and service levels – they do not establish

variation across the differentiated products. That is to say, the existing price discrimination occurs at the service level and is independent of films themselves (Reynolds, 2013).

Under these circumstances, Orbach (2004) proposed that two forms of variable pricing could prove profitable to exhibitors, namely (1) varying prices across days of the week and time of year and (2) varying prices across films. As weekend demand is several times higher than on weekdays, higher admission prices on weekends could increase profits in spite of a loss of consumers. By the same token, film demand has been shown to be seasonal, with peak demand occurring around the summer and holiday periods (Einav, 2007), which provides a rationale for varying admission prices throughout the year. Additionally, de Roos and McKenzie (2014) suggested setting off-peak prices contingent on week of run (i.e. differentiating between new and old releases).

Uniform pricing is likely to entail missed profit opportunities, incurred by exhibitors rather than distributors. Even though exhibitors charge uniform prices, their costs vary on a film-by-film basis<sup>1</sup>. With uniform pricing, films do not exercise economic pressure on each other. Under this system, as Reynolds (2013) notes, “films are participating in a sort of collective or aggregated monopoly, with an averaged monopoly value” (p. 17). Hence, high-value films are likely underpriced and subsidizing overpriced films. Uniform pricing, to the extent it represents anti-competitive behaviour, hampers film quality, since the studios’ focus is on aggregate success; as films are all priced the same, the goal is to serve the widest audience possible (Reynolds, 2013).

### ***2.2.2. Proposed explanations***

***The Paramount decrees.*** At the heart of Orbach’s discussion is the role played by antitrust regulation enforced by the U.S. government. The Paramount decrees refer to a set of new legal rules imposed on the industry after the U.S. government filed a complaint against the major distributors, in 1938. At that time, these distributors enjoyed strong market power and had direct

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<sup>1</sup> Licensing agreements typically include four elements: a *house nut*, the *formula*, the *floor* and the *per capita requirement*. The *house nut* is an allowance covering the exhibitor’s rent and other overhead costs and provides the exhibitor with an additional cushion of profit; the *formula* refers to the sliding-scale rate for sharing revenue – the distributor gets a higher percentage (typically >70%) for the first couple of weeks and a gradually lower one later in the film’s run in favour of the exhibitor; the *floor* is the minimum share of revenues the distributor receives (before subtracting the *house nut*) and it decreases over time; finally, the *per capita requirement* is a fixed per-viewer payment accrued to the distributor (Vogel, 2014).

control over admission prices, which varied across theatres, show time and films. The Paramount decrees established three main rules: (1) licensing agreements are only possible on a film-by-film and theatre-by-theatre basis (no block-booking), allowing exhibitors to select the films they wish to show; (2) no producer and distributor intervention on prices is allowed, and thus prices are solely determined by exhibitors; (3) vertical integration between producers/distributors and exhibitors is not permitted. Even though these rulings changed the industry substantially, Orbach asserted their effectiveness has been limited, as major distributors are still believed to (illegally) influence prices, directly and indirectly.

The remainder of this section provides explanations for the prevalence of uniform pricing concerning film audience behaviour and the complex interests of exhibitors and distributors.

### ***Supply considerations***

*Arbitrage costs.* One argument for the practice of uniform pricing is that the implementation of variable pricing would likely lead to increased monitoring costs. With variable pricing, consumers would have an incentive to exploit arbitrage opportunities by purchasing a low-priced ticket and attending a premium-priced film instead. Arbitrage would likely worry distributors as well if it was exploited across films of different distributors, which is plausible since exhibitors typically deal with multiple distributors.

*Agency problem.* A very significant revenue stream for exhibitors is represented by concession sales, which account on average for around one third of total revenues (Vogel, 2014). Exhibitors directly control the sale of popcorn, snacks and beverages, which yield a higher margin on average (Vogel, 2014)<sup>2</sup>. On the other hand, ticket sales are the distributors' only source of revenue (that is, in the theatrical window). Hence, while exhibitors would likely benefit from lowering prices to increase the number of viewers and hence concession sales, it is in the distributors' interest to maintain firm pricing.

*Distributors' interests.* Orbach discussed three ways in which variable pricing acts against distributors' interests. First, changes to the long-held way of doing business could lead to a revision of the licensing agreements' structure and the revenue split that could potentially be unfavourable to distributors. Second, *ego-wars* could follow, as filmmakers pushed to have

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<sup>2</sup> The predominance of concession sales on exhibitors' profits can be strong enough so as to make uniform pricing the profit-maximizing solution for exhibitors (Chen, 2009).

their films priced at a premium. Finally, variable pricing would make it more difficult for distributors to compare different exhibitors in making their allocation decisions.

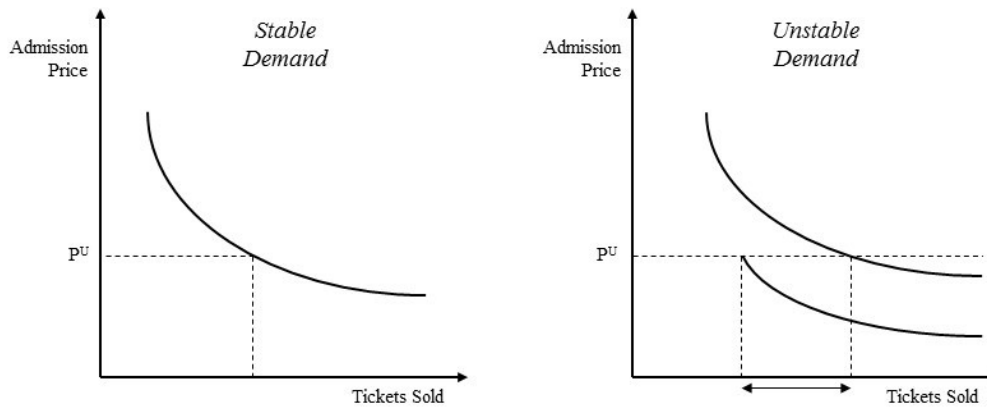
*Exhibitor's fear of retaliation.* At this point, the key question is what exactly prevents exhibitors from establishing variable prices. The reason is most likely a fear of retaliation from exhibitors in the form of unfavourable licensing agreements. The major distributors (who are vertically integrated conglomerates and also produce films) enjoy the exclusive right to market their films, which confers substantial market power on them. In this case, an exhibitor acting alone might perceive the change as financially detrimental.

### ***Demand considerations***

*Demand uncertainty.* The ultimate goal of variable pricing is to imbue prices with demand information and allow exhibitors to exploit audiences' willingness to pay. However, demand for new films is highly uncertain. What criteria could exhibitors employ to support differentiated pricing? Findings on the contribution to box office of the majority of film attributes discussed in the previous section are conflicting. Nevertheless, Orbach argued that "producers may be unable to predict box office revenues of most movies, but identifiable event movies are likely to perform better at the box office" (p. 356). When defining an event film broadly, Orbach's observation is consistent with the argument discussed above, whereby budget decisions, for instance, signal the studios' early expectation of box office success. Reynolds (2013), on the other hand, proposed cost-based pricing as being both fairer and more efficient; this might indeed be an effective solution, as production costs correlate highly with box office revenues (Einav & Orbach, 2007).

*Demand instability.* Another explanation for uniform prices is that, under a variable pricing scheme, lower-priced films could be perceived as being of lower quality. In that case, lower prices would decrease demand rather than increase it. Figure 1 illustrates. Nevertheless, price variation would still likely increase overall profit. For one thing, audiences can be expected to distinguish an event film from a regular one. Second, not everyone is targeted by every film; for that reason, demand for lower-priced films need not decrease – a lower price for documentaries, Orbach suggested, would likely increase demand. Consequently, as Orbach concluded, "the unstable-demand argument applies only to price differentiation across movies with a similar profile" (p. 360). What is more, price is less likely to affect quality perceptions in the presence of other product attributes (Grewal, Monroe, & Krishnan, 1998) and films are the joint result of many different contributions and attributes (Holbrook, 1999).

**Figure 1**  
Unstable Demand



Adapted from Orbach (2004)

*Fairness perceptions.* A key constraint in implementing variable pricing is that price increases are generally perceived as unfair. However, such a change is argued to be perceived as unfair only because audiences have become acclimated to uniform prices, according to Orbach. On the other hand, exhibitors' costs vary substantially and price increases as a result of cost increases are perceived as fair (Bolton, Warlop, & Alba, 2003; Kahneman, Knetsch, & Thaler, 1986). Additionally, consumers often make attributions as to who caused the cost increase (Vaidyanathan & Aggarwal, 2003); in the present case, as different films noticeably have different production costs which translate into higher costs to the exhibitor, audiences should expect cost-based price variation as an external event to exhibitors. On the other hand, varying prices according to the day of the week or day of the year does not benefit from this unfairness argument, and consumers are used to this kind of periodic price changes (Haws & Bearden, 2006). Still, Choi, Jeong and Mattila (2015) found that, while price discrimination based on time of day, day of week and booking time is perceived as fair, discrimination based on film popularity is perceived as unfair. Most important, audiences are expected to realize the varying quality of films, which mitigates perceptions of price unfairness (Bolton et al., 2003; Xia, Monroe, & Cox, 2004). In any case, applying simple framing strategies (by presenting price changes as discounts rather than surcharges) could effectively change audiences' reference prices (Choi et al., 2015) and eliminate uniformity between films. This could then open the door to subsequently introduce further price differentiation. Overall, as some forms of price differentiation are already in place, variable pricing is likely not a foreign notion to consumers (Reynolds, 2013).

## Research Questions

Informed by the review of literature on audience behaviour and uniform pricing, we formulated the following research questions. First, we were interested in assessing how heavily price would weigh on consumers' choices. We hypothesized price could become a significant decision-making variable, not only because of consumers' price sensitivity but also because of the growing availability of alternatives. On the other hand, we expected price not to outweigh the importance of other attributes significantly, as film choice is determined by a variety of factors, including film attributes (Addis & Holbrook, 2010) and viewers' emotional state (Eliashberg & Sawhney, 1994) and motivations (Austin, 1986).

**RQ1:** In introducing price differentiation across films, how heavily does admission price weigh on consumers' choice of film?

Second, we sought to understand (1) whether introducing variable prices would impact consumers' preference structure, (2) how the frequency of cinema attendance would change, and (3) how consumers themselves believe the number and type of films they watch and their consumption of popcorn and beverages would be affected.

**RQ2:** How does introducing price differentiation across films affect consumers' preferences and filmgoing habits and behaviours?

Moreover, we wanted to understand whether lower-priced films would be perceived as having lower quality. Because price is less likely to effect quality perceptions when there are other attributes to judge a quality of a product by (Grewal et al., 1998), we hypothesized consumers' association of low prices with lower quality would not be significant.

**RQ3:** In introducing price differentiation across films, are lower-priced films perceived as lower-quality?

Our fourth question addressed fairness perceptions. We sought to understand whether differentiated pricing across films is perceived as unfair. We expected fairness perceptions toward variable pricing to be positive. Furthermore, because price increases as a result of cost increases are perceived as fair (Bolton et al., 2003; Kahneman et al., 1986), we hypothesized that signalling cost differentials between films would improve fairness perceptions.

**RQ4:** To what extent is price differentiation across films perceived as unfair by audiences and can signalling cost differentials improve perceptions of fairness?

## **Methodology**

### **4.1. Qualitative Research Procedures**

#### ***4.1.1. Purpose***

In quantitative data collection procedures, a discretionary choice needed to be made regarding how films were to be presented, while making the experiment realistic yet manageable. Qualitative research was crucial to inform the selection of film attributes to employ in the conjoint experiment (Louviere, Flynn, & Carson, 2010). The purpose of qualitative research was twofold: (1) to understand what film attributes are most relevant to film selection, and (2) to assess how audiences might respond to variable pricing.

#### ***4.1.2. Procedure***

Individual in-depth interviews were conducted with a convenience sample. As this research also sought to tie preferences, behaviours and perceptions to individual characteristics, concentrating on the individual was important. This also allowed more time to probe participants further and uncover greater insight.

The interviews were semi-structured (refer to Appendix 1 for interview guidelines). The first section concerned respondents' involvement with film and their habits and preferences. Next, respondents' typical film choice process was discussed, with the aim of uncovering the attributes and informational cues they use in their decision-making. Then, judgments of film pricing were assessed by asking respondents to comment on current prices and by conducting an experiment. In this experiment, respondents were presented with two sets of four upcoming films, all with different prices. For half the interviewees, the only information provided included the films' posters, titles and prices; for the other half, additional information on director(s), cast and production budget was provided. Respondents were asked to select a film (if any), to comment on prices and to elaborate on how good they thought each film was. The purpose of the study was then disclosed and the rationale for variable pricing explained. Respondents were asked how fair they perceived variable pricing to be, whether they would associate cheaper films with lower quality and how they would adjust their habits to variable pricing. Lastly, respondents provided personal details and were thanked for their participation.

### 4.1.3. Results

A total of ten respondents were interviewed. The sample was composed of eight participants aged 18-24 and two aged 45-54. The sample was gender-balanced. Interviews took on average 50 minutes to complete (see Appendix 2 for detailed results).

**Film attributes.** Genre emerged as the most salient attribute for the majority of respondents, followed by screenplay or story. Feedback from friends and family or buzz was mentioned by six respondents. Actors, on the other hand, were mentioned initially by only three interviewees, and by five others when answering follow-up questions. A popular director (or a film's direction quality) was also mentioned by four interviewees, as was award buzz. To a lesser extent, production value, specific themes, true stories, critics' reviews, costume design and visual effects were also mentioned. Overall, the combination of attributes respondents used to describe the kind of films they enjoy was quite heterogeneous, and this disparity could not be tied to individual characteristics or their general interest in films. This reflects how subjective film preferences are.

**Judgments on pricing.** Most respondents enjoyed discounts in ticket prices. Yet, only half of the interviewees were satisfied with current prices. Interviewees were then asked why they believed prices were the same across films. Three respondents argued that the service provided by cinemas and the associated cost are the same across films, effectively referring to the cost of showing those films (and ignoring licensing costs). Two interviewees speculated that exhibitors could fear cheaper films would be perceived as lower-quality films. Another interviewee focused on the difficulty of differentiating prices given that film preferences are very subjective and that variable pricing could be perceived as unfair:

*What differentiates films is personal, it has nothing to do with the service provided, so I don't know if it makes sense to differentiate prices in that case.*

The experiment was then run. As expected, choices were very heterogeneous. However, most interviewees relied on their perception of genre to make their choice. Price was a decision variable for half the respondents. Moreover, five respondents were provided with production budget information. Two interviewees relied on this information to make (positive) judgements of the most expensive films, two stated that this information was irrelevant to them, and another interviewee disregarded this information entirely. Reactions to prices were mixed as well – most respondents stated they would not find differentiated prices surprising, as they are willing to pay more for some films than others; some accepted that prices were different but found the

average price to be too high, and the upper price to be prohibitive; one respondent stated she would need to know what was driving price differentiation and another one was completely dismissive of variable pricing. When further asked to infer how good they believed each film was, price was not a relevant factor for most.

The fact that licensing costs incurred by exhibitors differ largely across films was then disclosed and interviewees were again asked about the fairness of variable pricing. The majority believed variable pricing was fair given that information.

*Behavioural adjustments.* Interviewees were finally asked about whether they believed they would attend the cinema less often, change the type of films they watch or adjust their consumption of popcorn, snacks and beverages, if variable pricing was introduced. The majority stated they would probably go to the cinema less often and would not change the type of films they watch; answers were split in regards to food consumption.

#### **4.1.4. Conclusions**

Results from our interviews were informative in several ways. First, genre and screenplay emerged as the most important attributes across interviewees, followed by feedback from friends and family and popular star and director participation. This was important feedback to select film attributes for the conjoint experiment.

