Managing **positive** and **negative emotions** in **dark tourism**: Implications from dark immersive theatre experiences

A gestão de **emoções positivas** e **negativas** em **dark tourism**: Implicações das experiências de teatro imersivo de terror

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Abstract | Dark Immersive Theatre Experiences (DITE) have been growing in popularity globally, with individuals voluntary seeking dark emotions for purposes of entertainment. Tourism studies tend to classify the management of emotions in two major categories: positive and negative. This paper uses the Positive and Negative Affect Schedule – Portuguese Reduced Version (PANAS–VRP) scale to examine the effect of DITE on participants' positive and negative affects (n = 428). Then, it seeks to determine the relationship between both positive and negative affects with consumer overall satisfaction. The results show that participants report higher levels of positive emotions before and after DITE, and that both positive and negative affects tend to decrease after exposure to DITE. Furthermore, a positive strong association was found between positive affect and consumer overall satisfaction. Two additional relevant sociodemographic results were found: (i) females report higher levels of negative emotions; (ii) the level of negative feelings decreases as age increases. This study suggests that DITE managers should focus on the management of positive emotions, implying the reinforcement of the subjectivity of the contemporary touristic experience in the positive consumption of dark emotions for entertainment purposes.

Keywords | Dark Immersive Theatre Experiences (DITE), dark tourism, Positive and Negative Affect Schedule (PANAS), Portugal

Resumo | As Dark Immersive Theatre Experiences (DITE) têm vindo a aumentar a sua popularidade global, com os indivíduos a procurar voluntariamente emoções dark para fins de entretenimento. Os

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estudos de turismo têm classificado a gestão das emoções em duas principais categorias: positivas e negativas. Este artigo utiliza a escala Positive and Negative Affect Schedule – Versão Portuguesa Reduzida (PANAS-VRP) para examinar o efeito das DITE nos afetos positivo e negativo dos seus participantes (n = 428). Posteriormente, pretende-se explorar a relação entre ambos os afetos positivo e negativo e a satisfação geral do consumidor. Os resultados demonstram que os participantes reportam níveis mais elevados de emoções positivos, antes e após a experiência, bem como uma redução de ambos os afetos positivo e negativo após exposição às DITE. Adicionalmente, foi identificada uma associação positiva forte entre o afeto positivo e a satisfação geral do consumidor. Outros dois resultados sociodemográficos relevantes foram encontrados: (i) as mulheres reportam níveis mais elevados de emoções negativas; (ii) a expressão das emoções negativas diminui com o aumento da idade. Este estudo sugere que os gestores de DITE se devem focar na gestão de emoções positivas, implicando um reforço da subjetividade da experiência turística contemporânea no consumo positivo de emoções dark para fins de entretenimento.

Palavras-chave | Dark Immersive Theatre Experiences (DITE), dark tourism, Positive and Negative Affect Schedule (PANAS), Portugal

1. Introduction

Dark tourism has been gaining popularity (Cornell et al., 2019; Coutinho & Baptista, 2014), with the market for horror attracting more individuals in recent years (Wright, 2018). DITE have been growing in popularity globally, with the production of new experiences that attract more and more individuals (Belo & Gustavo, 2020; Belo, 2022). In fact, immersive entertainment consumers place immersive theatre and darkness at the top of their preferences (Brigante & Elger, 2020; JTB Tourism Research & Consulting, 2022). The potential of DITE as a dark tourism product is also suggested by the travel patterns of immersive consumers, who travel on a regular basis specifically to attend to such experiences. Therefore, immersive experiences' strategy should focus on tourist markets (Brigante & Elger, 2020). Tourists' desire to voluntary experience dark emotions for purposes of entertainment (Ashworth, 2008) underlines the importance of understanding the role of emotions in the contemporary tourist experience.

Tourism research tends to classify emotions in two major categories: positive and negative. The management of both positive and negative emotions has been pointed out as critical for the success of tourist products. The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) is a parsimonious scale based on this bi-dimensional model, being widely used to simultaneously access the positive and negative affects of individuals at a given moment. Galinha and Pais-Ribeiro (2005) adapted and validated the original PANAS scale for the Portuguese population. Galinha et al. (2014) later developed a shorter version of the scale for the Portuguese population: the PANAS-VRP.

