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Preventing tourists from canceling in times of crises

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Preventing Tourists from Canceling in Times of Crises

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Abstract

Tourism destinations experiencing a crisis are vulnerable to trip cancellations and sudden drops in demand. Little is known about trip cancellations and how to prevent them. Specifically, it is unclear whether the effectiveness of different prevention approaches varies across crises and tourists segments. Using a conjoint design, the present study investigates the comparative stated effectiveness of different prevention approaches in situations where different crises hit a destination. Results indicate that certain prevention actions indeed have the potential to reduce cancellations. The most effective approach is change of accommodation – especially so when combined with an upgrade – followed by information updates and finally the provision of security devices or security staff. The effectiveness of approaches varies across tourists and crises.

Keywords: travel cancellations; crisis management; conjoint analysis

Introduction

Extreme event circumstances can have devastating effects on regions heavily reliant on tourism. For example, tourism is Indonesia's growth engine and the second largest foreign exchange earner after oil and gas (The World Bank, 2004). On 12 October 2002, the Bali bombings caused the single largest drop in international tourism demand in the history of this island (Darma Putra & Hitchcock, 2006). The number of tourist arrivals in the six months following the Bali bombings declined to less than half (43%) of the number of arrivals in the six months prior to the bombing (Pambudi, McCaughey & Smyth, 2009). By 21 October, 40% of the Australian bookings with the national carrier Garuda were canceled and 2,000 tourists shortened their holiday (Henderson, 2003). Hotel occupancy dropped sharply and many tourism-related jobs were cut (Hitchcock & Darma Putra, 2005). The World Bank (2004) estimates that one-third of workers were affected by job losses and up to three-quarters of hotel workers were either working on reduced shifts or were temporarily redundant.

Recently, the terrorist attack in Tunisia led to the evacuation of tourists by major holiday agencies as well as cancellation of all bookings in the ten days following the attack (Burrows & Hutchinson, 2015; Calder, 2015). Cancellations of bookings made for the entire summer season were facilitated free of charge (Calder, 2015). The tourism industry is an important

economic driver in Tunisia, contributing more than 15% to the country's GDP and supporting 14% of total employment (The World Travel & Tourism Council, 2015).

According to Sönmez (1998), terrorism and political instability are strongly linked and both have devastating effects on tourism. Terrorism takes place quickly and is immediately and intensely covered by media. Political instability has long-term effects representing “an enduring barrier to international tourism” (Sönmez, 1998, p.421). For example, the Middle East is considered risky due to ongoing conflicts in the region (Mansfeld, 1996; Sharifpour, Walters & Ritchie, 2014). International tourist arrivals to this region have been adversely affected (Hall & O'Sullivan, 1996; Mansfeld, 1996). The average annual growth of international tourist arrivals (2005-2013) in the Middle East (4.5%) is less than that of other emerging regions including the Asia Pacific (6.2%) and Africa (6.1%) (UNWTO, 2014).

The 2011 Christchurch earthquake – the second deadliest natural disaster to hit New Zealand – has also adversely affected the local tourism industry. Annual international tourist demand in Canterbury dropped by 73% (Christchurch & Canterbury Tourism, 2012; Orchiston, Prayag & Brown, 2016). Tourism is the third largest economic sector in the Canterbury region (Christchurch & Canterbury Tourism, 2012) and the loss of income due to cancellations and fee refunds forced many businesses to seek government assistance (Becken, 2013).

According to Hall (2010), financial and political crises have had the strongest effects on international tourist arrivals between 1970 and 2010. Natural disasters have also been consistently identified by researchers as a risk factor affecting travelers' decisions (Law, 2006). The present study focuses on political instability, natural disasters and terrorism and asks how these crises affect travelers' decision making. Little is known about why tourists cancel bookings and even less how this can be prevented. The present study contributes to filling this knowledge gap. Specifically, the following research questions are investigated:

- 1) Can cancellations due to crises at the destination be prevented?
- 2) Does the effectiveness of prevention approaches depend on the nature of the crisis?
- 3) Does the effectiveness of approaches vary across tourists?

Findings contribute to filling a critical knowledge gap in tourist decision making. They also enable destination managers and marketers to manage a crisis event more effectively and target appropriate groups of people with specific strategies to prevent them from canceling.

Literature review

The tourism literature identifies a number of risks associated with tourism including terrorism, natural disasters, political instability, health, crime, financial, and social risks (Roehl & Fesenmaier, 1992; Maser & Weiermair, 1998; Sönmez & Graefe, 1998a, 1998b; Faulkner, 2001). Tourists choose to travel to low risk destinations or destinations perceived to be less risky (Sönmez & Graefe, 1998b; Law, 2006). Tourists perceive travel risks differently (Floyd & Pennington-Gray, 2004). Asian tourists, for example, perceive risks and their magnitude of threat higher than Western tourists (Law, 2006). Risk perceptions affect travel decision making (Roehl & Fesenmaier, 1992; Sönmez & Graefe, 1998b; Sönmez, Apostolopoulos & Tarlow, 1999). The occurrence of extreme events followed by media sensationalization negatively impact perceptions of safety and security of destinations (Sönmez & Graefe, 1998b) leading to different reactions: some tourists do not alter their travel plans, some change them, some delay them and some cancel (Hajibaba, Gretzel, Leisch & Dolnicar, 2015).