Second, the comments provided by the interviewees were helpful in uncovering views on the issue of price uniformity. Several respondents effectively resorted to information on costs to comment on prices, but failed to identify the relevant costs to exhibitors (i.e. licensing costs). Additionally, only a minority associated lower prices with lower film quality. Most important, the notion of price discrimination was not a surprise to most interviewees, who easily recognized they value films differently. Nonetheless, if they faced variable pricing, they would reportedly attend the cinema less often. This confirmed the importance of taking film demand as endogenous in our model, an issue discussed below.

Thirdly, cueing production costs to attenuate fairness perceptions generated mixed results; while some interviewees responded to such information, others ignored it or dismissed it altogether. This led us to think of bases for price differentiation more broadly and to cover other explanations in the subsequent quantitative study.

## 4.2. Quantitative Research Procedures

### 4.2.1. Purpose

In line with our research questions, the objectives of quantitative research procedures were to estimate (1) the relative importance of film attributes and informational sources on consumers' film choice, (2) how variable pricing would impact consumers' preferences and behaviour, (3) whether cheaper films would be perceived as lower-quality films, and (4) how fairly differentiated pricing would be perceived (and potential moderators of those judgments).

### 4.2.2. Method

**Conjoint Analysis.** This study employed a choice-based conjoint technique. When facing cognitively demanding decision tasks, consumers are led to decompose products into a bundle of attributes and choose based on their value system (Dolan, 2001). The choice of which film to watch at the cinema is often challenging, not least because of the volume of options available. A preference elicitation procedure (Louviere et al., 2010), conjoint analysis forces respondents to trade off competing needs and thus uncovers their implicit preference structure, which they may be unwilling or unable to accurately self-report (McCullough, 2002). As the core issue of this study is one of pricing, imposing such trade-offs was crucial.

One of the most widely applied methodologies in analysing consumer preferences (Carroll & Green, 1995), conjoint is a decompositional method whereby respondents are asked to rate, rank or choose among a set of products, which differ in regard to a predefined set of levels of the attributes they are decomposed into (Green & Srinivasan, 1978). This allows the researcher to estimate the part worths associated with each attribute level, and compute the utility associated with any concept. Price is usually included as an attribute (Green & Srinivasan, 1990; Mahajan, Green, & Goldberg, 1982).

**Attribute and attribute level selection.** Findings from the literature review and our in-depth interviews substantiated the choice of film attributes and levels. Existing literature shows some variables have a significant impact on aggregate earnings, such as production budget, awards, genre and sequels. These would be good candidates for attributes. However, drivers of theatrical earnings are not necessarily the drivers of film attendance (e.g. production budgets). Awards, on the other hand, hamper the generalizability of results, as they are only relevant during the awards season. Other variables are purely qualitative and can hardly be decomposed into a concise set of levels (e.g. screenplay). Genre, on the other hand, has been shown to significantly

impact box-office and it emerged as the most accessible attribute among our interviewees. Feedback from others was also highlighted in our interviews and shown to drive film choice (Gazley et al., 2011). Cast was also included as an attribute; despite the conflicting evidence of actors' impact on earnings, they also emerged as an important variable in our interviews. Reviews was also selected as an attribute, as most studies have shown critical acclaim to have a significant impact on revenues. Table 1 illustrates the list of attributes and levels under study.

**Table 1**  
Attributes and Attribute Levels

Attribute	Levels
Genre	Animation, drama, comedy, adventure/action
Popular actor/actress	Popular actor/actress starring, no popular actor/actress starring
Friends' and relatives' opinions	Positive, mixed, negative
Reviews from professional critics	Positive, mixed, negative
Price	13€, 9€, 6€, 3€

**Preference model and data collection method.** This study employed a part-worth function model and a full-profile approach. Under this approach, respondents are shown products as a bundle of all attributes, which allows for a more realistic choice simulation (Green & Srinivasan, 1978).

**Stimulus set construction.** The full factorial design consisted of 288 concepts. This study employed a fractional factorial design by using a subset of 64 films, split into 8 sets. Respondents were randomly presented one set. Each set was specified as containing 8 films to make the experiment realistic yet manageable.

**Stimulus presentation.** The concepts were presented through verbal descriptions. The order of the attributes was the same across cards, but it was not random. In a pre-test to the experiment, respondents displayed a tendency to overfocus on genre and simplify their selection by ignoring other attributes. This led to inconsistent results. Hence, we intentionally placed genre in a middle position.

**Measurement scale for the dependent variable.** This study employed two conjoint methods: choice and ranking. In the choice task, respondents indicated those films they would watch at the cinema within a month. Choice-based conjoint was essential to this study – since demand needed to be taken endogenously, a no-choice option needed to be included, and a rating method (or a ranking method alone) cannot easily accommodate no-choice options (McCullough,

2002). Furthermore, choice-based conjoint is more realistic and simpler a task, thus increasing its external validity (DeSarbo, Ramaswamy, & Cohen, 1995; Louviere & Woodworth, 1983). A choice task alone, however, would have provided very limited data. A ranking task was used in conjunction with the choice task to provide more data on respondents' preference structure (Hanley, Mourato, & Wright, 2001).

#### 4.2.3. Estimation model

The theoretical foundation of our analysis is the random utility model. Consider a product category where the consumer can choose among a set of  $M$  product profiles. For each individual or segment, the utility of product profile  $m$  can be given by Equation 1.

$$U_m = \sum_{i=1}^I \sum_{j=1}^{J_i} \alpha_{ij} X_{ijm} + \alpha_p P_m + \varepsilon_m \quad (m = 1 \dots M) \quad (1)$$

Where:

$I$  is the number of non-price attributes

$J_i$  is the number of levels of the  $i$ th attribute

$\alpha_{ij}$  is the utility (part worth) associated with the  $j$ th level of the  $i$ th attribute

$X_{ijm}$  is a binary variable that takes the value of 1 if the  $j$ th level of the  $i$ th attribute is present in alternative  $m$  and 0 otherwise

$\alpha_p$  is the (negative) marginal utility of price

$P_m$  is the price of product profile  $m$

$\varepsilon_m$  is a stochastic utility term

Under the assumption that the error terms  $\varepsilon_m$  are independent and identically distributed with a Weibull distribution, the above equation leads to the conditional logit model (McFadden, 1973) whose parameters can be estimated by maximum likelihood. Those estimates allow us to predict what product profile is the most preferred among a set of alternatives. Consequently, if we assume that each consumer purchases one unit of the product in question (which implies a fixed overall market size), the model can be used to predict the outcomes of any given market scenario.

However, in general, the size of the market will not be fixed, as some consumers may choose not to purchase any unit at all. This happens when, for all available product profiles, the consumer's reservation price (absolute willingness to pay) is lower than the product's market price. Some papers have proposed methods for estimating reservation prices and accounting for the market expansion or contraction effect of price variations (Jedidi & Zhang, 2002; Louviere & Woodworth, 1983). A second issue is that in a market such as the film market the assumption that only one unit is consumed per period of time may be unrealistic.

In this study, these two limitations of the simple conditional logit model were solved by using a method proposed by Machado (2017). In addition to accounting for the most preferred film in each choice set, this method uses information on which films within the choice set the respondent would and would not watch. Accordingly, a constant term is added to Equation 1 and the model parameters are estimated under the assumption that the selected films are all those that have a positive (net) utility. For any given respondent, the likelihood function for this model is given by Equation 2.

$$LF = \frac{\sum_m^M y_m e^{\gamma + \sum_i^I \sum_j^J \alpha_{ij} x_{ijm} + \alpha_p P_m}}{\sum_m^M e^{\gamma + \sum_i^I \sum_j^J \alpha_{ij} x_{ijm} + \alpha_p P_m}} \times \sum_m^M W_m \left[ 1 - e^{\left( -e^{\gamma + \sum_i^I \sum_j^J \alpha_{ij} x_{ijm} + \alpha_p P_m} \right)} \right] \quad (2)$$

$$\times \sum_m^M Z_m \left[ e^{\left( -e^{\gamma + \sum_i^I \sum_j^J \alpha_{ij} x_{ijm} + \alpha_p P_m} \right)} \right]$$

Where:

$Y_m = 1$  if film  $m$  is the most preferred of the choice set and 0 otherwise

$W_m = 1$  if film  $m$  is the least preferred film watched and 0 otherwise

$Z_m = 1$  if film  $m$  is the most preferred film not watched and 0 otherwise

#### 4.2.4. Procedure

A consumer online survey was developed as it is the most time- and cost-efficient technique to generate a large volume of responses. The target population was defined broadly. The only constraint imposed was nationality, as the study focused on the Portuguese market. Given that the core issue at hand is one of pricing, reference prices, which vary across countries, needed to be controlled for.

The questionnaire began with a qualifying question on respondents' country of residence (see Appendix 3). The first section pertained to respondents' involvement with film, filmgoing habits and preferences, and opinion on current prices. The product- and purchase-decision involvement scales were based on Mittal's (1995) adaptation of Zaichkowsky's (1985) Personal Involvement Inventory (PII) scale and Ratchford's FCB purchase-decision involvement scale, respectively.

In the second section, participants faced a dichotomous-choice task. They were presented with information about a film and asked whether they would watch it. Information included the film's poster, title, director, main cast and ticket price (varying across five levels). Two films

were used and participants were randomly presented with one. *Dunkirk* and *Tulip Fever* were selected as the event and the non-event film, respectively. The purpose of this question was to (1) get an understanding of consumers' price sensitivity and (2) check whether their willingness to pay differed between the event and non-event film. As only two films were used, the generalization of results was not intended.

In the third section, participants went through the conjoint experiment. They were assigned to one of 12 conditions, corresponding to 12 choice sets (of which eight included price as an attribute – the experimental group – and four did not – the control group). Participants were presented with a set of 8 films and asked to allocate them between two boxes: (1) “I would watch at the cinema in a period of one month” and (2) “I would NOT watch at the cinema in a period of one month”. They were also asked to rank films within each box.

Then, respondents in the experimental group answered a question on why they believed some of the films shown before were priced lower and a set of items on behavioural adjustments.

In the fifth section, respondents were assigned to one of four conditions. In the control condition, participants were not provided with any stimulus and simply rated their agreement with the statement “differentiating ticket prices across films would be fair”. In the other three conditions, they were provided with a stimulus and then asked to rate their agreement with this same statement. In the “cost” condition, they were provided with the stimulus “it is known that films are different from each other. For example, films have very different production, marketing and distribution costs”; for the “quality” condition the stimulus was instead “it is known that films are different from each other. For example, films have very different quality levels”; and for the “popularity” condition it read “it is known that films are different from each other. For example, films have a very different expected demand/popularity”. The goal was to check whether priming respondents on different stimuli (particularly on cost differences) mediated their fairness perceptions. In a follow-up question, participants who did not perceive variable pricing as fair rated different reasons that could justify why variable pricing was not fair.

Finally, the sixth section asked for socio-demographic information. The questionnaire was written in Portuguese and pre-tested.

## Results

The online survey was open for 17 days and recorded 275 responses. 31 participants were eliminated for residing abroad, another 34 for completing only the first section and a further 8 for failing an attention check. The final sample was left at 202 valid responses (females = 69.9%, age 18-24 = 43.6%). Of these, 187 participants completed the survey.

### 5.1. Cluster Analysis

Using data from the conjoint experiment, we estimated film preferences along the four attributes and price through the maximum likelihood function specified above. The analyses were run for the full sample as well as for segments within the sample. Segmentation was essential in our study. High heterogeneity in responses was expected – different people prefer different genres, care differently for actors, others' feedback or critics' reviews, and have different price sensitivities. After several attempts, the sample was clustered based on respondents' ranking of the four genres included in the experiment (genre preferences) and their implicit ranking of the film attributes included in the study (preference structure). These segmentation bases yielded four segments and the best results in the estimation model. The K-Means clustering method was used to segment the sample.

The four segments are drama lovers, adventure enthusiasts, *connoisseurs* and comedy aficionados. Drama lovers have a strong preference for the drama genre and care mostly for genre and screenplay in choosing a film. Adventure enthusiasts and comedy aficionados also consider genre and screenplay the most in making their choices, but their preferred genre is instead adventure/action and comedy, respectively. *Connoisseurs*, on the other hand, prefer drama as genre but they look mostly at screenplay and reviews when selecting a film; they stand out from the other segments for the importance they assign to expert judgements (refer to Appendix 5 for profiling data).

### 5.2. The Weight of Price on Film Choice

The model was run for the full sample and each segment, across both the experimental ( $N = 127$ ) and the control ( $N = 64$ ) groups. Table 2 displays the estimated coefficients and standard errors for the experimental group (see Appendix 6 for data on the control group).

**Table 2**  
Estimation Model Coefficients and Standard Errors

Independent Variables	Full Sample <i>N</i> = 127	Segments			
		Drama Lovers <i>N</i> = 46	Adventure Enthusiasts <i>N</i> = 60	<i>Connoisseurs</i> <i>N</i> = 36	Comedy Aficionados <i>N</i> = 45
Popular actor/actress starring	.54*** (.15)	.53* (.31)	.47* (.27)	.80** (.38)	.40 (.30)
Animated	-.50** (.19)	-.36 (.37)	-.77** (.33)	-.59 (.56)	.17 (.45)
Drama	-.21 (.18)	.51 (.36)	-1.20*** (.34)	-.01 (.44)	.25 (.41)
Comedy	.00 (.20)	.22 (.39)	-.55 (.36)	.12 (.52)	1.12** (.48)
Others' Opinions: Positive	.81*** (.17)	1.00*** (.36)	.53* (.30)	.80* (.43)	1.59*** (.42)
Others' Opinions: Mixed	.33* (.18)	.39 (.35)	.02 (.32)	-.02 (.50)	1.13*** (.42)
Reviews: Positive	.50*** (.18)	.47 (.38)	-.06 (.31)	1.19** (.48)	.68* (.40)
Reviews: Mixed	.23 (.17)	.38 (.33)	-.36 (.32)	.44 (.42)	.76** (.36)
Price	-.09*** (.02)	-.06* (.04)	-.07** (.03)	-.09* (.05)	-.19*** (.04)
Constant	-.46* (.24)	-.94* (.51)	.52 (.47)	-.88 (.60)	-.95* (.50)
Log Likelihood	-404.58	-104.29	-126.56	-67.41	-88.86

Note: Standard errors are between parentheses; coefficients with an asterisk are statistically significant with  $p < .1$  (\*),  $p < .05$  (\*\*) or  $p < .01$  (\*\*\*)

From these coefficients, which represent part-worth utilities, the relative importance of each attribute was computed (refer to Appendix 7 for details). Table 3 summarizes these results.

**Table 3**  
Attribute Relative Importance

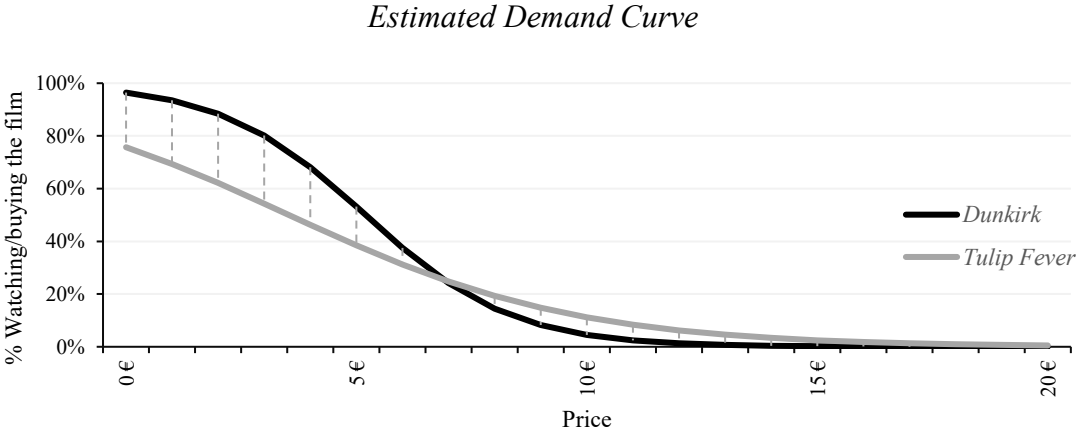
Condition <i>Experimental Group</i>	Full Sample	Segments			
		Drama Lovers	Adventure Enthusiasts	<i>Connoisseurs</i>	Comedy Aficionados
Popular actor/actress starring	17%	15%	14%	18%	7%
Genre	16%	25%	37%	16%	19%
Friends' and relatives' opinions	25%	29%	16%	19%	27%
Reviews from professional critics	15%	13%	11%	27%	13%
Price	27%	18%	22%	20%	33%

We observed that, for the full sample, price was the most important attribute (27%). Still, it was almost as important as the next attribute (friends' and relatives' opinions, 25%). Moreover, when segmenting the sample, price was only the second or third most important attribute for three of the four segments. These results suggest consumers are price sensitive on average, regardless

of their genre preferences or preference structure (i.e. across segments), as price weighs heavily on their choices. When asked their opinion on current prices, the majority ( $N = 157, 77.4\%$ ) believed tickets are currently expensive or very expensive. This was also confirmed in the dichotomous choice task where participants reported whether they would watch *Dunkirk* or *Tulip Fever* at the given price (which was randomized across five levels – 3€, 5€, 7€, 10€ and 14€). Figure 2 depicts both films’ demand curves, which were estimated through the dichotomous choice contingent valuation method (see Appendix 8 for details).

