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An Investigation of the Influence of Chronotype and Time-of-Day on Travellers' Behavioural Intentions and Overall Satisfaction With a Tourist Destination

This two-study research investigates the influence of chronotype (i.e., sleep rhythms) and time-of-day on tourist behavioural intentions and overall satisfaction with a tourist destination. It demonstrates that morningness is positively related to the length of trip planning, the likelihood of visiting, the likelihood of recommending as well as the monetary value of spendings during the visit, and is negatively related to the frequency of visits to a tourist destination. Moreover, time-of-day moderates the influence of chronotype on the likelihood of visiting a tourist destination.

These findings have implications for tourists who may wish to synchronize the timing of their decisions and behaviours to their chronobiological nature. They also suggest using chronotype as a basis for segmentation. Adopting a different approach with morning and evening tourists could contribute to increase the “contextual perceived value” offered by tourist destinations to their travellers to create a sustainable non-price competitive advantage.

Introduction

Time is the only finite resource nobody can get more of, regardless of one's finances, status or life situation. There is thus a strong interest from researchers from a wide range of disciplines such as biology (ex.: Reddy and O'Neill, 2009) and psychology (ex.: Díaz-Morales, 2007) to understand individual differences regarding time management and sleeping patterns, and their influence on behaviours.

Chronotype

From a biological standpoint, individuals differ in their chronotype (also called *diurnal preference*), a trait that reflects their circadian rhythms (from the Latin “circa”: *about* or *approximately*, and “diem”: *day*) (Horne, 2006; Reddy and O'Neill, 2009). These physical, behavioural and psychological changes are driven by the internal biological clock and follow roughly a 24-hour cycle (Reddy and O'Neill, 2009).

Chronotype ranges on a continuum from extreme morningness to extreme eveningness, with most people falling in the middle (Natale and Cicogna, 2002). Individuals exhibiting extreme

morningness, also called *morning persons* or *larks*, rise in the early hours of the morning and go to bed early at night, while those exhibiting extreme eveningness, also called *evening persons* or *owls*, rise in the late hours of the morning and go to bed late at night (Horne and Österberg, 1976, 1977).

Time-of-day

Researchers must consider both individual and situational variables to explain consumer and tourist behaviours (Engel, Kollat and Blackwell, 1969). As such, the investigation of time-of-day, a situational variable, can “substantially enhance the ability to explain and understand consumer behaviour acts” (Belk, 1975, p.157) and provide important insights for segmentation purposes (Engel, Kollat and Blackwell, 1969; Dickson, 1982). Indeed, “person-situation segmentation is viable when different groups have distinctly different demand schedules.” (Dickson, 1982, p.58).

Tourist Destinations

When travelling, irregular scheduling, jet lag, daylight, external time pressure from travelling companions and set times imposed by accommodations, meetings, attractions and the like, requires the biological clock to synchronize rapidly to external cues. Since chronotype plays an important role in the synchronization process, it is expected to influence consumer behavioural intentions and overall satisfaction within the context of tourism. At the same time, this disruption from one’s regular life offers travellers the opportunity, to some extent, to plan their trip to best fit their circadian rhythms.

To succeed, more than ever, tourist destinations need to segment their market and go after tourists who represent the best fit for their unique selling proposition, and tailor their offering to the specific needs, expectations and time preferences of their target market. To do so, tourist destinations need to look beyond basic psychographics (i.e., attitudes, beliefs, values, motivations and behaviours) and look for better ways to match “the right consumer with the right [experience] at the right time” (common wisdom), since timing is key.

Therefore, the present research investigates the influence of chronotype and time-of-day on consumer behavioural intentions and overall satisfaction within the context of tourism.

Literature Review

Travellers' Behavioural Intentions and Overall Satisfaction With a Tourist Destination

Consumer overall satisfaction with a tourist destination, which refers to the emotional and cognitive evaluation of the overall cumulative experiences with a tourist destination (Giese and Cote, 2000; Pizam, Neuman and Reichel, 1978), is considered a broader concept than the sum of the satisfaction with the individual attributes of a destination (Bigné Alcañiz, Sánchez García and Sanz Blas, 2005; Spreng, MacKenzie and Olshavsky, 1996). It has been found to be an antecedent of behavioural intentions (Cronin, Brady and Hult, 2000), such as revisiting the destination, remaining loyal and providing positive word-of-mouth recommendations (Bigné Alcañiz, Sánchez García and Sanz Blas, 2005; Yoon and Uysal, 2005).

The present research focuses on overall satisfaction with the destination, likelihood of visiting the destination, likelihood of recommending the destination and length of trip planning, as dependent variables.