This paper uses the PANAS-VRP to assess the effect of DITE on participants' positive and negative emotions. Then, it clarifies the relationship between both positive and negative emotions with consumer overall satisfaction. Furthermore, it explores sociodemographic tendencies associated with emotions in DITE. This paper intends to contribute to a better understanding of the management of positive and negative emotions in dark tourism products.

2. Literature review

2.1. The concept of dark immersive theatre experiences

In the light of current social dynamics, tourism motivations are carried out into different directions, leading to a more specific consumption of tourism (WTO, 2020). On a global context of plurality, subjectivity and diversification of contemporary tourism practices, innovation, specialization and segmentation emerge (Belo, 2022; Joaquim et al., 2019). One of the main global tendencies within the scope of tourist products is dark tourism, which has been gaining popularity in terms of production and consumption, with tourists seeking novel and enticing experiences (Cornell et al., 2019; Coutinho & Baptista, 2014; Wright, 2018).

One possible way to define dark tourism is from the experience perspective: *"Dark tourism is where the tourist's experience is essentially composed of 'dark' emotions such as pain, death, horror or sadness, many of which result from the infliction of violence that are not usually associated with a voluntary entertainment experience"* (Ashworth, 2008, p. 234). Dark tourism practices are as old as the tourist activity itself (Seaton, 1996; Stone & Sharpley, 2008), constituting motives for traveling for several centuries (Krisjanous, 2016). In fact, attractions and sites associated to death go back to the I Century, with the Colosseum of Rome attracting thousands of people and presenting thousands of reasons to travel (Stone, 2006; Yan et al., 2016).

More recently, the market for horror-based attractions and entertainment have been growing, including theme parks, rides and roller-coaster, often taking a dark and scary approach to enticing consumers (Wright, 2018). However, the market for horror is not limited to these attractions. In fact, dark tourism concept tends to be used as an umbrella term (Light, 2017), comprising several subcategories.

In this growing relevance of dark tourism in the contemporary dynamics of tourism, new products centered on darkness have emerged. However, it seems that the only common factor shared by these diverse dark tourist products is that they are built around darkness. However, darkness is subjective and plural. Darkness comprises a wide range of themes, including, but not limited to, anguish (e.g. Dunkley et al., 2007), atrocity (e.g. Stone & Sharpley, 2008), chaos (e.g. Dann, 1998), conflict (e.g. Buda & McIntosh, 2013), crime (e.g. Lennon, 2017), danger (e.g. Hepburn, 2012), death (e.g. Rojek, 1993), depravation (e.g. Lennon & Foley, 1999), destruction (e.g. Piekarz, 2007), disaster (e.g. Zhang, 2021), forbidden (e.g. Buda & Shim, 2015), hostile (e.g. Buda & McIntosh, 2013), lost (e.g. Zhang, 2021), macabre (e.g. Millán et al., 2019); melancholic (e.g. Boateng et al., 2018), morbid (e.g. Bloom, 2000), murder (e.g. Lennon, 2017), pain (e.g. Gotham, 2015), sadness (e.g. Gotham, 2015), scare (e.g. Bloom, 2000), sinister (e.g. Bristow & Newman, 2004), suffering (e.g. Best, 2007), torture (e.g. Dunkley et al., 2007), tragedy (e.g. Tarlow, 2005), traumatic (e.g. Gotham, 2015) or violence (e.g. Robb, 2009).

In this scenario of the emergence of heterogeneous motivations to travel, innovative products, segmentation tendencies, and dark products growth, DITE have emerged. Considering Schumpeter's (1934) original theory of innovation, DITE can be described as an application and implementation of existing ideas, resulting in a new product typology that combines elements from darkness and immersive theatre. In its essence, DITE seem to be mainly based on the fundamentals of immersive theatre, which are clearly focused on the participants' experience, who are placed in the heart of the experience. Therefore, in immersive theatre, participants tend to present higher levels of absorption and involvement, have the opportunity to play an active role and to truly be cocreators of the experience itself (Alston, 2016; Mesquita et al., 2019; White, 2013). However, DITE

seem to include an additional and important characteristic: the invitation to participation through darkness (Belo & Gustavo, 2020).