As Figure 2 illustrates, participants were highly sensitive to price, with demand growing exponentially for prices below 7€. Most important, despite this price sensitivity, conjoint results show that, albeit important, price does not become a dominant factor, which is evidenced by how important other attributes are in comparison.

**Figure 2**  
Estimated Demand Curves for *Dunkirk* and *Tulip Fever*



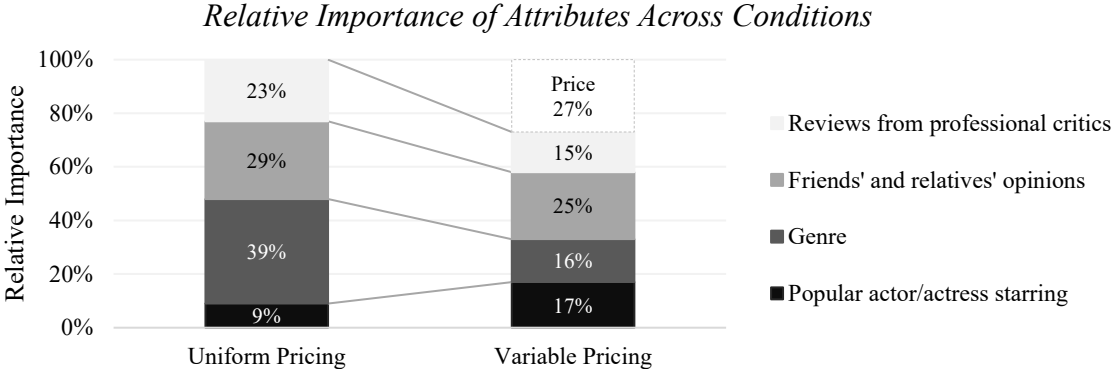
**5.3. The Impact of Variable Pricing on Preferences and Behaviour**

**5.3.1. Preferences**

We wanted to check whether introducing price as a decision variable affected respondents’ preference structure. We observed that the relative importance of attributes and their order changed significantly with variable pricing (Table 3). For the full sample, the most significant change occurred for genre, and the same applied to all segments but drama lovers. Figure 3 illustrates this change. This in turn reflected on the signs of the genre coefficients, which differed between conditions. This implies that the preference order of genres changes when price is introduced as a decision variable. These results suggest that, in general, consumers are more willing to trade-off their preferred genres for lower prices versus other criteria. However,

these results are not particularly informative as the estimated model for the control group displays low explanatory power due to a small number of observations. In fact, when later asked directly whether they believed they would change the type of films they watch at the cinema if the prices shown in the conjoint experiment were introduced, the majority ( $N = 79, 63.2\%$ ) reported they would not.

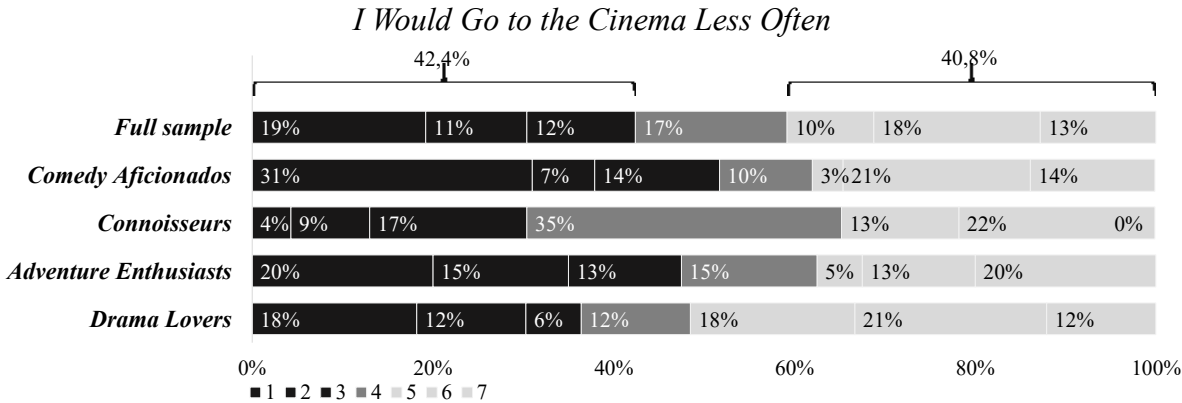
**Figure 3**  
Change in Attributes' Relative Importance



**5.3.2. Behavioural adjustments**

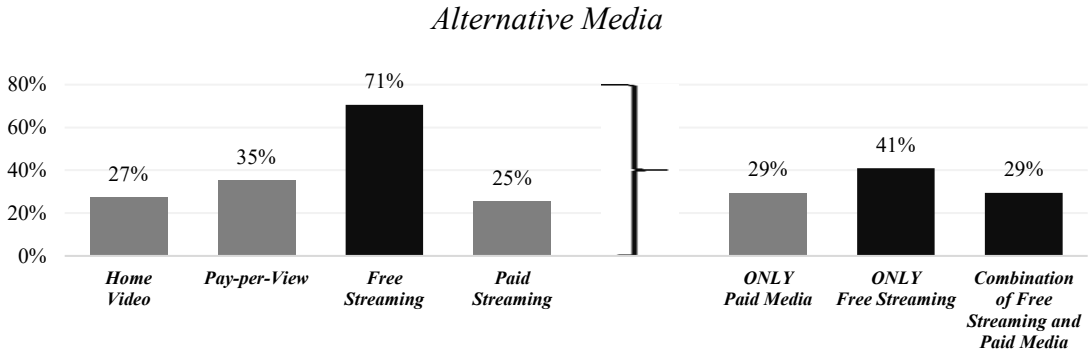
An independent samples t-test using the number of films watched as the test variable and the conjoint condition as the grouping factor showed that, when faced with variable prices ( $M = 3, SD = 1.45$ ) consumers watch less films than under current prices ( $M = 3.59, SD = 1.37; t(189) = -2.72, p < .01, CI(95\%) = [-1.02, -.16]$ ). Accordingly, when asked directly whether they would attend the cinema less often, 51 out of 125 (40.8%) participants believed they would go to the cinema less often. Yet, answers were heterogenous and evenly distributed across levels, as depicted in Figure 4.

**Figure 4**  
Behavioural Adjustments – Frequency of Cinema Attendance



A significant number of respondents believed they would go to the cinema less often if variable prices were introduced, in the full sample and the four segments. Additionally, female participants reported a higher rating on the likelihood of going less often to the cinema ( $M = 4.27$ ,  $SD = 2.06$ ) than male viewers ( $M = 3.08$ ,  $SD = 1.87$ ;  $F(1, 122) = 9.31$ ,  $p < .01$ ). Overall, a significant proportion of consumers might churn as a result of variable pricing, independently of their genre preferences or preference structure. This implies a revenue loss to exhibitors, but does it imply a loss to the industry as a whole? The majority of respondents ( $N = 36$ , 70.6%) selected free streaming as the viewing alternative and a significant number ( $N = 15$ , 29.4%) selected a combination of paid media and free streaming. Figure 5 illustrates these results.

**Figure 5**  
Behavioural Adjustments – Alternative Media



The fact that the majority of respondents reported they would turn to free streaming as an alternative is relevant to film suppliers to the extent it represents lost sales. All other options – home video, pay-per-view services and paid streaming – yield ancillary revenues to distributors. Of course, none of these are shared with exhibitors. According to these results, estimating the revenue loss from a decrease in audience size is essential to studios/distributors and (especially) exhibitors.

Finally, the majority of participants ( $N = 75$ , 60%) believed they would not change their consumption of popcorn or beverages if the experiment’s prices were introduced.

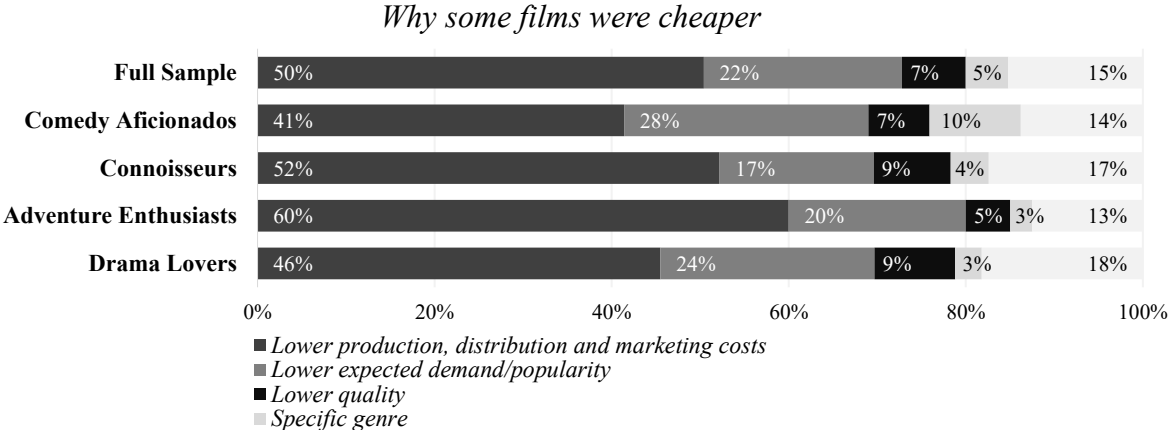
**5.4. Perceptions Towards Lower-Priced Films**

Participants were asked what main reason they believed justified that some films in the experiment were cheaper than others. The majority ( $N = 63$ , 50.4%) reported costs to be the underlying reason. The second most chosen reason was a lower expected demand/popularity

( $N = 28, 22.4\%$ ). Quality was selected by only a minority. Figure 6 illustrates the distribution of responses.

The majority of respondents believed cost differences and expected demand justified lower prices, which indicates they did not assume a positive relationship between price and film quality. Most important, a significant proportion of respondents attributed lower prices to market response (lower demand), which is extrinsic to films themselves.

**Figure 6**  
Price-Quality Schema



**5.5. Fairness Perceptions Towards Variable Pricing**

On average, respondents considered variable pricing as moderately unfair, and even more so when a reason for why prices might differ was provided. Responses were very heterogeneous. Those in the control condition ( $N = 49$ ) found variable pricing to be neither fair nor unfair ( $M = 4.08$ ). However, these ratings were distributed across all levels and concentrated around the scale’s midpoint (see Appendix 9). This noise in ratings and their distribution suggest that there is no consensus regarding how fair variable pricing is, and that most respondents are neutral.

Moreover, those in the control condition found variable pricing to be fairer than those in the “cost” ( $N = 45, M = 4.04$ ), “quality” ( $N = 49, M = 3.59$ ) or “popularity” ( $N = 46, M = 3.39$ ) conditions. However, an ANOVA with the fairness rating as the dependent variable and the condition as factor showed no statistically significant difference between conditions [ $F(3, 185) = 1.34, p = .263$ ]. Telling consumers that different films have different costs improved fairness perceptions versus telling them that films differ in quality or popularity, but there is insufficient evidence that signalling cost differentials leads to improved perceptions. Not only do these results fail to support the claim that cueing cost differentials improves fairness perceptions vis-

à-vis other factors (quality, popularity), but they also fail to support the claim that cueing cost differentials improves fairness perceptions compared to when no justification at all is provided (control).

Lastly, participants who did not think variable pricing was fair considered (1) their belief that current prices are already high ( $M = 5.49$ ,  $SD = 1.60$ ), (2) the fact that prices have always been uniform ( $M = 5.54$ ,  $SD = 1.88$ ), and (3) their belief that suppliers are already earning a reasonable profit ( $M = 4.24$ ,  $SD = 1.81$ ) to be the main justifications underlying their fairness rating. Importantly, the belief that costs do not vary significantly between films was rated the lowest ( $M = 2.83$ ,  $SD = 1.73$ ).

## 5.6. Market Simulation

We have observed how variable pricing can lead to a decrease in the number of films watched. However, we argue this need not be the case and consumers can be better off with variable pricing. That is because, with variable pricing, prices adjust to audience's willingness to pay, which implies that some films whose ticket price is currently above that level would likely be watched by more viewers. Depending on a viewer's personal preferences, this positive effect could be strong enough so as to outweigh the reverse negative effect on films that are currently underpriced.

To illustrate, we built a simplified market simulation wherein we took a list of real films released around the time of writing, computed consumers' utility and willingness to pay for each film and maximized the exhibitor's revenue by varying prices. Table 4 illustrates these results (see Appendix 10 for details).

Maximizing expected revenue results in very different price levels, ranging from 1.61€ to 8.26€. In this example, the average price decreases from 7€ to 4.90€ (30%). The average consumer expense per film also decreases from 7€ to 5.10€ (27%). Simultaneously, the average number of films watched more than triples – from approximately one per consumer per month to three – and the exhibitor's ticket revenue jumps by 139%. The average consumer watches more films at a lower average price and is overall better-off, with a 28% increase in surplus.

As this example illustrates, consumer surplus can actually increase with variable pricing, as some films that are currently overpriced become accessible. An increase in exhibitors' revenue is therefore not incompatible with an increase in consumer surplus. These results ultimately

depend on audiences' tastes, the price differentiation bases, and the specific films competing against each other.

**Table 4**  
Market Simulation

<i>Film</i>	Willingness to Pay (per segment)				Uniform Pricing		Variable Pricing	
	DL	AE	C	CA	Prices	# Films Watched	Prices	# Films Watched
<i>Life</i>	5.64 €	9.09 €	3.77 €	6.94 €	7 €	32	5.64 €	81
<i>The Circle</i>	1.61 €	- €	- €	- €	7 €	0	1.61 €	25
<i>The Zookeeper's Wife</i>	13.62 €	- €	3.71 €	8.26 €	7 €	49	8.26 €	49
<i>Demain Tout Commence</i>	- €	- €	- €	6.73 €	7 €	0	6.73 €	24
<i>Going in Style</i>	3.11 €	6.40 €	.22 €	8.82 €	7 €	24	6.40 €	56
<i>The Shack</i>	- €	- €	- €	2.24 €	7 €	0	2.24 €	24
<i>Ballerina</i>	- €	- €	- €	5.75 €	7 €	0	5.75 €	24
<i>The Fate of the Furious</i>	- €	2.54 €	- €	4.85 €	7 €	0	2.54 €	56
<i>Average Price / Total # Films Watched per 100 Consumers</i>					7 €	105	4.90 €	339
Change in Consumer Surplus (per segment)								
	DL	AE	C	CA				
<i>Total Variation</i>	-1.26 €	1.36 €	- €	2.96 €				
<b><i>Change in Consumer Surplus of Average Consumer</i></b>				<b>.84 € (28%)</b>				
<b><i>Change in Revenue per Consumer</i></b>				<b>10.19 € (139%)</b>				

## Discussion

### 6.1. Price as a Decision Variable

Film choice is determined by film attributes (Addis & Holbrook, 2010), information sources (d'Astous & Touil, 1999), viewers' own emotional state (Eliashberg & Sawhney, 1994), expectations (Suárez-Vázquez, 2011) and motivations (Austin, 1986), and others' preferences and choices (Delre et al., 2016). Moreover, evaluation prior to viewing is made harder by the fact that films are experience goods (Moon et al., 2010), making cross-film comparisons even more subjective. Hence, we hypothesized that, in introducing variable pricing, price as a decision variable would not outweigh the importance of film attributes significantly. This was confirmed in our experiment, in which price became an important attribute but not a dominant one. At best, it became as important as other attributes such as genre and feedback from others. Moreover, these results suggest that consumers are price sensitive and that price sensitivity is independent of their genre preferences or overall preference structure. Additionally, the fact that price becomes an important choice factor on par with other film attributes suggests that consumers acknowledge that "not all films are created equal" (Reynolds, 2013, p. 47).