Chronotype

Ever since the 1960s, researchers have been studying the relationship between chronotype, personality traits and behaviours (Blake, 1967; Colquhoun, 1960; Colquhoun and Corcoran, 1964). Several relationships have been found, regardless of the duration of sleep (Soehner, Kennedy and Monk, 2007).

Morning persons are more thought-guided than owls (Díaz-Morales, 2007) and are more likely to consider the future consequences of their actions (Stolarski, Ledzińska and Matthews, 2013).

Morningness is related to consciousness (Hogben, Ellis, Archer and von Schantz, 2007), which means being “goal-directed, painstaking, impulse-controlled, and careful,” (Vollmer and Randler, 2012, p.738), while eveningness is related to impulsivity (Eysenck and Folkard, 1980; Matthews, 1988). Therefore, being more thought-guided and conscious than owls, larks are expected to plan their trip for a longer period ahead of their departure. The following hypothesis is thus proposed:

H1: Morningness will be positively associated with the length of trip planning.

Morningness is also correlated with mindfulness (Carciofo, Du, Song and Zhang, 2014), which corresponds to “the state of being attentive to and aware of what is taking place in the present” (Brown and Ryan, 2003, p. 822). Being more mindful than owls, larks are expected to be more overly satisfied with their experience at the tourist destination they visited.

Eveningness is associated with novelty seeking (Adan, Lachica, Caci and Natale, 2010; Díaz-Morales, 2007) and sensation-seeking (Muro, Gomà-i-Freixanet, Adan and Cladellas, 2011). They are expected to be less loyal towards the tourist destination by frequenting it less often, as well as less likely to consider visiting or recommending it.

Therefore, the following hypotheses are proposed:

H2: Morningness will be associated with greater overall satisfaction, likelihood of visiting and likelihood of recommending the tourist destination than eveningness.

H3: Morningness will be associated with greater frequency of visits to the tourist destination than eveningness.

It is expected that the monetary value of spendings during the last visit to the destination is negatively related to morningness. Indeed, evening persons are more impulsive (Adan, Natale, Caci and Prat, 2010; Caci, Robert and Boyer, 2004) and have lower self-control (Digdon and Howell, 2008; Díaz-Morales, 2007), and this self-control ability, or lack thereof, is assumed to exert a significant influence on spendings (Beatty and Ferrell, 1998; Rook and Fisher, 1995; Rook and Hoch, 1985). Therefore, the following hypothesis is proposed:

H4: Eveningness will be associated with higher monetary value of spendings during the last visit to the tourist destination than morningness.

Moderating Influence of Time-of-day

The morning represents the optimal time-of-day for morning persons, while it is the evening for evening persons (Natale, Alzani and Cicogna, 2003). These periods are characterized by optimal cognitive processing (Martin and Martin, 2013; Chebat, Limoges and Gelinas-Chebat, 1997) and superior intellectual performance (Hornik, Ofir and Shaanan-Satchi, 2010; Schmidt, Collette, Cajochen and Peigneux, 2007). This phenomenon is referred to as the *synchrony effect* (May,

Hasher and Stoltzfus, 1993; May and Hasher 1998).

The following hypothesis is thus proposed:

H5: Morningness (eveningness) will be associated with greater (lower) overall satisfaction, likelihood of visiting and likelihood of recommending the tourist destination in the morning than in the evening.

Objective

This research fits into the *Transformative Consumer Research* perspective, which aims at optimizing consumers' decision quality and protecting their interests (Mick, Pettigrew, Pechmann and Ozanne, 2011). It is hoped that the results of this research will help consumers understand some of the factors influencing their behavioural intentions and overall satisfaction with tourist destinations.

More specifically, this research aims at contributing to the limited theoretical and practical knowledge regarding the relationship between chronotype and consumer behavior within the context of tourism. It thus intends to provide a new basis for segmentation, by shedding light on a construct neglected in the marketing and tourism literature but receiving increasing attention in other fields such as biology and psychology.

Measures

Given the unidimensionality of the construct of each dependent variable, single-item measures were used to assess the "overall satisfaction with the destination", the "likelihood of visiting" the destination for a leisure trip within the next two years and the "likelihood of recommending" the destination for a leisure trip to family, friends and/or colleagues. The "length of trip planning" was measured as the number of days the tourist planned his/her trip for prior to the departure, and the "frequency of visits" was measured as the number of times that the tourist had visited the destination in the past five years for a leisure trip. The "overall monetary value" of all expenses at the destination for the last leisure trip was calculated per person in US dollars (study 1) and Canadian dollar (study 2). The currency exchange rate (at the time of the visit) was used to convert spendings calculated in another currency (when applicable). Moreover, "chronotype" was measured using the reduced morningness-eveningness (rMEQ) scale (Adan and Almirall, 1991)

Methodology

Two studies were conducted, each using a survey methodology and testing all five hypotheses. Québec City area, an international tourist destination located in Eastern Canada, was selected as the leisure destination under study due to its brand awareness and notoriety.