The main tendencies of tourism segmentation suggest it would be simplistic not to consider that the motives that lead individuals to DITE do not differ from other forms of dark tourism or immersive theatre contexts. DITE heavily relies on the promotion of a psychological horror and a non-simulated fear (Biggin, 2017; Clasen et al., 2019), with participants reporting states of nervous excitement, caused by not knowing what will happen next, that lead to an emotional response that tends to intensify the experience (Brigante & Elger, 2020).

From a conceptual perspective, by identifying the existing categories of immersive entertainment, Brigante and Elger (2020) clarify what DITE are not. DITE are not extreme haunts. Extreme haunts seek to generate an extreme emotional response among participants. To achieve this goal, extreme haunts use any available means, including physical pain (e.g. electric shocks or forced feeding), to provide the sensation of living a traumatic experience. The focus of these experiences is on the survival of highly intense experiences for all individuals who seek to test their physical and mental limits (Haunting, 2020). On the other hand, DITE are associated with contexts of moderate intensity, and not extreme. DITE do not seek to represent traumatic experiences. In DITE, physical pain is excluded. Minimum physical contact is promoted. Moreover, DITE tend to be more theatrical and cinematographic, involving participants through their plots and aiming for psychological horror to induce fear among participants (Haunting, 2020).

DITE are not haunted house attractions. Haunted house attractions present a clear goal: scare people. To this end, haunted house attractions use several elements to induce fear, including elements usually used in movies and books of horror, such as blood and chainsaws (Clasen et al.,

2019). DITE, in turn, do not seek to induce fear through jump-scares. DITE tend to not use the traditional elements used by horror media. Instead, DITE attempts to induce a psychological-oriented fear by promoting complex and deep plots, including one-on-one interactions between actors and participants. Moreover, while haunted house attractions are shorter in terms of duration (usually up to 15 minutes), DITE experiences can have a duration from 45 minutes up to three hours.

DITE are not escape rooms. Escape rooms are live games where players must find and solve clues to escape a room or a house within a time limit previously agreed (Veldkamp et al., 2020). In DITE, the game element is used to emphasize the consequences of participants' choices to induce fear, being used to engage participants in the plot and to stimulate active participation with the actors, the scenario and the narrative itself.

As so, DITE can be described as a practice of voluntary entertainment that results from the compatible combination of the fundamental characteristics of immersive theatre with the premise, themes and effects of darkness (Belo & Gustavo, 2021; Belo, 2022).

2.2. Darkness and emotions in the contemporary tourist experience

The definition of dark tourism proposed by Ashworth (2008) emphasizes the importance of understanding the reasons that lead individuals to choose to expose themselves to experiences known for being based on elicit dark emotions for purposes of voluntary entertainment, particularly in emotional experiences.

The importance of emotions in tourism has gained attention by researchers to understand consumers' behavior (Gaspar & Costa, 2021). Tourism studies tend to distinguish emotions in two major categories: positive and negative (Chen et al., 2013; Moreno-Lobato et al., 2021). In tourism re-

search, there is a tendency to conceptualize emotional experiences based on the positive emotions, therefore highlighting the management of positive emotions as critical for the success of touristic experiences, with negative emotions emerging in case of decline of the experience's quality (Nawijn & Biran, 2018; Prayag et al., 2013). On the other hand, authors such as Nawijn and Biran (2018) or Oren et al. (2021) underline the importance of also managing negative emotions in contexts of touristic experiences, namely when individuals seek dark elements.

In the discussion of the relationship between darkness and individuals, sensation seeking is accentuated (Hoffner & Levine, 2005). Zuckerman (1996, p. 27) defined sensation seeking as a characteristic that implies *"the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience"*. In Zuckerman's original conception, sensation seeking was associated with optimal levels of individuals' stimulation and excitement, with high sensation seekers reporting greater levels of satisfaction when experiencing greater levels of stimulation and excitement. In this line of thought, high sensation seekers sought negative stimulations, including emotions such as fear, considering that the intensity associated with those emotions contribute to higher levels of excitement.

Recent studies show that high sensation seekers mainly seek the sensation of reward, whether achieved through positive or negative emotions (Zuckerman, 1996). For instance, high sensation seekers can interpret fear as a positive emotion, while low sensation seekers can interpret fear as displeasing. Furthermore, high sensation seekers can present higher coping skills to deal with darkness (Franken et al., 1992). As so, high sensation seekers might be able to enjoy darkness as a positive emotion (Hoffner & Levine, 2005).