### 6.2. Preferences and Behavioural Adjustments

We sought to understand whether introducing price as a decision variable could significantly affect consumers' preferences. We observed genre is overall the attribute that weighs the most on consumers' choice, as well as the one whose importance most decreases with variable prices. Results suggest that genre is not only the most salient attribute but also the attribute consumers are most willing to trade-off against price. However, even though variable pricing might affect filmgoers' preference structure, our results are not sufficiently robust to support that conclusion, as a small sample size hindered the explanatory power of our estimation model for the control group.

Next, we set off to study how variable pricing would affect consumers' filmgoing behaviour. Results showed that attendance decreases on average when variable prices are introduced, which is also in line with consumers' self-reported adjustment. Nonetheless, we observed a lot of noise in these responses, and the difference obtained from the experiment (i.e. between the experimental and control groups) was not substantial.

Furthermore, we wanted to understand how exactly these churned viewers could lead to churned revenue. Would the revenue from these consumers move from the theatrical window to other release windows (and generate ancillary revenue) or would these consumers replace the cinema experience with free media? As expected, we concluded that most viewers would turn to free streaming or a combination of free streaming and some form of paid media. Consequently, to the extent that variable pricing drives a decrease in audience size, studios (and not only exhibitors) would face a revenue loss. Although we did not intend to estimate the size of that loss, a holistic approach to the possibility of introducing variable pricing must consider the dynamics of sequential distribution channels, which are vital to the film industry's profitability (Lehmann, & Weinberg, 2000)<sup>3</sup>. Nonetheless, the total number of films watched would not necessarily decrease – it could well increase as some films became cheaper and thus compatible with consumers' willingness to pay, as we exemplified through a simplified market simulation. Ultimately, this would depend on the specific preferences of audiences, the bases used for differentiating prices, the specific price points, and the films competing against each other. Note also that we are referring to aggregate changes in the number of tickets sold. More important would be knowing which kind of films are particularly likely to observe a loss in audience (e.g. films that are currently underpriced) as different films attract different audiences and generate different amounts in ancillary sales.

Thirdly, we must factor in the direct and indirect impact that variable pricing can have on the sales of popcorn, snacks and beverages, as concession sales are an important revenue stream for exhibitors (Vogel, 2014). A direct impact is driven by an increase (decrease) in some films' prices, which may lead to audiences cutting back (increasing spending) on food and drinks. An indirect impact is created via the effect of variable pricing on audience size. In that sense, churned viewers represent a double loss to exhibitors, in ticket and concession sales. In this regard, we found that most people did not believe their consumption of popcorn and beverages would change as a result of variable pricing.

### **6.3. Demand Instability**

Following Orbach's (2004) unstable demand argument, we hypothesized consumers would not perceive cheaper films to be of lower quality. Results confirmed this hypothesis by showing that a significant proportion of respondents attribute lower prices to lower production,

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<sup>3</sup> This is essential to estimate the impact of variable pricing on distributors' profits.

distribution and marketing costs. This justification dominated over all others. This not only indicates that consumers are well aware of cost differentials between films, but also that they would expect that to be the basis of variable pricing the most. Additionally, the second most selected reason was a lower expected demand. This is noteworthy, because it implies that many viewers would attribute the lower price of a film to the market's response (which is extrinsic to the film itself), suggesting discriminating prices on the basis of its demand is not foreign a notion to consumers.

#### **6.4. Fairness Perceptions Towards Variable Pricing**

There was no consensus in respondents' ratings on the fairness of differentiated prices, and the majority reported a neutral score. Based on Orbach's (2004) arguments and the reviewed theory on pricing fairness perceptions, we speculated how differentiated pricing should not be perceived as unfair, especially when signalling cost differentials. However, telling consumers that costs vary widely across films does not improve fairness ratings of variable pricing.

Interestingly, respondents seemed to be well aware of cost differentials between films but failed to consider variable pricing as fairer because of it. How would this translate into consumer behaviour? Are these self-reported fairness ratings biased (e.g. due to a negative bias that leads consumers to equate variable pricing with price increases)? Our questionnaire was neutral in regard to the differentiation basis, so what reasons did participants have to not consider variable pricing fair? As discussed, current prices being too high as it is, the prevalence of uniform pricing and suppliers already earning a reasonable profit were the highest rated reasons. All of these indicate strong respondent bias, as (1) variable pricing might not necessarily lead to price increases on average (and might actually benefit the consumer), (2) tradition is no argument for fairness and (3) consumers do not actually have access to suppliers' profit and loss statements. These results reinforce the importance of framing strategies in implementing price changes.

## Conclusions, Implications and Limitations

### 7.1. Conclusions

Our study aimed at exploring demand constraints on the possibility of introducing variable pricing, namely those regarding demand instability and fairness perceptions. We set out to analyse how consumers' choices, preferences and behaviour could change as a result of differentiated pricing, the judgments they would make on lower-priced films, and how fair they would perceive variable pricing to be.

Through a conjoint experiment, we concluded consumers are price sensitive but ultimately care for film-specific attributes just as strongly, which suggests the role of price as an important rather than a dominant decision variable. Second, variable pricing can lead to a decrease in cinema attendance, which hinders exhibitors' revenues twofold through ticket and concession sales. However, this is not a necessary outcome, as variable pricing increases demand for films that are currently overpriced as well. We also concluded that variable pricing is likely to affect sales across sequential channels, which must be kept in mind in taking a holistic view of the issue. Thirdly, we did not find evidence of a positive price-quality schema, which might indicate demand stability. This is a crucial result, as a direct benefit from variable pricing to consumers comes from the possibility of watching those films that are currently overpriced (and thus left unwatched). Finally, we concluded fairness perceptions are heterogeneous and neutral on average, and perceptions of unfairness are based on strong respondent bias, which emphasises the need for framing strategies in introducing price changes.

### 7.2. Implications for Practice

Would differentiated pricing across films leave exhibitors better off? We have shown that people are overall sceptical about variable pricing, and that those that tend to perceive it as unfair base their judgments on biased beliefs. These findings lead to the expected conclusion that framing strategies would be essential in implementing differentiated pricing. The proposition that price changes can be presented as discounts rather than surcharges at first to change consumer's reference prices (Choi et al., 2015) seems to be particularly relevant in light of these findings.

A second implication for exhibitors is the importance of factoring concession sales in (Chen, 2009). We showed that variable pricing can lead to a decrease in audience size and lead some viewers to adjust their spending on popcorn and beverages. Estimating how significant the impact on concession sales would be is crucial to solving exhibitors' profit-maximization problem.

### **7.3. Limitations and Future Research**

This study faced several limitations. First, a small sample size hampered the explanatory power of our estimation model for the control group, thus limiting conclusions on the impact of variable pricing on viewers' preference structure. Furthermore, the sample was relatively homogenous, with an overrepresentation of females and young and educated respondents.

Second, our study explicitly ignored the effects of shared consumption, which is particularly relevant in the film industry. Shared consumption was not accounted for due to resource constraints that forced us to focus on individual choice. Not only is accounting for this effect more realistic but it also offers the interesting possibility of analysing how price sensitivity manifests in a shared consumption context.

Third, our results relied substantially on self-reported data, which is prone to respondent bias and even more so when analysing pricing judgments. This was the result of a decision to focus on consumers' perceptions rather than a limitation per se. On the other hand, solving the revenue maximization problem of exhibitors requires looking at real audience behaviour. We inferred on how fair consumers perceive variable pricing to be, but to what extent do those fairness perceptions influence their behaviour? Field experiments would better take into account the multiple issues around variable pricing, namely those of shared consumption and concession sales.

Furthermore, with the benefit of hindsight, our conjoint experiment might have placed a cognitive burden on respondents, when combining choice and ranking tasks. Moreover, while attempting to limit this burden, we constrained the ability to analyse the data at the individual level, which would have allowed for a more informative characterization of the market.

Finally, the conclusions we drew from our conjoint results are very sensitive to the set of prices, attributes and levels used. Despite its power, the conjoint technique is inherently artificial, and even more so when the number of attributes used is limited. Although we attempted to include the most relevant attributes, film choice is too complex and subjective to account for in a

comprehensive manner through a short list of attributes and levels. Hybrid methods and bridging are methodological refinements that can help optimize conjoint designs.

# Appendix

## Appendix 1

### In-Depth Interviews Guidelines

#### IN-DEPTH INTERVIEWS | GUIDELINES

##### Warm-up

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Thank you for participating in this interview. We are very interested to hear your valuable opinion on today's discussion topics. These include your involvement with the film market, filmgoing habits, preferences and choice process, as well as your judgements of current and potentially different admissions pricing schemes. The expected duration for this interview is 45 minutes. I kindly ask your permission to take notes of this conversation. These recordings will be used for the sole purpose of interview analysis.

Please feel free to add any comment you feel relevant for the discussion as we go through the several topics.

##### SECTION 1

##### Involvement with the film market and filmgoing habits and preferences

---

We will start-off by discussing your filmgoing habits and preferences, such as how often you go to the cinema and what types of films you like best.

##### 1.1 Involvement with the film market

1. Do you like films? Why?
2. Do you enjoy going to the cinema? Why?
3. To what extent is watching a film at home a substitute to going to the cinema?
4. Have you watched the 2017 Oscar Ceremony last Sunday? Do you know the winners?
5. Do you stay up-to-date with upcoming films?
6. Do you proactively search for information about upcoming films?
7. Are films a recurrent discussion topic with others?
8. Is going to the cinema more of a social or a personal experience for you?

##### 1.2 Habits

9. How often do you go to the cinema? Is your attendance regular?
10. At what days of the week do you usually go to the cinema?
11. Do you ever go alone? When not going alone, do you go in a group or do you often go with just one other person?
12. Do you check any critics' reviews or review aggregator websites (e.g. Rotten Tomatoes, IMDb, Metacritic)?
13. Do you ever rate a film online?
14. When you attend the cinema, do you usually purchase popcorn/beverages?

##### 1.3 Preferences

15. What films do you like best? (preference toward any genre)?
16. Do you have any favorite stars, directors or any filmmaking artist in general?
17. How would you describe the perfect film?

## SECTION 2

### Choice process

---

Now we will discuss how you make your choice of which film to watch when going to the cinema.

18. What was the last film you watched at the cinema? How did you come to watch it at the cinema?
19. Does your decision start by defining the film you want to watch or the specific cinema where you want to go?
20. When you decide to go to the cinema, what factors do you take into account in choosing the film/screen?
21. When you go with other people, how do they influence the decision on which film you will watch?

## SECTION 3

### Judgments of film pricing

---

Now we will discuss how you make your choice of which film to watch when going to the cinema.

#### 3.1 Current experience and judgment

22. Do you benefit from any price discounts?
23. Do you think films are fairly priced?
24. Why do you think prices for films are uniform?

#### 3.2 Variable pricing experiment

25. Now please consider the following four upcoming films. Imagine that this is the information you get at the cinema:

- *Present interviewee with one of the following sets of information, and switch it between respondents:*
- i. *Set 1: information on four upcoming films including a poster, director, main cast, production budget<sup>4</sup> and admission price;*
  - ii. *Set 2: information on the same four upcoming films including a poster and admission price only.*

26. If faced with this offering, would you see any of these films in the next month? Why/why not?
27. What is your opinion on these prices?
28. Based on the present information alone, how good do you believe each of these films is?

#### 3.2 Exit questions

*(explain rationale for present study; explain the rationale for variable pricing, including the costs borne by the exhibitors)*

29. Do believe variable pricing would be fair? Does knowing that the cost to the cinema change substantially between films influence your opinion?
30. Would you think of cheaper films as being lower-quality films?
31. Would you go to the cinema less often?
32. Would you watch some types of films more/less often?
33. Would you change your consumption of popcorn/beverages?

## SECTION 4

### Closing the interview and asking for personal details

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This is it for our interview. To wrap-up, I kindly ask you to provide the following personal details:

- Age: under 18, 18-24, 25-34, 35-44, 45-54, over 64
- Gender: male, female
- Nationality

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<sup>4</sup> Production budget figures are fictional except for *Pirates of the Caribbean: Dead Men tell no Tales*

- Highest educational level: Primary School, Secondary School, Professional Degree, Undergraduate Degree, Master Degree, PhD/Doctorate
- Any personal information you provided us with will only be used for the purpose of this research project.  
Thank you very much for your participation.

## Set 1



### DUNKIRK

**Director:** Christopher Nolan  
**Starring:** Tom Hardy, Mark Rylance, Kenneth Branagh, Cillian Murphy, Harry Styles  
**Production budget:** \$200 million

**Ticket Price = 12€**  
(regular 2D format)



### GOING IN STYLE

**Director:** Zach Braff  
**Starring:** Morgan Freeman, Michael Caine, Alan Arkin  
**Production budget:** \$20 million

**Ticket Price = 6€**



### PIRATES OF THE CARIBBEAN: DEAD MEN TELL NO TALES

**Director:** Joachim Rønning, Espen Sandberg  
**Starring:** Johnny Depp, Javier Bardem, Geoffrey Rush  
**Production budget:** \$320 million

**Ticket Price = 12€**  
(regular 2D format)



### THE LOVERS

**Director:** Azazel Jacobs  
**Starring:** Debra Winger, Tracy Letts  
**Production budget:** \$10 million

**Ticket Price = 4€**

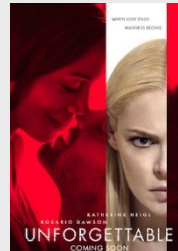
## Set 2



### THE FATE OF THE FURIOUS

**Director:** F. Gary Gray  
**Starring:** Vin Diesel, Dwayne Johnson, Jason Statham, Michelle Rodriguez  
**Production budget:** \$175 million

**Ticket Price = 12€**  
(regular 2D format)



### UNFORGETTABLE

**Director:** Denise Di Novi  
**Starring:** Katherine Heigl, Rosario Dawson, Geoff Stults  
**Production budget:** \$25 million

**Ticket Price = 5€**



### ALIEN: COVENANT

**Director:** Ridley Scott  
**Starring:** Michael Fassbender, Katherine Waterston, Billy Crudup  
**Production budget:** \$125 million

**Ticket Price = 10€**  
(regular 2D format)



### THE CASE FOR CHRIST

**Director:** Jon Gunn  
**Starring:** Mike Vogel, Erika Christensen, Faye Dunaway, Robert Forster  
**Production budget:** \$40 million

**Ticket Price = 6€**

## Appendix 2

### Summary of Results from the In-Depth Interviews

#### *Respondent demographics*

Respondent	Gender	Age Group	Education
1	Female	18-24	Higher Education
2	Female	18-24	Higher Education
3	Male	18-24	Higher Education
4	Male	25-34	Higher Education
5	Male	25-34	Higher Education
6	Female	18-24	Higher Education
7	Male	18-24	Higher Education
8	Female	18-24	Higher Education
9	Female	45-54	Higher Education
10	Male	45-54	Higher Education

#### *Involvement with film*

Respondent	Substitutability of cinematic experience	Search of upcoming films	Cinematic experience as personal v social
1	Substitutable	Mostly passive	Social
2	Partly substitutable	Passive	Social
3	Not substitutable	Active	Mostly personal
4	Not substitutable	Active	Social
5	Partly substitutable	Passive	Mostly social
6	Not substitutable	Passive	Mostly social
7	Not substitutable	Passive	Mostly social
8	Substitutable	Passive	Mostly social
9	Not substitutable	Passive	Social
10	Not substitutable	Passive	Mostly personal