Study 1 focuses on 1982 tourists from the United States who had visited the Québec City area at least once in the past, regardless of the year of their last trip. The data was collected through a third-party provider's panel.

Study 2 focuses on 1483 tourists who had visited the Québec City area for leisure purposes within the prior eight months. Participants were invited to participate in the study by receiving a bilingual coupon (French/English) from one of about 100 partners of Québec City Tourism (i.e., restaurants, hotels and attractions).

Results

Individual linear regression analyses were conducted to test the first four hypotheses, and an analysis of variance was conducted to test the fifth one. All analyses presented were initially conducted while controlling for the influence of age and gender. Given that these covariates did not impact the conclusions, they were not included in the analyses reported for simplicity purposes.

Due to outliers and incomplete responses, some analyses were not performed on the full sample.

A summary of the results is presented in the table below.

Table 1: Summary of the Findings

Hypothesis	Level of Support*	
	Study 1	Study 2
H1: Morningness will be positively associated with the length of trip planning.	Supported F(1, 1980) = 5.62, p < .05 (B = 1.22, p < .05)	Supported (among residents of the province de Québec) F(1, 734) = 8.40, p < .01 (β = 2.12, p < .01)
H2: Morningness will be associated with greater overall satisfaction, likelihood	Not supported	Partially supported: Morningness positively related to the likelihood of visiting

Hypothesis	Level of Support*	
	Study 1	Study 2
of visiting and likelihood of recommending the tourist destination than eveningness.		F(1, 1373) = 4.30, $p < .05$ ($B = .05$, $p < .05$) Morningness marginally positively related to the likelihood of recommending F(1, 1471) = 3.03, $.1 > p > .05$ ($\beta = .02$, $.1 < p < .05$)
H3: Morningness will be associated with greater frequency of visits to the tourist destination than eveningness.	Not supported (contrary): Morningness negatively related to the frequency of visits F(1, 1979) = 4.19, $p < .05$ B = -.04, $p < .05$	Not supported
H4: Eveningness will be associated with higher monetary value of spendings during the last visit to the tourist destination than morningness.	Not supported (contrary): Morningness positively related to the monetary value of spendings F(1, 1952) = 5.00, $p < .05$ B = 16.44, $p < .05$	Not supported
H5: Morningness (eveningness) will be associated with greater (lower) overall satisfaction, likelihood of visiting and likelihood of recommending the tourist destination in the morning than in the evening.	Not supported (contrary): In the morning, morningness marginally negatively related to the likelihood of visiting F(1, 562) = 3.81, $.1 > p > .05$ ($B = -.07$, $.01 > p > .05$)	Not supported

* Supported: $p < .05$; Marginally supported: $.1 > p > .05$; Not supported: $p > .05$

Discussion

Hypothesis 1: Chronotype and Length of Trip Planning

In both studies, chronotype was positively associated with the length of trip planning. As predicted, the more prone to morningness individuals were, the longer in advance they were likely to have planned their trip. It was consistent with previous research which found that morningness is related to consciousness (Hogben, Ellis, Archer and von Schantz, 2007),

planning, impulse-control and aversion to risk (Muro, Gomà-i-Freixanet, Adan and Cladellas, 2011).

Hypothesis 2: Chronotype and Satisfaction

In neither of the studies was chronotype related to the overall level of satisfaction with the tourist destination. The personal experience of tourists with their travelling companions as well other factors such as the weather and the level of service (i.e., at the accommodations, restaurants and activities) could have affected their perception of the tourist destination and thus their overall level of satisfaction. As such, it could have taken away some of the explanatory power of chronotype as a predictor of overall satisfaction with the tourist destination.

Hypothesis 3: Chronotype and Behavioural Intentions

In study 2 only, morningness was found to be related to a greater likelihood of visiting and marginally related to a greater likelihood of recommending the tourist destination. This finding implied that individuals prone to morningness were somewhat more loyal consumers. It was consistent with previous research which found that morningness is negatively related to novelty seeking (Adan, Lachica, Caci and Natale, 2010; Díaz-Morales, 2007) and sensation-seeking (Muro, Gomà-i-Freixanet, Adan and Cladellas, 2011).

These significant relationships between morningness and both frequency of visits and monetary value of spendings suggested that morning tourists could have been willing to spend more to experience the destination to its fullest extent by staying longer in one place. Indeed, in study 1, morning tourists spent on average significantly more nights at the last destination they visited ($M = 8.11$, $SD = 8.21$, $n = 838$) than evening ones ($M = 6.01$, $SD = 4.80$, $n = 208$, $p < .001$).