One possible way to measure individuals' affective experience is by applying the Positive and Negative Affect Schedule (PANAS). This scale was originally developed by Watson et al. (1988) with the aim of briefly measuring individuals' affective state. The PANAS scale follows the bidimensional model initially purposed by Watson and Tellegen (1985), based on the simultaneous evaluation of the Positive Affect (PA) and the Negative Affect (NA) of individuals at a certain moment. On one hand, an elevated PA reflects a state of subjective well-being, characterized by pleasure, energy and enthusiasm. On the other hand, an elevated NA represents a state of subjective ill-being, including feelings of rage, fear of nervousness (Watson et al., 1988). Watson et al. (1988) validated the scale by measuring each dimension with ten items, on a total of twenty items that compose the scale. Later, Galinha and Pais-Ribeiro (2005) validated the scale to the Portuguese population and Galinha et al. (2014) developed a shorter version of the scale, the PANAS – Reduced Portuguese Version (PANAS-VRP), to be applied in contexts where time might represent a constraint.

One study that applied the PANAS scale in the field of dark tourism was conducted by Oren et al. (2021). This work aimed to explore the emotional experiences of tourists by measuring their affective states after their visit to Auschwitz-Birkenau, the former largest German Nazi concentration camp and extermination center. The results showed that participants simultaneously experienced emotions of both positive and negative dimensions and that both types of emotions could be positively associated with the perceived quality of the experience. These findings emphasized that the bidimensional emotional experienced is critical when visiting dark attractions, demonstrating high levels of both positive and negative affects after the experience.

Andrade and Cohen (2007) also used the PANAS scale to capture both positive and negative feelings stated by participants immediately before and immediately after exposure to a horror movie. Fear-approaching participants reported an increase in both positive and negative affects.

Differences were found regarding sociodemographic variables and dark consumers' characteristics. Hoffner and Levine (2005) point out that several studies show a tendency of individuals who identify themselves as males in appreciating being scared. For instance, a study conducted by Clasen et al. (2018) demonstrates that individuals who identify themselves as males tend to seek fear in comparison to individuals who identify themselves as females, who seem to avoid fear. On the other hand, Clasen et al. (2019) found an equal distribution of gender regarding to fear stance.

Age was also identified as an important sociodemographic variable when considering differences associated with dark consumers' characteristics. The results obtained in both studies developed by Clasen et al. (2018) and Clasen et al. (2019) suggest that the enjoyment in being scared tends to decrease as age increases. In its turn, Hoffner and Levine (2005) notice children tend to be associated with reduced coping skills when dealing with darkness and that horror linking tends to achieve its peak in adolescence, observing a decline after that peak.

3. Methodology

Participants in this study are consumers of DITE in Portugal who were travelling, or willing to travel, specifically to attend such experiences. Self-reported pre-/post-experience questionnaires were completed, immediately before and immediately after exposure to DITE. Given the period considered for data collection, participants were collected from two different DITEs: 'Muzeum' and 'O Matadouro' (The Slaughterhouse). In the DITE entitled 'Muzeum', data collection occurred in June and July of 2019. In the case of the DITE named 'O Matadouro', data was collected in the months of September and October of 2020. Completing both pre- and post-experience questionnai-

res ranged from 5 to 15 minutes each. All participants who accepted to participate in this study were provided with a unique code. This was important to match pre-/post-experience data. After collecting all questionnaires, data was inserted in a database previously prepared. Data was analyzed in the software SPSS IBM, version 27.0.

The pre-experience questionnaire was composed of two sections. To evaluate the effect of DITE on participants' positive and affective states, the PANAS-VRP scale was used. The PANAS-VRP was selected as a psychometric instrument that allows to, simultaneously, measure both positive and negative affects of participants at a given moment, being widely validated by the scientific community to this end. As so, the PANAS scale allows to reliably compare individuals' affective state in different moments, which is coherent with the aims of this study. However, despite the PANAS scale being parsimonious, Thompson (2007) suggested the necessity of developing a reduced scale to be applied in contexts where time might represent a constraint. This premise led Galinha et al. (2014) to develop the PANAS – Reduced Portuguese Version, with the results, obtained sustaining the identification of five items for each dimension, on a total of ten items. While the positive affect was composed of 'interested', 'enthusiastic', 'inspired', 'determined' and 'active', in its turn, the negative affect included the items 'nervous', 'afraid', 'scared', 'guilty' and 'upset'. Each item is reported on a 7-point Likert scale, ranging from 1 (not at all) to 7 (extremely), presenting the degree of intensity participants feel each emotion. The last section of the questionnaire included basic sociodemographic variables, including age and gender.