In a study by Valencia and Crouch (2008), the majority of respondents indicated that they would cancel or postpone the trip to their planned destination if a bombing had occurred (45% would cancel/19% would postpone) or a hurricane had hit (49%/36%). Law (2006) finds that most tourists – especially Asian tourists – are likely to change their travel plans when faced with a risky situation at destination. Hajibaba and Dolnicar (2015) conclude that the majority of respondents would cancel their trip when faced with a terrorist attack or an earthquake.

Tourists are either risk-neutral, risk avoiders or risk takers (Moutinho, 1987). Tourist's risk taking is an important predictor of cancellation behavior in a crisis situation (Hajibaba & Dolnicar, 2015). Hajibaba, Gretzel, Leisch and Dolnicar (2015) identify risk propensity as an explanation for tourists' crisis-resistance behavior. According to Kozak, Crofts and Law (2007) people from risk-tolerant cultures are less likely to change travel plans.

While there is some understanding on how tourists (intend to) react when an unexpected crisis hits at the destination of their choice, little is known about how to prevent cancellations. A few theories and studies can be used to identify potential approaches. For example, Thaler (1980) finds that prior monetary investments make consumers more willing to engage in an activity, even if risky. Park and Jang (2014) find cancellation charges to have a negative effect on tourists' intentions to cancel a trip. These findings suggest that pricing or the timing of payments being made could be modified preventatively in order to reduce the risk of cancellations.

Previous research emphasizes the importance of post-crisis communication and the effect it has on consumers' perceptions and ultimately the organizational reputation (Coombs, 2007). Coombs and Holladay (2008) argue that organizations have to communicate instructing information (how to protect oneself from crisis) as well as adjusting information (help to cope psychologically with the crisis) with customers after a crisis. The lack of information in a product-harm crisis may lead consumers to stop using a product (Siomkos & Kurtzward, 1994).

According to Roselius (1971), buyers – when faced with a risky situation – can engage in different risk reduction strategies: (1) reducing risk by decreasing the probability that purchase will fail or by reducing the severity of real or imagined loss suffered if the purchase does fail, (2) shift from one type of perceived loss to one for which they have more tolerance, (3) postpone the purchase, or (4) make the purchase and absorb the unresolved risk. Devices or actions can be initiated – either by the buyer or by the seller – in order to conduct the first two risk reduction strategies (Roselius, 1971). For example, information (search) is a way of reducing the probability that a purchase will fail. Businesses (especially those facing a crisis) can engage in different risk reduction strategies such as special offers, guarantees and informative advertising which will affect consumers' perceptions of the quality of the product (Mitchell & Boustani, 1994; Byzalov & Shachar, 2004; Zhao, Zhao & Helsen, 2011).

Mitchell (1993) argues that post-purchase risk reduction strategies are closely related to Festinger's (1957) cognitive dissonance theory and mostly attempt to reduce psychological or financial loss. This occurs when the consumer has second thoughts or doubts after the purchase decision has been made. Tourists faced with a crisis at the destination of their choice may be experiencing such post-purchase dissonance. Those tourists who cancel experience sufficient post-purchase dissonance to do so (Donnelly Jr & Ivancevich, 1970). Cognitive dissonance theory thus leads to the possibility of reducing cancellations by attempting to help tourists with the reduction of their personal feelings of cognitive dissonance. This could be achieved, for example, by providing additional – more consonant – information from formal and informal sources (Mitchell & Boustani, 1994).

Possible actions to prevent cancellations mentioned specifically in the tourism literature include the restoration of confidence in the destination through the provision of up to date information on the developments (Mansfeld, 1999; Beirman, 2003; Ritchie, 2009). Media play a key role both as a primary information source as well as the potential creator of crises where initially there is only a minor incident (Quarantelli, 1996; Faulkner, 2001). Crises have a higher probability of being reported than recovery and restoration (Beirman, 2003). Media supervision and good media relations thus represent a key avenue of preventing cancellations. In addition to media, travel agents communicate updates to tourists, thus affecting their decision to cancel or not to cancel a trip. Fuchs and Reichel (2011) find gathering information from travel agents as a risk reduction strategy particularly used by first-time visitors. Direct communication with travel agents thus represents another possible action to counteract cancellations (Ritchie, 2009).