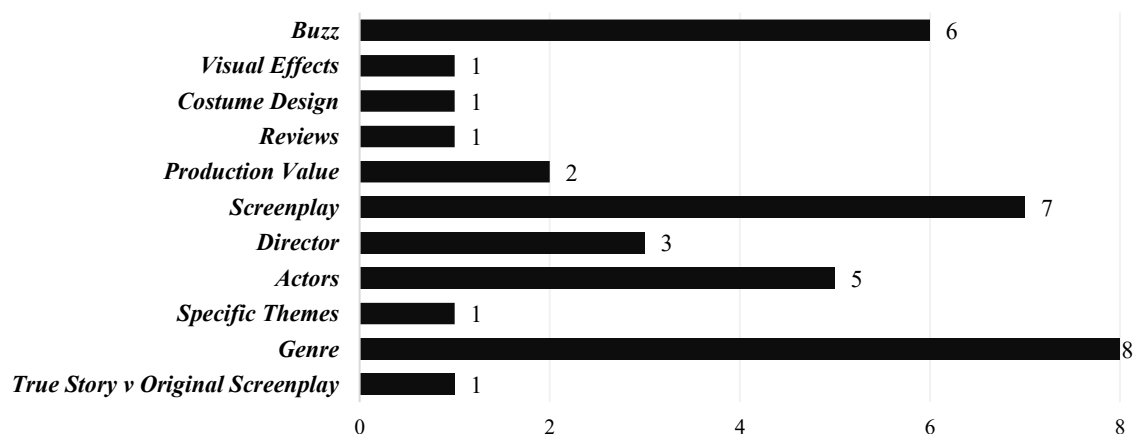
#### *Habits*

Respondent	Frequency of attendance	Visit review aggregator websites	Frequency of popcorn/beverages consumption
1	Twice a month	IMDb	Occasionally
2	Once every 2-3 months	None	Never
3	Twice a month	IMDb, Metacritic	Usually
4	Once every 2 months	Metacritic	Usually
5	Once every 2 months	IMDb	Occasionally
6	Once a month	None	Rarely
7	Once a month	None	Usually
8	Once a month	IMDb	Usually
9	Once every 2 months	None	Rarely
10	Once every 2 months	None	Never

## Preferences

Respondent	<i>What films do you like best?</i>	<i>How would you describe the perfect film?</i>	<i>What factors do you take into account in choosing a film?</i>	Main attributes mentioned
1	True stories, period films, specific themes (e.g. WWII), adventure	Emotional, exciting, thought-provoking	Buzz, genre, specific themes, cinematography, visual effects, awards	1. True stories 2. Genre 3. Specific themes 4. Buzz
2	Biopics, period films, films that "make you think"	Emotional, thought-provoking	Trailer, buzz, awards, actors, others' choices	1. Genre 2. Screenplay 3. Buzz
3	Dramas, musicals, comedies, sci-fi, actors, director, screenplay, production value	Current, relevant, soundtrack, actors, lengthy, costume design, director, recent setting, pace, creative, emotional	Genre, actors, director, screenplay, production value	1. Genre 2. Actors 3. Director 4. Screenplay 5. Production value
4	Reviews, buzz, dramas, biopics, action, animation	Authorship, vision, aesthetics, emotional, thought-provoking	Buzz, reviews, others' choices	1. Reviews 2. Buzz 3. Genre 4. Director
5	Actors, screenplay	Actors, screenplay, visual effects, cinematography, soundtrack	Actors, screenplay, others' choices	1. Screenplay 2. Actors
6	Musical, period films, fantasy, adventure, animation, costume design, films that "make you think",	Musical, period film, soundtrack, cinematography, costume design, actors	Buzz, screenplay, genre, actors, others' choices	1. Genre 2. Costume design 3. Screenplay 4. Buzz
7	Screenplay, visual effects, films that are "entertaining/involving"	Entertaining, involving, cinematography, screenplay	Buzz, others' choices, screenplay, actors, directors	1. Screenplay 2. Visual effects 3. Buzz
8	Genre, screenplay, actors, director	Screenplay, actors, director,	Screenplay, actors, genre, director, buzz, awards	1. Genre 2. Screenplay 3. Actors 4. Director
9	Romantic, historic, comedy, drama	Insightful, attention-gathering, actors, production value, director	Genre, buzz, awards, actors	1. Genre 2. Actors 3. Buzz
10	Sci-fi, thrillers, romantic comedies, horror, surprising, cinematography, soundtrack, screenplay	Surprising, screenplay, actors	Screenplay, actors	1. Genre 2. Screenplay 3. Production Value 4. Actors

### Film attributes used to describe personal preferences



### Perceived reasons for uniform pricing

Respondent	Why do you think prices for films are uniform?
1	<i>Don't know</i>
2	<i>Lower prices could be perceived as having lower quality; legislation</i>
3	<i>Perhaps this is a way of balancing between films for the retailers (between films that cost a lot and attract few people and those that cost little and attract a lot)</i>
4	<i>the experience is the same</i>
5	<i>Don't know</i>
6	<i>the cost of showing a film is the same</i>
7	<i>The costs of showing a film are the same</i>
8	<i>It could be harmful to the client (he'd feel punished for this particular taste in films).</i>
9	<i>People don't know which films are better before viewing, so they pay the same for films about which they don't have much information</i>
10	<i>Don't know</i>

### Choice experiment

Respondent	Condition: budget info provided?	Variables used to choose	Reaction to variable prices	Association between price and quality
1	Yes	<u>Budget</u> , genre	OK	Yes
2	No	Genre, screenplay <b>price</b>	Need to know why prices differ	No
3	Yes	Actors, director, <u>budget</u>	OK	No
4	No	Director	Does not make sense	No
5	Yes	Genre, <b>price</b>	On average, too high	No
6	No	Genre, <b>price</b>	OK	Yes
7	No	<b>Price</b>	Max price too high	No
8	Yes	Genre, director	Max price is too high	Yes
9	Yes	Genre, actors	Max price is too high	No
10	No	<b>Price</b> , Genre	Max price is too high	No

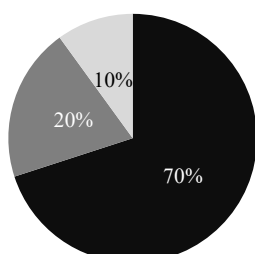
## Selected views on uniform pricing versus variable pricing

Respondent	Fairness perceptions
3	<i>Perhaps retailers fear that different prices would deter people from watching the cheaper films. Perhaps this is a way of balancing between films (between films that cost a lot and attract few people and those that cost little and attract a lot of people).</i>
4	<i>There are films that cost a lot and are bad and very good films that cost nickels; so, it makes sense that prices are independent of production costs. The experience of cinema is highly subjective – how could you discriminate?</i>
5	<i>I think that it doesn't make sense, because I have different WTP for different films. But I think I have 2-3 different WTP levels. Discriminating on the basis of every film would be too much. There are basically two types of films – good films and OK films, and I think this applies to most people.</i>
6	<i>Honestly, I never thought about it; it's always been that way. If [prices] were different, they would be a strong factor influencing choice (...) variable pricing makes sense; cannot think of a reason for it to be unfair. Given this, I would still find [the experiment's] prices too high (but not unfair).</i>
8	<i>[Variable pricing] could be harmful to the client. He would feel punished for his particular taste in films. What differentiates films is personal, it has nothing to do with the service provided, so I don't know if it makes sense to differentiate prices in that case.</i>

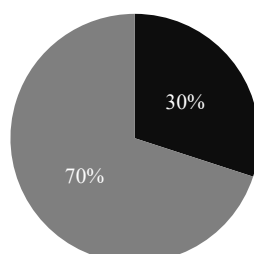
## Behavioural adjustments

Respondent	Would you go to the cinema less often?	Would you change the type of films you watch?	Would you consume less popcorn/beverages?
1	Don't know	Yes	Yes
2	Yes	Yes	N/A
3	Yes	No	Yes
4	Yes	No	Yes
5	No	No	No
6	No	No	N/A
7	Yes	Yes	No
8	Yes	No	No
9	Yes	No	No
10	Yes	No	No

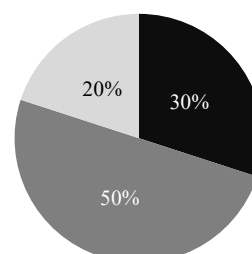
Would go to the cinema less often



Would change the type of films watched



Would consume less popcorn/beverages?



■ Yes ■ No ■ DK, N/A

## Appendix 3

### Online Survey

**Q1** Caro participante,

Para fins do meu projeto de tese, gostaria de lhe fazer algumas questões relacionadas com o seu envolvimento com a indústria cinematográfica, os seus hábitos, preferências e processo de decisão no cinema, e a sua opinião sobre esquemas de preços.

Obrigado por dedicar o seu tempo a completar este questionário. As suas respostas são estritamente confidenciais e serão analisadas unicamente no âmbito deste projeto académico. O questionário leva cerca de 7 minutos a completar e recomenda-se que seja feito através de um computador ou tablet.

Se tiver alguma questão ou preocupação, esteja à vontade para me contactar.

Muito obrigado,

João Canas Mendes

Aluno de Mestrado - Católica-Lisbon School of Business & Economics

joao.canasmendes@gmail.com

**Q2** Em que país vive?

#### SECTION 1

**Q3** Por favor indique até que ponto as seguintes afirmações se aplicam a si.

**Q4** Para mim, ver filmes no cinema:

1	2	3	4	5	6	7
Não é importante						É importante
Não me interessa						Interessa-me
Não significa nada						Significa muito
Não é significativo						É significativo

**Q5** Ao decidir que filme ver no cinema:

1	2	3	4	5	6	7
Há pouco a perder						Há muito a perder

**Q6** Fazer a escolha de que filme ver no cinema:

1	2	3	4	5	6	7
É uma decisão muito pouco importante						É uma decisão muito importante

**Q7** A decisão sobre que filme ver no cinema:

1	2	3	4	5	6	7
Requer pouca ponderação						Requer muita ponderação

**Q8** Para si, até que ponto é que ver um filme no cinema faz diferença em comparação com ver o mesmo filme em casa. Faz diferença:

- Para nenhum filme
- Para a maior parte dos filmes
- Para alguns filmes
- Para todos os filmes

**Q9** Com que frequência vai ao cinema, em média?

- 2 ou mais vezes por semana
- 1 vez por semana
- 2-3 vezes por mês
- 1 vez por mês
- Uma vez a cada 2-3 meses
- Uma vez a cada 4-6 meses
- Menos que 2 vezes por ano

**Q10** Quando vai ao cinema, compra pipocas, bebidas e/ou outros snacks?

- Nunca
- Raramente
- Por vezes
- Muitas vezes
- Sempre

**Q11** Por favor ordene os seguintes géneros de acordo com a sua preferência. Se não tem qualquer preferência, por favor coloque a opção "Não tenho preferência" no topo. Para ordenar, clique e arraste as opções.

- Animação
- Drama
- Comédia
- Aventura/Ação
- Terror
- Musical
- Comédia Romântica
- Ficção Científica
- Não tenho preferência

**Q12** Segue/acompanha o trabalho de algum ator/atriz, realizador ou qualquer outro artista do cinema com particular interesse? Por favor, selecione todas as opções que se aplicam.

- Ator/Atriz
- Realizador(a)
- Argumentista
- Diretor(a) de Fotografia
- Produtor(a)
- Compositor(a)
- Designer de guarda-roupa
- Designer de produção
- Outro. Qual?
- Nenhum

**Q13** Até que ponto é que os seguintes fatores são importantes ao decidir que filme ver no cinema: (1= Nada importante; 7= Muito importante)

	1	2	3	4	5	6	7
1. Género							
2. Elenco							
3. Realizador							
4. Argumento baseado numa história verídica VS argumento original							
5. Sequela ou adaptação de uma série ou livro VS filme original							
6. Neste item, por favor escolha "4" para confirmar que está com atenção							
7. Enredo/história							
8. Efeitos visuais							
9. Classificações dos críticos							
10. Opinião de outras pessoas							
11. Efeitos visuais							
12. Classificações dos críticos							

**Q14** Atualmente, beneficia de algum desconto no preço do bilhete de cinema?

- Sim
- Não

**Q15** O que é que pensa sobre os atuais preços dos bilhetes de cinema (excluindo bilhetes para 3D e IMAX)? Os bilhetes são...:

- Muito baratos
- Baratos
- Nem baratos nem caros
- Caros
- Muito caros

## SECTION 2

**Q16** Agora imagine que, nos cinemas, os preços variam entre filmes. Por favor considere a informação seguinte.



### DUNKIRK

**Realizador:** Christopher Nolan  
**Elenco:** Tom Hardy, Mark Rylance, Kenneth Branagh, Cillian Murphy, Harry Styles

**Preço do bilhete: 14€**  
 (formato regular 2D)



### TULIP FEVER

**Realizador:** Justin Chadwick  
**Elenco:** Alicia Vikander, Dane DeHaan, Zach Galifianakis, Judi Dench, Christoph Waltz, Cara Delevingne

**Preço do bilhete: 14€**

*[\* The film shown was randomly presented from 2 options: Dunkirk and Tulip Fever. The price level was randomly presented from a set of 5 levels – 3€, 5€, 7€, 10€ and 14€]*

**Q17** Ao preço indicado, veria este filme no cinema?

- Sim
- Não

## SECTION 3

**Q18** Agora imagine que está no cinema ou a planear ir ao cinema.

Está a olhar para a lista de filmes, que mostra todos os filmes em cartaz esta semana. Imagine que o preço dos bilhetes de cinema varia entre filmes.

Por favor, complete as seguintes tarefas:

- 1) Separe os filmes entre os que veria no cinema num prazo de 1 mês e os que não veria, colocando-os nas respetivas caixas
- 2) Ordene os filmes, em cada caixa, de acordo com a probabilidade de os ver no cinema, aos preços correspondentes
- 3) Confirme que efetivamente veria todos filmes que indicou que veria no cinema num prazo de 1 mês aos preços correspondentes – i.e. confirme que a sua resposta é o mais realista possível

OPINIÃO DE AMIGOS E FAMILIARES:

**INTERMÉDIA**

CLASSIFICAÇÃO DOS CRÍTICOS:

**NEGATIVA**

**SEM ATORES/ATRIZES FAMOSOS**

**AVENTURA/AÇÃO**

**3 €**

OPINIÃO DE AMIGOS E FAMILIARES:

**INTERMÉDIA**

CLASSIFICAÇÃO DOS CRÍTICOS:

**NEGATIVA**

**COM ATORES/ATRIZES FAMOSOS**

**COMÉDIA**

**3 €**

OPINIÃO DE AMIGOS E FAMILIARES:

**POSITIVA**

CLASSIFICAÇÃO DOS CRÍTICOS:

**INTERMÉDIA**

**SEM ATORES/ATRIZES FAMOSOS**

**AVENTURA/AÇÃO**

**6 €**

OPINIÃO DE AMIGOS E FAMILIARES:

**POSITIVA**

CLASSIFICAÇÃO DOS CRÍTICOS:

**NEGATIVA**

**COM ATORES/ATRIZES FAMOSOS**

**COMÉDIA**

**13 €**

OPINIÃO DE AMIGOS E FAMILIARES:

**POSITIVA**

CLASSIFICAÇÃO DOS CRÍTICOS:

**INTERMÉDIA**

**COM ATORES/ATRIZES FAMOSOS**

**DRAMA**

**13 €**

OPINIÃO DE AMIGOS E FAMILIARES:

**NEGATIVA**

CLASSIFICAÇÃO DOS CRÍTICOS:

**POSITIVA**

**SEM ATORES/ATRIZES FAMOSOS**

**ANIMAÇÃO**

**6 €**

OPINIÃO DE AMIGOS E FAMILIARES:

**NEGATIVA**

CLASSIFICAÇÃO DOS CRÍTICOS:

**INTERMÉDIA**

**SEM ATORES/ATRIZES FAMOSOS**

**ANIMAÇÃO**

**6 €**

OPINIÃO DE AMIGOS E FAMILIARES:

**INTERMÉDIA**

CLASSIFICAÇÃO DOS CRÍTICOS:

**INTERMÉDIA**

**SEM ATORES/ATRIZES FAMOSOS**

**ANIMAÇÃO**

**9 €**

Veria no cinema, num prazo de 1 mês

NÃO veria no cinema, num prazo de 1 mês

[\* For the control group, the introduction to the task read instead:

Agora imagine que está no cinema ou a planear ir ao cinema. Está a olhar para a lista de filmes, que mostra todos os filmes em cartaz esta semana.