To the contrary, it is possible that evening tourists travelled to the destination more often but for shorter periods each time, thereby negatively impacting the amount of money they were willing to dedicate to each trip. The higher frequency of travels to the tourist destination among evening tourists could also be explained by their inclination for novelty-seeking (Adan, Lachica, Caci and Natale, 2010; Díaz-Morales, 2007) and sensation-seeking (Muro, Gomà-i-Freixanet, Adan and Cladellas, 2011), which they might fulfill through their travels.

Hypothesis 4: Chronotype, Time-of-Day, Behavioural Intentions and Satisfaction

In study 1, at morning time, morningness was marginally negatively related to the likelihood of visiting the tourist destination. As demonstrated by previous research, morning represents the optimal time-of-day for morning persons and the sub-optimal time-of-day for evening persons (Natale, Alzani and Cicogna, 2003). The findings suggested that the likelihood of visiting the tourist destination might be expressed impulsively at sub-optimal times-of-day.

Limitations

The research has two main limitations. First, all the dependent variables were self-reports rather than observations, and some of them were behavioural intentions rather than actual behaviours. This research could be replicated using a longitudinal observation methodology and multiple tourist destinations to strengthen the findings. Second, in future studies, potential extraneous variables (ex.: quality of service offered by the accommodations, restaurants and activities, experience with the travelling companions, etc.) could be measured and introduced as covariates to reduce the effect of these potential confounding variables and to increase the explanatory power of chronotype as a predictor of behavioural intentions and overall satisfaction.

Managerial Implications

Tourist

Tourists may differ in terms of planning and behavioural intentions based on their chronotype. Those exhibiting a higher level of morningness are likely to plan their trip for a longer period of time ahead of their departure and to express a stronger intention to both visit the destination and to recommend it to others than those exhibiting a higher level of eveningness.

Tourists could synchronize the timing of their decisions and behaviours to their chronobiological nature. Individuals prone to eveningness should be aware that, in the morning, they may be more likely to express higher levels of behavioural intentions, since it represents a sub-optimal time-of-day for them.

Tourist Destinations

Chronotype could be used as a basis for segmentation. The fact that morningness was found to be negatively related to the frequency of visits and positively related to the monetary value of spendings during the last visit suggests that morning and evening tourists travel for different

reasons and take different types of trips. This proposition is supported by the fact that morning tourists spent on average significantly more and stayed longer than evening ones at the tourist destination.

Adopting a different approach with morning and evening tourists could contribute to increase the “contextual perceived value” offered by tourist destinations to their travellers (Lee and Jun 2007), thereby contributing to the creation of a sustainable non-price competitive advantage. To do so, the timing of promotional and informational efforts could be tailored to the chronotype of the target markets, a concept referred to as “target-oriented marketing” (Merz, Hanglberger, and Rucha 2008). To help with this strategy and simplify the task of identifying travellers’ chronotype, age could be used as a proxy for chronotype (Dacko, 2012) given its strong positive correlation with morningness (Adan 1992; Kramer, Kerkhof, and Hofman 1999).

Public Policy

The findings also pave the way for future public policy to protect at-risk consumers and travellers at sub-optimal chronobiological times-of-day. At-risk evening consumers should not be exposed to travel-related temptations in the morning, since they could be more likely to express a desire to visit the destination at this time-of-day.

Theoretical Implications

The findings contribute to the limited theoretical knowledge regarding the relationship between chronotype and tourist behaviours. It was demonstrated that morningness is positively related to the length of trip planning, the likelihood of visiting, the likelihood of recommending as well as the monetary value of spendings during the last visit to the tourist destination, and is negatively related to the frequency of visits to the tourist destination. Moreover, time-of-day moderates the influence of chronotype on the likelihood of visiting the tourist destination since, in the morning, morningness is marginally negatively related to the likelihood of visiting the tourist destination.

Future Research

Further research should be conducted to investigate the full implication of chronotype and time-of-day on the preferences and behaviours of travellers at each stage of their consumer journey. The motivations, profiles and preferred activities of travellers based on their chronotype should

be considered. Other studies should also be conducted to understand the influence of chronotype on behaviours and decisions in other contexts including food, sports, shopping, time-management, etc.

Conclusion

Chronotype and time-of-day influence behavioural intentions, as well as the frequency of visits to the tourist destination and the monetary value of spendings during the trip. Since time is the only finite resource nobody can get more of, regardless of one's finances, status or life situation, future research should further investigate how both chronotype and time-of-day impact a wide range of tourist behaviours.

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