The post-experience questionnaire also included two sections. The first section accessed the consumer overall satisfaction, measured in a single item (Jarvis et al., 2016; Milman & Tasci, 2018; Prayag et al., 2013) on a 7-point Likert scale, where 1 corresponded to extremely dissatisfied and 7 referred to extremely satisfied. The

second section of the questionnaire measured the positive and negative affects of participants after the experience, using the PANAS-VRP scale to explore the effect of the experience on participants positive and negative affects.

This work relies on validated constructs, i.e. positive affect and negative affect, and uses a reliable scale, i.e., PANAS-VRP, that is typically used in high-quality research studies for the study of emotions in tourism (e.g. Oren et al., 2021). By doing so, this paper aims for a better understanding of DITE's effect on participants in these dimensions, as well as to clarify the association between both positive affect and negative affect and consumer overall satisfaction. By doing so, it intends to contribute to the knowledge on the importance of managing positive and negative emotions, by drawing back conclusions from DITE contexts.

Considering the aims of this paper, the literature review that was carried out led to the formulation of two hypotheses. The first hypothesis aims to verify that both positive and negative affects tend to increase after DITE. To this end, a series of t-tests for independent samples are conducted. The second hypothesis intends to clarify that both positive and negative affects are positively correlated to satisfaction. For this aim, Pearson's correlations are used.

4. Results

4.1. Sample

A total of 428 participants were considered for analysis. The post-experience questionnaire was also completed by 344 participants. A total of 75.6% of participants were collected in the 'Muzeum', while 24.4% were collected in 'O Matadouro'.

As table 1 shows, regarding sociodemographic information, 51.9% of participants identify themselves as females and 48.1% as males. The mean age was 32.0 years old ($\pm$ 8.3 years old), ranging from 18 to 70 years old.

Table 1 | Sociodemographic variables

Variable	N	%
Age	428	100.0
18-30 years old	198	46.3
31-40 years old	181	42.3
41+ years old	49	11.4
Gender	428	100.0
Female	222	51.9
Male	206	48.1

Source: Own elaboration

4.2. The effect of dark immersive theatre experiences on participants' emotions

The means and standard deviations of both positive and negative emotions as they appear in the PANAS scale are presented in table 2. The internal reliability of all pre-/post-experience positive and negative affects was high, ranging from .823 to .905, which indicates a similar theoretical concept.

Two major findings can be underlined. First, participants felt positive emotions in a more significant way, in comparison to negative emotions, both before the experience ($t = 21.655$; $p < 0.001$) and after the experience ($t = -23.027$; $p < 0.001$). A review of the emotions before the experience highlights high levels of interest ($M = 5.76$, $SD = 1.24$) and enthusiastic ($M = 5.63$, $SD = 1.28$) in the positive affect, while the nervous ($M = 4.21$, $SD = 1.82$) stands out in the negative affect. After analyzing the emotions after the experience, the dominant positive emotions are interest ($M = 4.20$, $SD = 1.77$) and inspired ($M = 4.04$, $SD = 1.71$) and the most expressive negative emotions are nervous ($M = 2.32$, SD $= 1.66$), scared (M

= 2.28, SD = 1.69) and afraid (M = 2.23, SD = 1.68).

Note that nine of the ten measured positive emotions received a mean above the midpoint of the scale (>3.5), indicating relatively high values and an overall strong positive emotional arousal.

On the other hand, seven of the ten measured negative emotions received a mean below the midpoint of the scale, indicating relatively low values for most of the negative emotions and an overall weak negative emotional arousal.