Por favor, complete as seguintes tarefas:

- 1) Separe os filmes entre os que veria no cinema num prazo de 1 mês e os que não veria, colocando-os nas respetivas caixas
- 2) Ordene os filmes, em cada caixa, de acordo com a probabilidade de os ver no cinema, ao preço que atualmente paga por bilhete
- 3) Confirme que efetivamente veria todos filmes que indicou que veria no cinema num prazo de 1 mês ao preço que atualmente paga por bilhete – i.e. confirme que a sua resposta é o mais realista possível ]

#### SECTION 4

**Q19** Os bilhetes de alguns filmes mostrados anteriormente eram mais baratos que outros. Na sua opinião, qual é a principal razão pela qual esses filmes eram mais baratos?

- Custos de produção, distribuição e marketing inferiores
- Menor nível de entretenimento
- Menos efeitos visuais
- Procura/audiência esperada menor
- Menor qualidade
- Outra. Qual?
- Género específico
- Pouca comunicação/publicidade feita ao filme

[\* This question was only shown to those allocated to the experimental group in the conjoint task]

**Q20** Assuma que os preços anteriores eram introduzidos. Até que ponto concorda com as seguintes afirmações? (1= Discordo completamente; 7= Concordo completamente)

	1	2	3	4	5	6	7
1. Passaria a ir ao cinema menos vezes							
2. Mudaria o tipo de filmes que vejo no cinema							
3. Compraria menos pipocas e/ou bebidas							

[\* This question was only shown to those allocated to the experimental group in the conjoint task]

**Q21** Onde passaria a ver os filmes que deixasse de ver no cinema? Por favor, selecione todas as opções que se aplicam.

- Em home video
- Através de um serviço pay-per-view (por exemplo, MEO videoclube)
- Através de streaming gratuito
- Através de streaming pago (por exemplo, Netflix)

[\* This question was only shown to those who selected a rating lower higher than 5 in Q20.1]

#### SECTION 5

**Q22** Em que medida concorda com a seguinte afirmação? (1= Discordo completamente; 7= Concordo completamente)

	1	2	3	4	5	6	7
Diferenciar o preço dos bilhetes entre filmes seria justo							

[\* For the “cost” condition, the question read instead:

É sabido que os filmes são diferentes uns dos outros. Por exemplo, os filmes têm custos de produção, distribuição e marketing muito diferentes. Em que medida concorda com a seguinte afirmação?(1= Discordo completamente; 7= Concordo completamente)

*For the “quality” condition, it read:*

É sabido que os filmes são diferentes uns dos outros. Por exemplo, os filmes têm níveis de qualidade muito diferentes. Em que medida concorda com a seguinte afirmação? (1= Discordo completamente; 7= Concordo completamente)

*For the “popularity” condition, it read:*

É sabido que os filmes são diferentes uns dos outros. Por exemplo, os filmes têm níveis de procura/popularidade muito diferentes. Em que medida concorda com a seguinte afirmação? (1= Discordo completamente; 7= Concordo completamente) ]

**Q23** Até que ponto concorda com as seguintes afirmações? Cobrar preços diferentes por filmes diferentes não seria justo porque: (1= Discordo completamente; 7= Concordo completamente)

	1	2	3	4	5	6	7
1. O custo de reprodução dos filmes no cinema é o mesmo para todos os filmes							
2. Os cinemas e os estúdios já conseguem obter um lucro razoável sem alterarem os preços							
3. Os custos de produção, distribuição e marketing não variam muito entre filmes							
4. O preço do bilhete foi sempre o mesmo independentemente do filme							
5. O preço dos bilhetes já é bastante elevado							
6. Independentemente do filme, a experiência oferecida no cinema é a mesma							

*[\* This question was only shown to those who selected a rating lower than 5 in Q22]*

## SECTION 6

O questionário está quase completo! Para terminar, precisamos apenas de alguns dados pessoais.

**Q48** Que idade tem?

- Menos de 18 anos
- 18-24 anos
- 25-34 anos
- 35-44 anos
- 45-54 anos
- 55-64 anos
- 65 ou mais anos

**Q49** Qual é o seu género?

- Feminino
- Masculino

**Q50** Qual é a sua nacionalidade?

**Q51** Qual é a sua principal ocupação?

- Estudante
- Dono(a) de casa
- Trabalhador
- Desempregado
- Incapaz de trabalhar
- Reformado

**Q52** Qual é o maior grau académico que concluiu?

- Ensino básico
- Ensino secundário
- Ensino superior
- Mestrado ou Doutoramento

**Q53** Qual é o seu rendimento pessoal mensal após impostos (ou mesada)?

- <100€
- 100-200€
- 201-300€
- 301-400€
- 401-500€
- 501-1000€
- 1001-1500€
- 1501-2000€
- 2000-3000€
- >3000€

**Q54** Através de que dispositivo completou este questionário?

- Computador
- Tablet
- Telemóvel

Muito obrigado pela sua participação.

João Canas Mendes

## Appendix 4

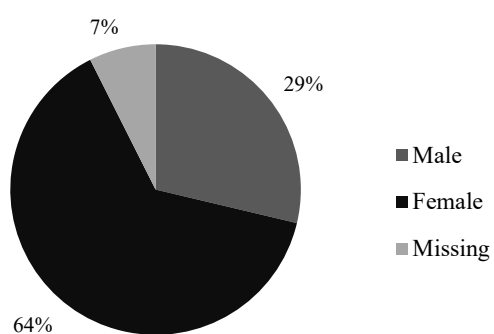
### Sample Demographics

#### Age

Age Group	Frequency	Percentage
Missing (incomplete survey)	15	7.4%
Under 18	88	43.6%
18-24	21	10.4%
25-34	19	9.4%
35-44	33	16.3%
45-54	19	9.4%
55-64	6	3%
65 or above	1	.5%
Total	202	100%

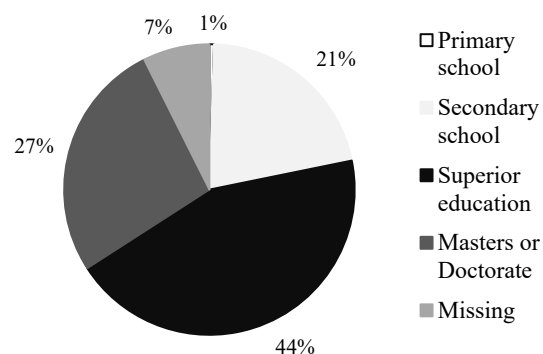
#### Gender

*Gender Distribution*



#### Education

*Education Distribution*



#### Income level

Age Group	Frequency	Percentage
Missing	15	7.4%
<100€	16	7.9%
100-200€	22	10.9%
201-300€	15	7.4%
301-400€	9	4.5%
401-500€	6	3%
501-1000€	45	22.3%
1001-1500€	24	11.9%
1501-2000€	23	11.4%
2000-3000€	20	9.9%
>3000€	7	3.5%
Total	202	100%

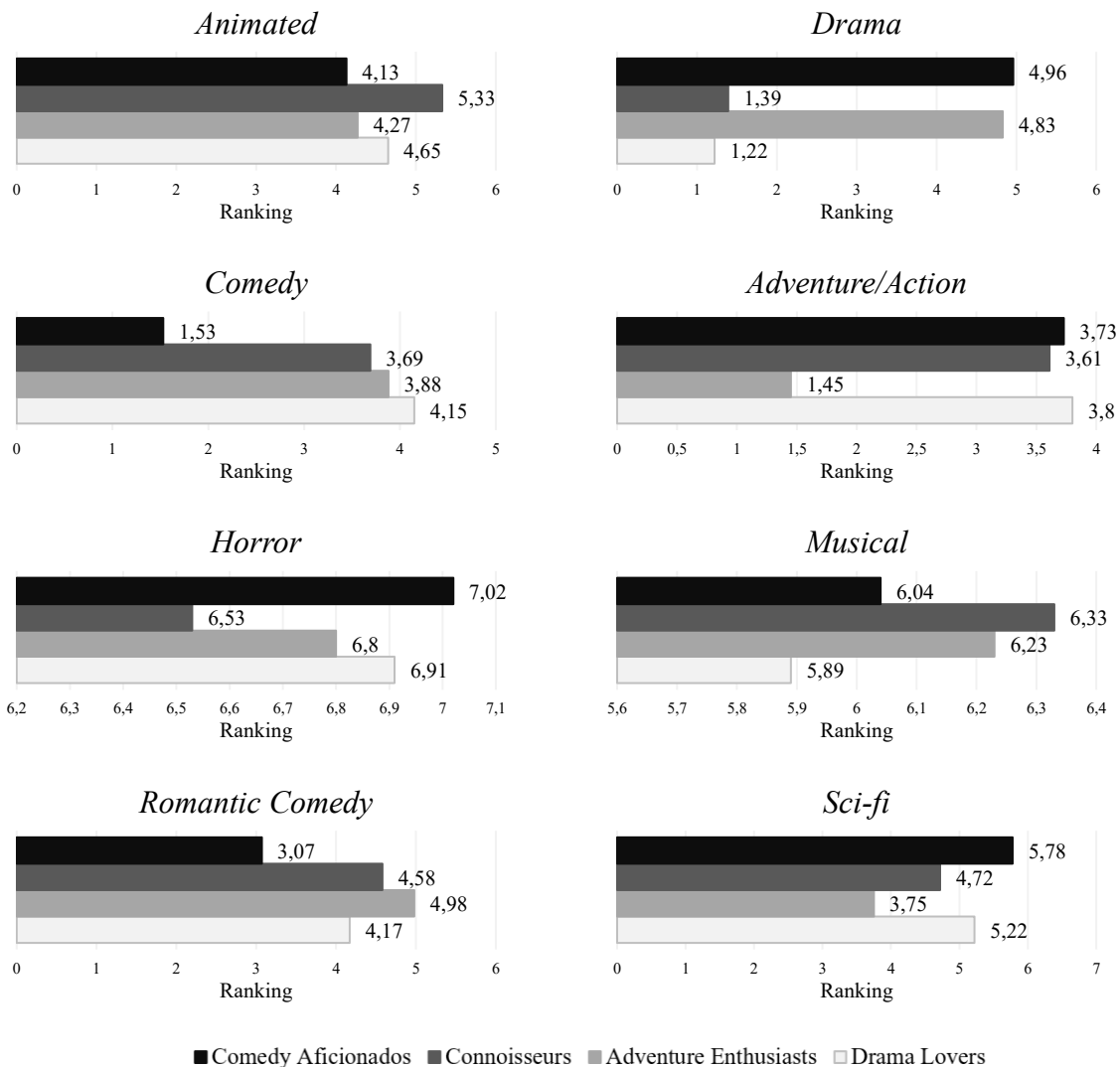
## Appendix 5

### Profiling of Segments

#### Genre Rankings and preference structure

Segment	Genre Rankings				Attribute Importance Rankings			
	Animated	Drama	Comedy	Adventure /Action	Genre	Cast	Reviews	Others' Feedback
<i>Drama Lovers</i>	4	1	3	2	1	2	4	3
<i>Adventure Enthusiasts</i>	3	4	2	1	1	2	4	3
<i>Connoisseurs</i>	4	1	2	3	3	4	1	2
<i>Comedy Aficionados</i>	3	4	1	2	1	2	4	3

#### Mean ranking of all genres



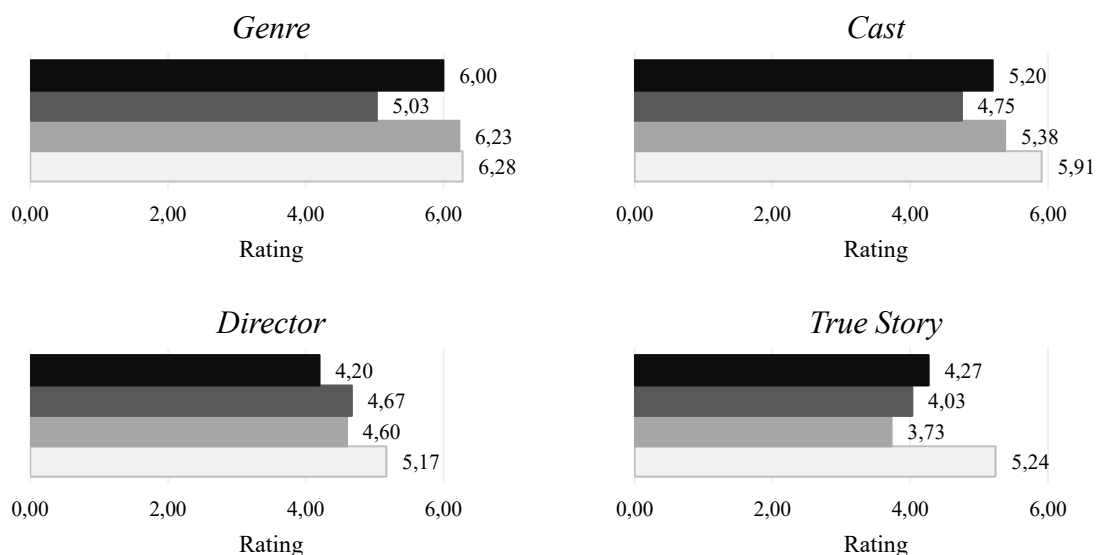
Note: Because these numbers represent rankings, the lowest numbers indicate a stronger preference toward the genre

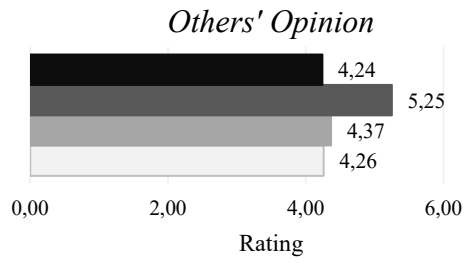
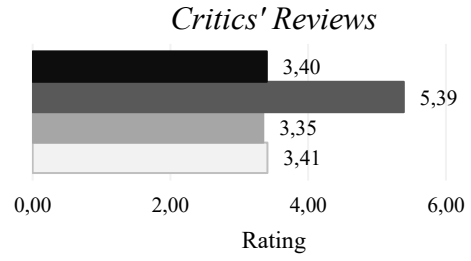
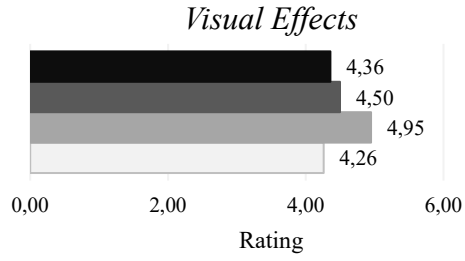
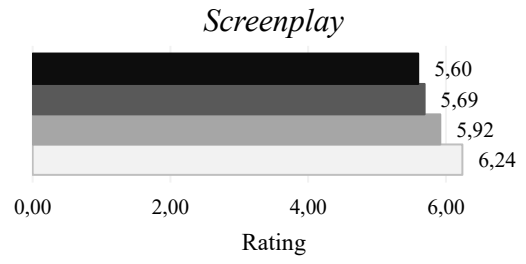
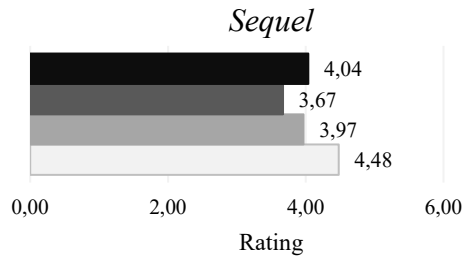
One-way ANOVA

- Independent variable: cluster membership
- Dependent variable: genre rankings

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Genre_rank animated	Between Groups	35.156	3	11.719	3.875	.010
	Within Groups	553.368	183	3.024		
	Total	588.524	186			
Genre_rank_ drama	Between Groups	595.385	3	198.462	117.678	.000
	Within Groups	308.626	183	1.686		
	Total	904.011	186			
Genre_rank_ comedy	Between Groups	199.449	3	66.483	40.696	.000
	Within Groups	298.957	183	1.634		
	Total	498.406	186			
Genre_rank_ advent.act	Between Groups	211.550	3	70.517	31.062	.000
	Within Groups	415.445	183	2.270		
	Total	626.995	186			
Genre_rank_ horror	Between Groups	5.322	3	1.774	.547	.651
	Within Groups	593.202	183	3.242		
	Total	598.524	186			
Genre_rank_ musical	Between Groups	5.070	3	1.690	.630	.597
	Within Groups	491.101	183	2.684		
	Total	496.171	186			
Genre_rank_ romant.com	Between Groups	99.542	3	33.181	8.994	.000
	Within Groups	675.142	183	3.689		
	Total	774.684	186			
Genre_rank_ sci.fi	Between Groups	117.368	3	39.123	7.568	.000
	Within Groups	946.076	183	5.170		
	Total	1063.444	186			

Mean rating of all film attributes





Comedy Aficionados
  Connoisseurs
  Adventure Enthusiasts
  Drama Lovers

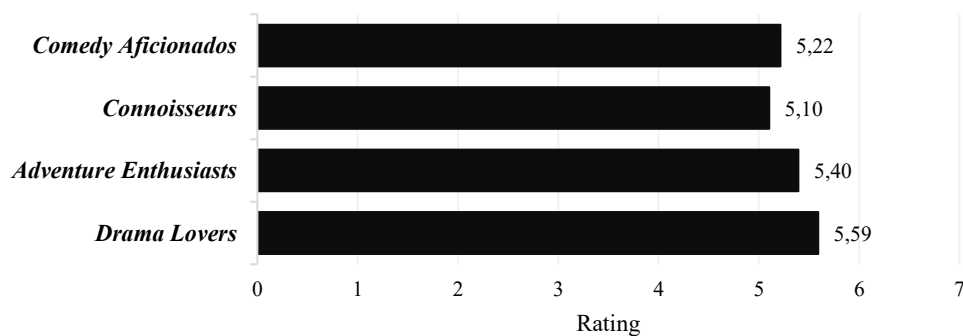
One-way ANOVA

- Independent variable: cluster membership
- Dependent variable: attribute ratings

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Importance_Genre	Between Groups	40.626	3	13.542	9.494	.000
	Within Groups	261.032	183	1.426		
	Total	301.658	186			
Importance_Cast	Between Groups	28.621	3	9.540	6.934	.000
	Within Groups	251.786	183	1.376		
	Total	280.406	186			
Importance_Director	Between Groups	21.888	3	7.296	2.852	.039
	Within Groups	468.209	183	2.559		
	Total	490.096	186			
Importance_TrueStory_VS_Original	Between Groups	62.531	3	20.844	5.943	.001
	Within Groups	641.875	183	3.508		
	Total	704.406	186			
Importance_Sequel_OR_Adapt	Between Groups	14.143	3	4.714	1.854	.139
	Within Groups	465.323	183	2.543		
	Total	479.465	186			
Importance_Screenplay	Between Groups	10.779	3	3.593	3.140	.027
	Within Groups	209.392	183	1.144		
	Total	220.171	186			
Importance_VisualFX	Between Groups	15.237	3	5.079	2.519	.060
	Within Groups	369.031	183	2.017		
	Total	384.267	186			
Importance_CriticsReviews	Between Groups	116.955	3	38.985	16.282	.000
	Within Groups	438.158	183	2.394		
	Total	555.112	186			
Importance_OthersOpinions	Between Groups	26.820	3	8.940	3.788	.011
	Within Groups	431.864	183	2.360		
	Total	458.684	186			

Involvement with film

Product Involvement ( $\alpha = .92$ )



## Appendix 6

### Estimation Model Coefficients for the Control Group

Independent Variables	Full Sample <i>N</i> = 64	Segments			
		Drama Lovers <i>N</i> = 13	Adventure Enthusiasts <i>N</i> = 19	<i>Connoisseurs</i> <i>N</i> = 13	Comedy Aficionados <i>N</i> = 15
Popular actor/ actress starring	.23 (.23)	.49 (.62)	.45 (.43)	1.09 (.69)	.20 (.49)
Animated	-.10 (.25)	.86 (.59)	-.69 (.47)	-.71 (.77)	.23 (.57)
Drama	.38 (.25)	.69 (.69)	.20 (.46)	.76 (.56)	.61 (.62)
Comedy	-.64* (.38)	.31 (.90)	-16.50 (1375.78)	-.16 (.77)	-.10 (.73)
Others' Opinions: Positive	.75*** (.26)	1.77** (.78)	1.33** (.52)	.46 (.63)	.40 (.55)
Others' Opinions: Mixed	.22 (.28)	.19 (.80)	.72 (.52)	.79 (.72)	.13 (.62)
Reviews: Positive	.24 (.25)	1.30* (.77)	.20 (.47)	1.67** (.73)	-.41 (.59)
Reviews: Mixed	-.34 (.25)	.19 (.59)	-.10 (.45)	-.11 (.62)	-.58 (.51)
Constant	-.94*** (.34)	-2.20** (.97)	-1.30** (.64)	-2.04* (1.05)	-.67 (.70)
Log Likelihood	-209.30	-38.77	-53.80	-37.61	-49.97

Note: Standard errors are between parentheses; coefficients with an asterisk are statistically significant with  $p < .1$  (\*),  $p < .05$  (\*\*) or  $p < .01$  (\*\*\*)

## Appendix 7

### Attributes' Relative Importance

#### *Attribute Relative Importance – experimental group*

Attribute/ Level	Part Worths					Ranges					Attribute Relative Importance					
	Full Sample	Segments				Full Sample	Segments				Full Sample	Segments				
		DL	AE	C	CA		DL	AE	C	CA		DL	AE	C	CA	
<b>Popular actor/actress starring</b>																
Starring	.5	.5	.8	.4	.5	.5	.5	.8	.4	17%	15%	14%	18%	7%		
NOT starring	0	0	0	0	.5	.5	.5	.8	.4							
<b>Genre</b>																
Animated	-.5	-.4	-.8	-.6	.2											
Drama	-.2	.5	-1.2	0	.3											
Comedy	0	.2	-.6	.1	1.1	.5	.9	1.2	.7	1.1	16%	25%	37%	16%	19%	
Action/ Adventure	0	0	0	0	0											
<b>Others' Feedback</b>																
Positive	.8	1	.5	.8	1.6											
Mixed	.3	.4	0	0	1.1	.8	1	.5	.8	1.6	25%	29%	16%	19%	27%	
Negative	0	0	0	0	0											
<b>Critics' Reviews</b>																
Positive	.5	.5	-.1	1.2	.7											
Mixed	.2	.4	-.4	.4	.8	.5	.5	.4	1.2	.8	15%	13%	11%	27%	13%	
Negative	0	0	0	0	0											
<b>Price</b>																
13 €	-1.1	-.8	-.9	-1.2	-2.5											
9 €	-.8	-.6	-.6	-.8	-1.7	.9	.6	.7	.9	1.9	27%	18%	22%	20%	33%	
6 €	-.5	-.4	-.4	-.5	-1.2											
3 €	-.3	-.2	-.2	-.3	-.6											
						Sum	3.2	3.5	3.3	4.4	5.8	1	1	1	1	1

#### *Attribute Relative Importance – control group*

Attribute/ Level	Part Worths					Ranges					Attribute Relative Importance					
	Full Sample	Segments				Full Sample	Segments				Full Sample	Segments				
		DL	AE	C	CA		DL	AE	C	CA		DL	AE	C	CA	
<b>Popular actor/actress starring</b>																
Starring	.2	.5	.4	1.1	.2	.2	.5	.4	1.1	.2	9%	11%	2%	21%	11%	
NOT starring	0	0	0	0	0	.2	.5	.4	1.1	.2						
<b>Genre</b>																
Animated	-.1	.9	-.7	-.7	.2											
Drama	.4	.7	.2	.8	.6											
Comedy	-.6	.3	-16.5	-.2	-.1	1	.9	16.7	1.5	.7	39%	19%	89%	29%	38%	
Action/ Adventure	0	0	0	0	0											
<b>Others' Feedback</b>																
Positive	.7	1.8	1.3	.5	.4											
Mixed	.2	.2	.7	.8	.1	.7	1.8	1.3	.8	.4	29%	40%	7%	15%	21%	
Negative	0	0	0	0	0											
<b>Critics' Reviews</b>																
Positive	.2	1.3	.2	1.7	-.4											
Mixed	-.3	.2	-.1	-.1	-.6	.6	1.3	.3	1.8	.6	23%	29%	2%	35%	30%	
Negative	0	0	0	0	0											
						Sum	2.6	4.4	18.8	5.1	1.9	1	1	1	1	1

## Appendix 8

### Dichotomous Choice – *Dunkirk & Tulip Fever*

#### Logistic Regression

**Dich\_Dunkirk = Tulip Fever**

**Method = Forward Stepwise (Conditional)**

#### Omnibus Tests of Model Coefficients<sup>a</sup>

		Chi-square	df	Sig.
Step 1	Step	19,809	1	,000
	Block	19,809	1	,000
	Model	19,809	1	,000

a. Dich\_Dunkirk = Tulip Fever

#### Model Summary<sup>a</sup>

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	100,718 <sup>b</sup>	,175	,254

a. Dich\_Dunkirk = Tulip Fever

b. Estimation terminated at iteration number 5 because parameter estimates changed by less than ,001.

#### Classification Table<sup>a,b</sup>

Observed			Predicted		
			Dich Choice		Percentage Correct
			,0	1,0	
Step 1	Dich_Choice ,0	66	9	88,0	
	1,0	15	13	46,4	
Overall Percentage				76,7	

a. Dich\_Dunkirk = Tulip Fever

b. The cut value is ,500

#### Variables in the Equation<sup>a</sup>

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>b</sup>	Dich_Price	-,321	,088	13,288	1	,000	,726
	Constant	1,137	,559	4,139	1	,042	3,116

a. Dich\_Dunkirk = Tulip Fever

b. Variable(s) entered on step 1: Dich\_Price.

#### Model if Term Removed<sup>a,b</sup>

Variable		Model Log Likelihood	Change in -2 Log Likelihood	df	Sig. of the Change
Step 1	Dich_Price	-61,153	21,588	1	,000

a. Dich\_Dunkirk = Tulip Fever

b. Based on conditional parameter estimates

Dich\_Dunkirk = Dunkirk

Block 1: Method = Forward Stepwise (Conditional)

**Omnibus Tests of Model Coefficients<sup>a</sup>**

		Chi-square	df	Sig.
Step 1	Step	47,606	1	,000
	Block	47,606	1	,000
	Model	47,606	1	,000

a. Dich\_Dunkirk = Dunkirk

**Model Summary<sup>a</sup>**

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	76,992 <sup>b</sup>	,382	,533

a. Dich\_Dunkirk = Dunkirk

b. Estimation terminated at iteration number 6 because parameter estimates changed by less than ,001.

**Classification Table<sup>a,b</sup>**

Observed		Predicted		
		Dich_Choice		Percentage Correct
		,0	1,0	
Step 1	Dich_Choice ,0	53	14	79,1
	1,0	7	25	78,1
Overall Percentage				78,8

a. Dich\_Dunkirk = Dunkirk

b. The cut value is ,500

**Variables in the Equation<sup>a</sup>**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>b</sup>	Dich_Price	-,635	,138	21,291	1	,000	,530
	Constant	3,302	,807	16,765	1	,000	27,179

a. Dich\_Dunkirk = Dunkirk

b. Variable(s) entered on step 1: Dich\_Price.

**Model if Term Removed<sup>a,b</sup>**

Variable		Model Log Likelihood	Change in -2 Log Likelihood	df	Sig. of the Change
Step 1	Dich_Price	-65,821	54,651	1	,000

a. Dich\_Dunkirk = Dunkirk

b. Based on conditional parameter estimates

*Demand curve estimation*

Demand was estimated based on the following function:

$$P(Y = 1) = P\left(\frac{YES}{A}\right) = \frac{e^{\alpha+\beta A}}{1 + e^{\alpha+\beta A}} = \frac{1}{1 + e^{-(\alpha+\beta A)}}$$

Where  $\alpha$  denotes the constant term from the logit regression,  $\beta$  the regression coefficient for price and A the price level.

For *Tulip Fever* the function was therefore:

$$P(Y = 1) = P\left(\frac{YES}{A}\right) = \frac{1}{1 + e^{-(1.14 - .32A)}}$$

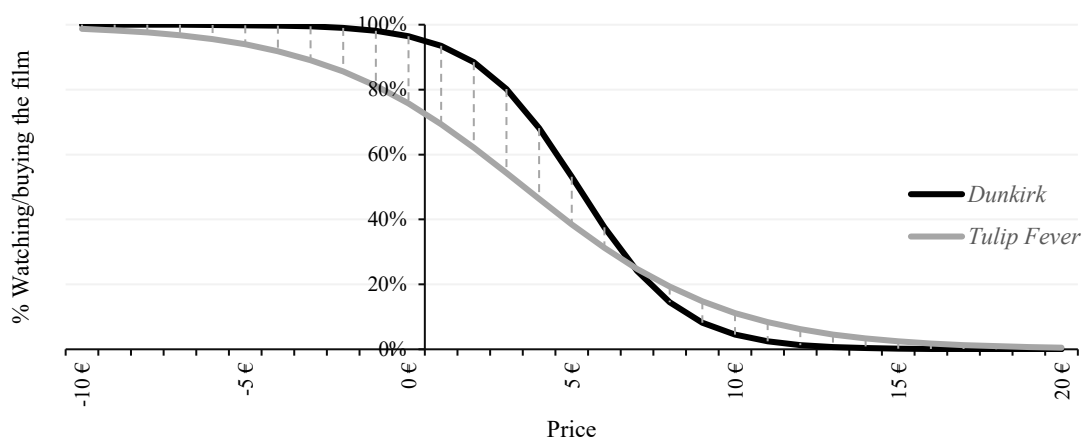
For *Dunkirk* the function was therefore:

$$P(Y = 1) = P\left(\frac{YES}{A}\right) = \frac{1}{1 + e^{-(3.30 - .64A)}}$$

	<i>Tulip Fever</i>	<i>Dunkirk</i>
Constant	1.14	3.30
Beta	-.32	-.64

Price	<i>Tulip Fever</i>	<i>Dunkirk</i>	Price	<i>Tulip Fever</i>	<i>Dunkirk</i>
- 10 €	98.72%	99.99%	8 €	19.29%	14.46%
- 9 €	98.25%	99.99%	9 €	14.78%	8.22%
- 8 €	97.60%	99.98%	10 €	11.17%	4.53%
- 7 €	96.72%	99.96%	11 €	8.36%	2.45%
- 6 €	95.53%	99.92%	12 €	6.21%	1.32%
- 5 €	93.95%	99.85%	13 €	4.58%	0.70%
- 4 €	91.84%	99.71%	14 €	3.37%	0.37%
- 3 €	89.09%	99.46%	15 €	2.47%	0.20%
- 2 €	85.56%	98.98%	16 €	1.80%	0.10%
- 1 €	81.12%	98.09%	17 €	1.31%	0.06%
- €	75.71%	96.45%	18 €	0.96%	0.03%
1 €	69.34%	93.51%	19 €	0.70%	0.02%
2 €	62.13%	88.41%	20 €	0.51%	0.01%
3 €	54.34%	80.17%	21 €	0.37%	0.00%
4 €	46.33%	68.18%	22 €	0.27%	0.00%
5 €	38.51%	53.17%	23 €	0.19%	0.00%
6 €	31.24%	37.57%	24 €	0.14%	0.00%
7 €	24.79%	24.18%	25 €	0.10%	0.00%