Table 2 | Means of the PANAS-VRP scale items

Pre-experience positive affect	M	SD	Post-experience positive affect	M	SD
Interested	5.76	1.24	Interested	4.20	1.77
Enthusiastic	5.63	1.28	Enthusiastic	3.39	1.66
Inspired	4.13	1.64	Inspired	4.04	1.71
Active	4.82	1.57	Active	3.70	1.84
Determined	4.89	1.84	Determined	4.89	1.84
M = 5.05, SD = 1.13; α = .823			M = 3.96, SD = 1.47; α = .905		
Pre-experience negative affect	**M**	**SD**	**Post-experience negative affect**	**M**	**SD**
Nervous	4.21	1.82	Nervous	2.32	1.66
Afraid	3.79	1.86	Afraid	2.23	1.68
Scared	3.68	1.90	Scared	2.28	1.69
Guilty	1.76	1.53	Guilty	1.44	1.11
Upset	2.71	1.92	Upset	1.82	1.46
M = 3.23, SD = 1.52; α = .895			M = 2.02, SD = 1.28; α = .891		

Source: Own elaboration

The second most prominent finding is that the data revealed different changes in the positive and negative states as a result of participants' exposure to DITE, with participants reporting a decrease in both positive (t = 15.007; p < 0.001) and negative emotions (t = -13.362; p < 0.001), as demonstrated in figure 1, with mean values decreasing significantly for both positive (M = 5.05, SD = 1.13 to M = 3.96, SD = 1.47) and negative affects (M = 3.23, SD = 1.52 to M = 2.02, SD = 1.28).
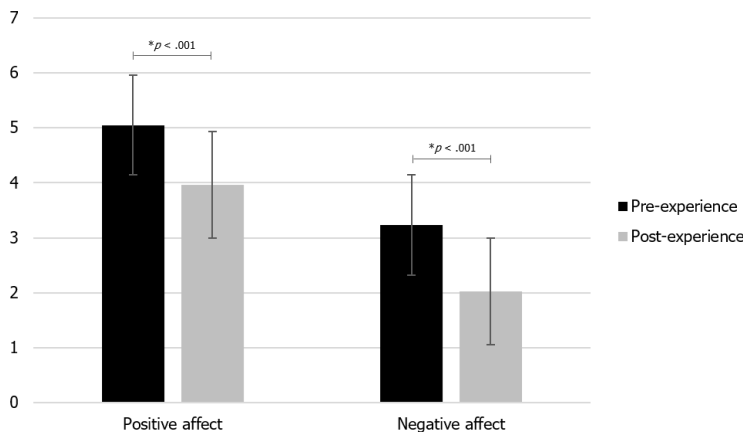

Figure 1 | The effect of DITE on participants' emotions
Source: Own elaboration

4.3. Emotions and consumer overall satisfaction

Participants rated the degree of their overall satisfaction with the experience in the positive half of the scale ($M = 4.80$, $SD = 1.33$). Table 3 shows the relationship between the positive and negative affects and consumer overall satisfaction. After conducting a series of Pearson's correlation tests, the analysis indicates that the consumer overall satisfaction was positively correlated with both post-experience positive and the negative affects. The highest correlation was with positive emotions ($r = .727$, p <.001) in comparison to negative emotions ($r = .341$, $p <.001$). No statistically significant differences were found between consumer overall satisfaction and pre-experience positive and the negative affects.

Table 3 | Correlations between the positive and negative affects and consumer overall satisfaction

		Pre-experience positive affect score	Post-experience positive affect score	Pre-experience negative affect score	Post-experience negative affect score
Consumer overall satisfaction	*r*	-.042	**.727****	.088	**.341****
	p	.438	**< .001**	.105	**< .001**