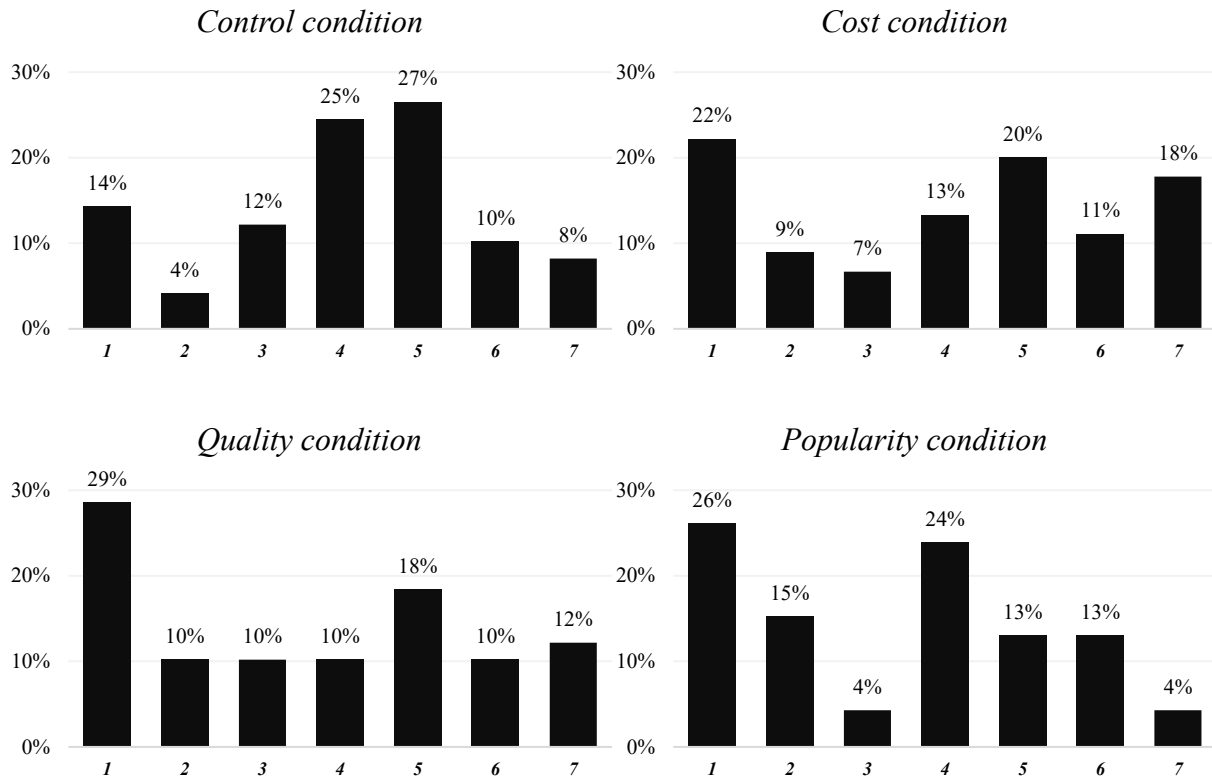
*Estimated demand curve*



## Appendix 9

### Fairness Perceptions Towards Variable Pricing

#### Distribution of fairness ratings



#### Mean ratings across conditions

Condition	Mean fairness rating	One-way ANOVA
Control ( $N = 49$ )	4.08 (1.74)	$F = 1.34$ $p. = .26$
Cost ( $N = 45$ )	4.04 (2.18)	
Quality ( $N = 49$ )	3.59 (2.17)	
Popularity ( $N = 46$ )	3.39 (1.94)	

#### One-way ANOVA

- Independent variable: condition
- Dependent variable: fairness rating

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.289	3	5.430	1.339	.263
Within Groups	750.378	185	4.056		
Total	766.667	188			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Fairness  
Tukey HSD

(I) Fairness condition	(J) Fairness condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Control	Costs	.037	.416	1	-1.04	1.115
	Quality	.490	.407	.625	-.565	1.545
	Popularity	.690	.413	.343	-.381	1.762
Costs	Control	-.037	.416	1	-1.115	1.041
	Quality	.452	.416	.697	-.625	1.531
	Popularity	.653	.422	.412	-.442	1.748
Quality	Control	-.489	.407	.625	-1.545	.565
	Costs	-.452	.416	.697	-1.531	.625
	Popularity	.201	.413	.962	-.871	1.273
Popularity	Control	-.690	.413	.343	-1.762	.3816
	Costs	-.653	.422	.412	-1.748	.442
	Quality	-.201	.413	.962	-1.273	.871

## Appendix 10

### Market Simulation

#### Scenario: Uniform Pricing

Film	Willingness to Pay (per segment)				Prices	Consumer Surplus (per segment)				Revenue per film	
	DL	AE	C	CA		DL	AE	C	CA		
<i>Life</i>	5.64 €	9.09 €	3.77 €	6.94 €	7 €	2.09 €				7 €	
<i>The Circle</i>	1.61 €				7 €					- €	
<i>The Zookeeper's Wife</i>	13.62 €		3.71 €	8.26 €	7 €	6.62 €		1.26 €		14 €	
<i>Demain Tout Commence</i>					6.73 €	7 €					- €
<i>Going in Style</i>	3.11 €	6.40 €	.22 €	8.82 €	7 €	1.82 €				7 €	
<i>The Shack</i>					2.24 €	7 €					- €
<i>Ballerina</i>					5.75 €	7 €					- €
<i>The Fate of the Furious</i>	2.54 €		4.85 €		7 €					- €	
Total Consumer Surplus						6.62 €	2.09 €	- €	3.07 €		
Total Number of Films Watched						1	1	0	2		
Total Revenue						7 €	7 €	- €	14 €		

Segment Weights				
	DL	AE	C	CA
<i>N</i>	46	60	36	45
Weights	25%	32%	19%	24%

- Average-consumer expected expense per film = 7.00 €
- Consumer Surplus for the average consumer = 3.04 €
- Number of films watched for the average consumer = 1.05
- Total expected revenue from the average consumer = 7.34 €

*Scenario: Variable Pricing*

<i>Film</i>	Willingness to Pay (per segment)				Prices	Consumer Surplus (per segment)				Revenue per film
	DL	AE	C	CA		DL	AE	C	CA	
<i>Life</i>	5.64 €	9.09 €	3.77 €	6.94 €	5.64 €	0.00 €	3.45 €		1.30 €	16.93 €
<i>The Circle</i>	1.61 €				1.61 €	0.00 €				1.61 €
<i>The Zookeeper's Wife</i>	13.62 €		3.71 €	8.26 €	8.26 €	5.36 €			0.00 €	16.51 €
<i>Demain Tout Commence</i>				6.73 €	6.73 €				0.00 €	6.73 €
<i>Going in Style</i>	3.11 €	6.40 €	.22 €	8.82 €	6.40 €		0.00 €		2.42 €	12.79 €
<i>The Shack</i>				2.24 €	2.24 €				0.00 €	2.24 €
<i>Ballerina</i>				5.75 €	5.75 €				0.00 €	5.75 €
<i>The Fate of the Furious</i>		2.54 €		4.85 €	2.54 €		0.00 €		2.32 €	5.07 €
Total Consumer Surplus						5.36 €	3.45 €	- €	6.04 €	
Total Number of Films Watched						3	3	0	7	
Total Revenue						15.50 €	14.57 €	- €	37.55 €	

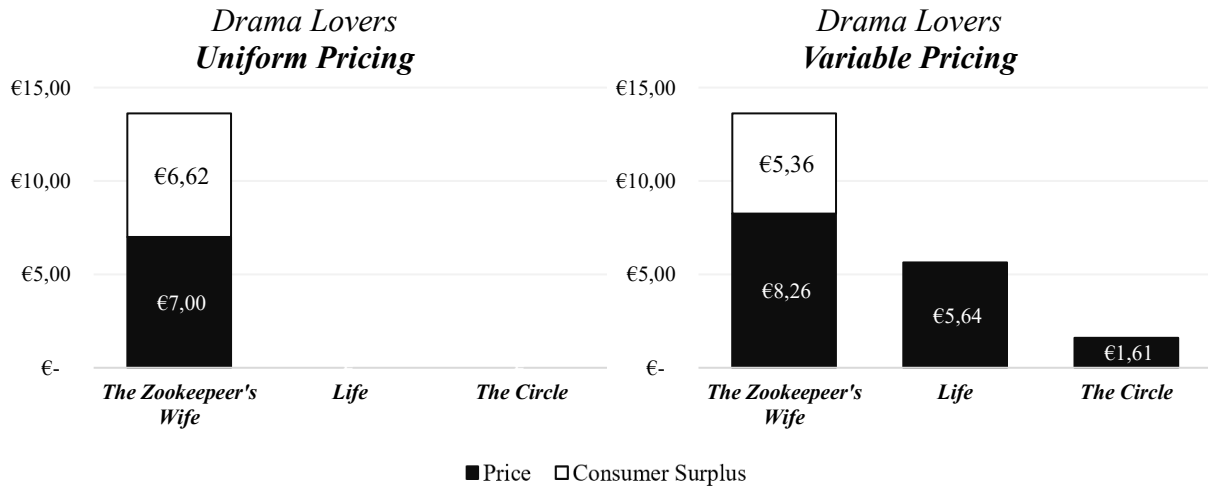
Segment Weights				
	DL	AE	C	CA
<i>N</i>	46	60	36	45
<i>Weights</i>	25%	32%	19%	24%

- Average-consumer expected expense per film = 5.10 €
- Consumer Surplus for the average consumer = 3.88 €
- Number of films watched for the average consumer = 3.39
- Total expected revenue from the average consumer = 17.53 €

**Payoff breakdown**

*1) Drama Lovers*

<i>Uniform Pricing</i>	<i>Variable Pricing</i>
<ul style="list-style-type: none"> <li>• Number of films watched = 1</li> <li>• Expected expense per film = 7.00 €</li> <li>• Total consumer surplus = 6.62 €</li> </ul>	<ul style="list-style-type: none"> <li>• Number of films watched = 3</li> <li>• Expected expense per film = 5.17 €</li> <li>• Total consumer surplus = 5.36 €</li> </ul>



## 2) Adventure Enthusiasts

### Uniform Pricing

- Number of films watched = 1
- Expected expense per film = 7.00 €
- Total consumer surplus = 2.09 €

### Variable Pricing

- Number of films watched = 3
- Expected expense per film = 4.86 €
- Total consumer surplus = 3.45 €



## 3) Connoisseurs

### Uniform Pricing

- Number of films watched = 0
- Expected expense per film = 0 €
- Total consumer surplus = 0 €

### Variable Pricing

- Number of films watched = 0
- Expected expense per film = 0 €
- Total consumer surplus = 0 €

#### 4) Comedy Aficionados

##### Uniform Pricing

- Number of films watched = 2
- Expected expense per film = 7.00 €
- Total consumer surplus = 3.07 €

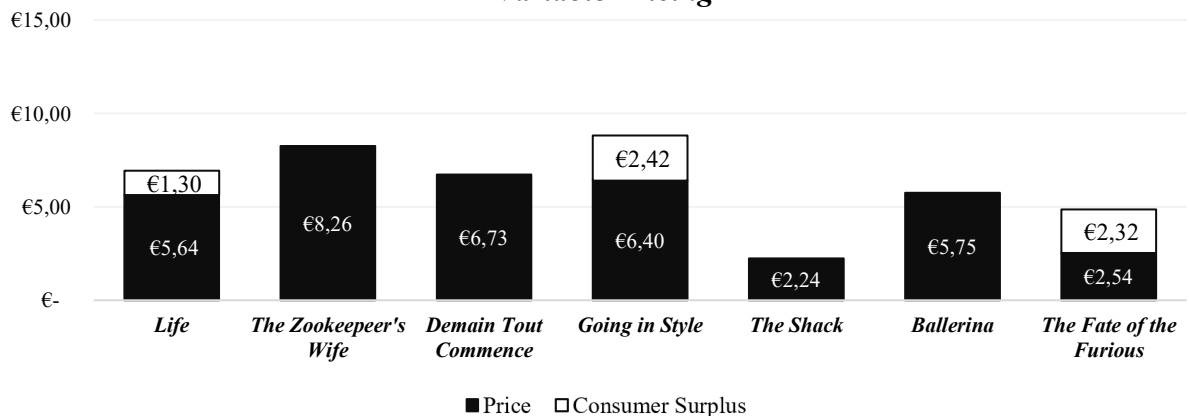
##### Variable Pricing

- Number of films watched = 7
- Expected expense per film = 5.36 €
- Total consumer surplus = 6.04 €

#### Comedy Aficionados Uniform Pricing

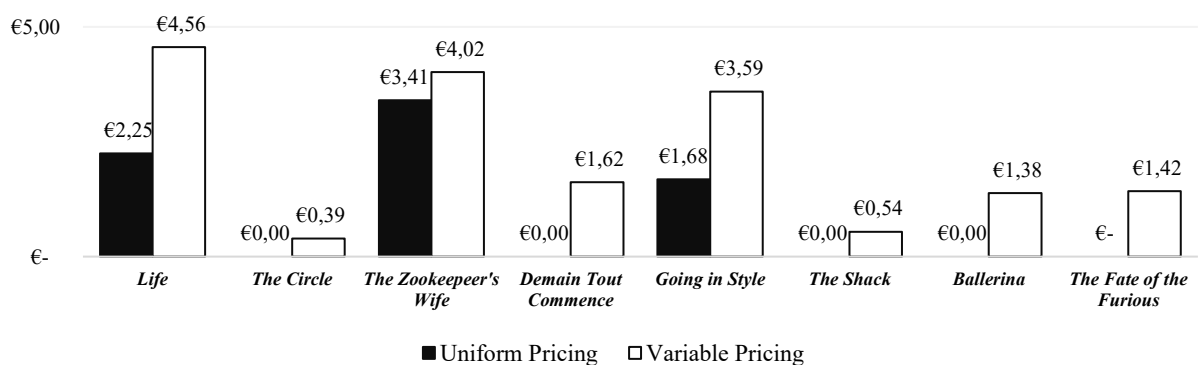


#### Comedy Aficionados Variable Pricing



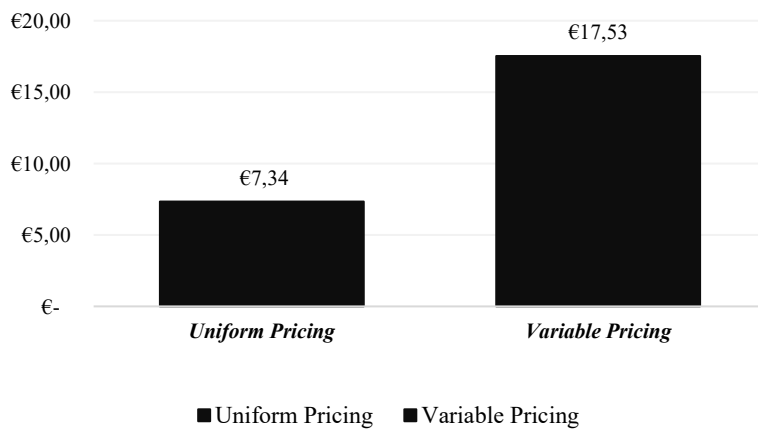
#### 5) Individual films

##### Expected Revenue per film per average consumer



6) Total expected revenue from the average consumer

*Expected revenue from the average consumer*



*Simplifying assumptions and limitations of simulation*

1. The exhibitor is a monopolist – no competition is considered;
2. No constrain other than willingness to pay – the simulation assumes every viewer will watch the film as long as the price is not higher than their willingness to pay;
3. The simulation does not control for price discounts, which are currently significant;
4. The simulation does not consider the impact of variable pricing on concession sales.

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