Source: Own elaboration

4.4. Emotions and sociodemographic variables

4.4.1. Emotions and age

After examination of emotions with age, Kruskal-Wallis H tests support that there are two noteworthy results to be discussed, as shown in figure 2. First, participants between 18 and 30 years old seem to report higher levels of negative emotions, both before ($H = 12.35$, $p = .002$) and after DITE ($H = 9.93$, $p = .002$). Second, participants older than 41 years old seem to generally rate the lowest values, indicating an overall weak emotional arousal.
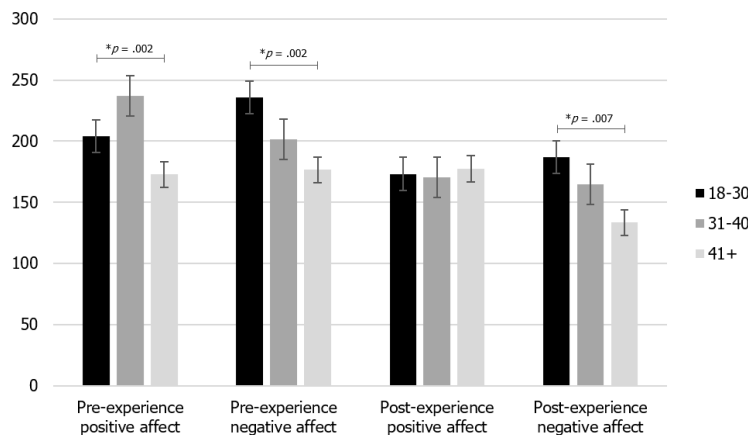

Figure 2 | The effect of DITE on participants' emotions by age group
Source: Own elaboration

4.4.2. Emotions and gender

After conducting a series of Mann-Whitney U tests, our findings sustain that females report higher levels of negative emotions than males, both before ($U = 12026.50$, $p = 0.002$) and after DITE ($U = 18870.50$, $p = .002$), as illustrated in the following figure 3. On the other hand, no significant differences in gender were found regarding positive emotions.
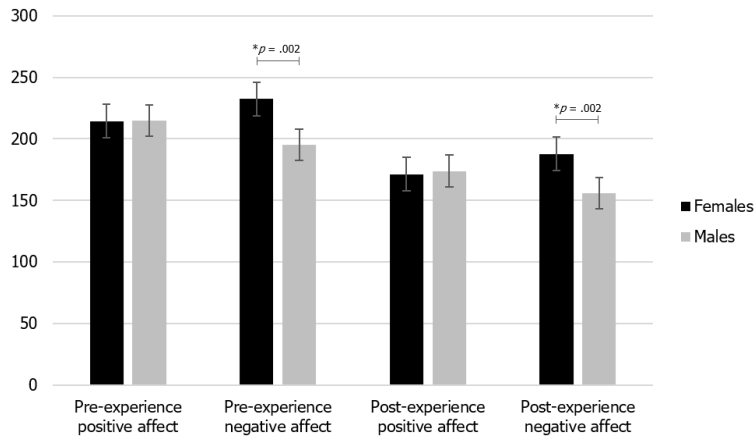

Figure 3 | The effect of DITE on participants' emotions by gender
Source: Own elaboration

5. Conclusion

This study addresses the management of positive and negative emotions in DITE and its relationship with consumer overall satisfaction. The findings suggest that positive emotions seem to be greater experienced in such contexts, in comparison to negative emotions. In addition, positive emotions were found to have a strong positive association with consumer overall satisfaction. Furthermore, both positive and negative emotions tend to decrease from a moment before to a moment after participants' exposure to DITE. Lastly, younger participants seem to report an overall strong negative emotional arousal, while older participants rate an overall weak emotional arousal. These findings have both theoretical and practical implications, as will be discussed below.

This research uses the PANAS scale to access the positive and negative affects of individuals in a context of dark experiences. This bi-dimensional approach that is usually used in tourism research (Chen et al., 2013; Moreno-Lobato et al., 2021) se-

ems to be adequate for accessing and understanding participants' satisfaction, with high internal reliability indicating similar theoretical constructs.

The results differ from previous works in the field of dark tourism. In the study conducted by Oren et al. (2021), it was found that tourists in Auschwitz-Birkenau reported a weak positive association between both positive and negative dimensions with the perceived quality of the experience. In this study, not only it was possible to verify that the negative dimension was weakly positively associated with consumer overall satisfaction, but it was also possible to identify a strong positive association between positive dimension and consumer overall satisfaction. In fact, although within the scope of dark tourism, the contexts of DITE and Auschwitz-Birkenau are obviously quite different in several ways, reinforcing the adoption of the concept of dark tourism as an umbrella term (Light, 2017). As such, different results are expected. The main divergence was the emphasis on the positive emotions in DITE, which is coherent

with a context of light entertainment associated with fun factories (Stone & Sharpley, 2008).

Moreover, our data is not aligned with Andrade and Cohen's (2007) findings, with the report of a significant increase of both positive and negative affects among fear-approaching participants when watching a horror. In DITE, the opposite effect seems to occur, with participants reporting a feeling of catharsis in both emotions. However, watching a horror movie, although being thematically coherent with darkness, is not a dark tourism experience. Therefore, the difference of results is predictable.

With these findings, this study did not reject the first hypothesis established, with analysis not verifying an increase of both positive and negative affects after participants' exposure to DITE. On the other hand, it was possible to reject the second hypothesis, clarifying that both positive and negative affects are positively correlated to consumer overall satisfaction.

Focusing on the results associated with sociodemographic variables, the observed tendency for females to report higher levels of negative emotions are clearly in line with the findings of Clasen et al. (2018) and Hoffner and Levine (2005), emphasizing that males might show a tendency to seek out fear and more intense emotions in comparison to females, who might demonstrate a tendency not exposing themselves as much during the experience.

Furthermore, the results obtained in the studies conducted by Clasen et al. (2019) Clasen et al. (2018) and Hoffner and Levine (2005), suggested that the enjoyment of being scared tends to decrease as age increases, justified by improved coping skills to deal with darkness. The data of this research seems to confirm this idea by showing that younger participants, who would be associated with lower coping skills, report an overall strong negative emotional arousal, while older participants, who would be related to higher coping skills, rate an overall weak emotional arousal.

The novel application of the PANAS-VRP to quantitatively measure participants' states before and after DITE is a contribution to enhancing participants' satisfaction. Therefore, the results of this study can be used by DITE managers to improve their experiences, namely by focusing on the management of positive emotions. Moreover, DITE managers are provided with information related to sociodemographic backgrounds, which might be useful for future segmentation strategies.

This emphasized importance given to the management of positive emotions in DITE reinforces the subjectivity and plurality of the contemporary touristic experience (Joaquim et al., 2019), with individuals having the opportunity to consume anything (WTO, 2020), including the voluntary consumption of dark emotions for the purposes of positive and light entertainment (Ashworth, 2008). In fact, the desire to feel emotions is reflected in Zuckerman's (1996) conception of sensation seeking, with individuals seeking stimulation and excitement from both positive and negative emotions. In DITE, darkness is consumed mainly as positive, leading to great levels of stimulation and excitement, which, in turn, can enhance satisfaction. As so, DITE's participants seem to experience fear as a positive emotion, leading to states of interest and enthusiasm, as posed by Hoffner and Levine (2005) and Zuckerman (1996).

As this study's findings are referring to two specific DITE, caution is advised regarding its projection to further contexts. Future studies should attempt to reproduce this study's findings to other dark tourist products.

Acknowledgement

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Appendix

Appendix 1 | Descriptive statistics

No.	Variable	N	Mean score	Standard deviation	Minimum	Maximum
I.1	Interested (pre-experience)	428	5.76	1.235	1	7
I.2	Nervous (pre-experience)	428	4.21	1.821	1	7
I.3	Enthusiastic (pre-experience)	428	5.63	1.276	1	7
I.4	Afraid (pre-experience)	428	3.79	1.860	1	7
I.5	Inspired (pre-experience)	428	4.13	1.642	1	7
I.6	Determined (pre-experience)	428	4.82	1.572	1	7
I.7	Scared (pre-experience)	428	3.68	1.909	1	7
I.8	Guilty (pre-experience)	428	1.76	1.525	1	7
I.9	Active (pre-experience)	428	4.89	1.575	1	7
I.10	Upset (pre-experience)	428	2.71	1.918	1	7
III.1	Consumer overall satisfaction	344	4.80	1.332	1	7
IV.1	Interested (post-experience)	344	4.46	1.632	1	7
IV.2	Nervous (post-experience)	344	2.32	1.660	1	7
IV.3	Enthusiastic (post-experience)	344	4.20	1.773	1	7
IV.4	Afraid (post-experience)	344	2.23	1.681	1	7
IV.5	Inspired (post-experience)	344	3.39	1.655	1	7
IV.6	Determined (post-experience)	344	4.04	1.706	1	7
IV.7	Scared (post-experience)	344	2.28	1.699	1	7
IV.8	Guilty (post-experience)	344	1.44	1.110	1	7
IV.9	Active (post-experience)	344	3.70	1.842	1	7
IV.10	Upset (post-experience)	344	1.82	1.455	1	7