Providing marketing incentives such as discounts and value-added extras may also prevent cancellations (Pizam, 1999; Beirman, 2003) as may the guarantee of personal safety and security and the introduction of protection solutions by local government (Law, 2006; Kozak, Crotts & Law, 2007). Travel insurance (Mitchell & Vassos, 1998) and familiarity with the destination (Tideswell & Faulkner, 1999) act risk relieving in holiday purchases. According to Law (2006) tourists are neutral towards free insurance and the guarantee of personal safety while transparency of information and introduction of surveillance systems or protection solutions are considered important, especially by Asian tourists. Kozak, Crotts and Law (2007) test the relative stated impact of three actions to enhance the confidence to travel to different geographical regions after a crisis. They find free insurance as mostly expected by tourists with the intention of traveling to Australia and New Zealand, guarantee of personal safety and security as mostly expected to travel to North America, and transparency of information as mostly expected to travel to Asia.

Some of the actions discussed above have been implemented by destinations facing unexpected crises. For example, Christchurch & Canterbury Tourism immediately helped travel retailers and consumers to reorganize planned vacations by changing accommodation to nearby locations such as Ashburton, Methven and Kaikoura (Christchurch & Canterbury Tourism, 2012). In addition, international media were informed about the functionality of most parts of Christchurch and – in collaboration with other regional tourism organizations – a marketing campaign was launched to promote tourism on the South Island (Christchurch & Canterbury Tourism, 2012).

Yet, to date, there is little knowledge about the potential of the above actions to prevent cancellations. Specifically, it is not clear which prevention action is the most effective when a certain kind of crisis hits a tourist destination. For example, little advice can be given to managers in Tunisia on whether cancellations can best be prevented by providing up to date information, by offering tourists security services, by moving them into accommodations far away from the attack scene, or by upgrading them thus offering them more value for money if they choose not to cancel.

The above prevention approaches have been developed based on how tourists react to an unexpected crisis at their destination. Thus, we hypothesize that such prevention actions have the potential to prevent cancellations. The nature of the crisis emerged as influencing travelers' reaction to extreme events (Hajibaba & Dolnicar, 2015). Therefore, we postulate that the effectiveness of prevention approaches varies across kinds of crises.

Roehl and Fesenmaier (1992) show that some tourists pay more attention to some risk dimensions than others. In the same crisis situation, some tourists may pay attention to physical risks while other tourists may focus on financial risks. As a consequence, tourists

react differently to different risk reduction strategies. Tourists concerned with not getting value for money spent react to financial risk reduction strategies such as sales promotions (Mitchell & Grottel, 1993). Tourists focusing on physical risks react to strategies that reduce physical risks such as provision of safety solutions. A number of studies (Carr, 2001; Lepp & Gibson, 2003; Roehl & Fesenmaier, 1992) show that tourist-related and travel-related factors such as personality and travel party affect risk perceptions and can be assumed to affect reactions to risk-reduction strategies. Therefore, we hypothesize that the effectiveness of prevention approaches varies across tourists.

Roselius (1971) postulates that a mix of actions should be taken in dependence of the kind of loss and the kind of customer. The present study, therefore, investigates tourists' relative preference for different prevention approaches in different crisis situations. This approach allows a comparison of different prevention approaches across all crisis situations and kinds of tourists. Findings, thus, lead not only to a better understanding of tourists' cancellation decisions and ways to prevent them, but are also of immediate value to destination managers in desperate need of viable recommendation to prevent irrecoverable losses in revenue in the aftermath of a crisis.

Methodology

Data was collected by a professional online research panel company from 887 Australian residents who had undertaken a holiday within the past twelve months. Holidays were defined as trips with at least four overnight stays away from home for non-business reasons such as for leisure and recreation or visiting friends and family. Respondents were asked questions about their last holiday, including their travel motivations, who they traveled with and which accommodation they stayed in.

Respondents were asked to imagine the situation where they have booked a trip similar to their last holiday but an unexpected crisis hit their destination. A conjoint design was then used: they were presented with nine possible alternatives (sets of actions) by destination managers. Four sample alternatives are provided in Fig. 1. Respondents were asked to rank these nine alternatives in multiple stages. In the first stage, respondents had to choose – among all nine alternatives – only the alternative with the highest and lowest likelihood of preventing them from canceling. The alternatives selected in the first stage were not presented in the second stage. In subsequent stages they chose the highest and lowest among the remaining options (see the appendix). From these responses a full ranking of the nine alternatives was derived.

Possible combinations of actions taken by destination management

- Regular updates through your travel agent.
 - Upgrade to luxury accommodation far from the attack scene.
 - Provision of personal (or group) security guard so you can move around freely at the destination.
-
- Regular updates through your travel agent.
 - Change of accommodation far from the attack scene.
 - Provision of personal safety device that allows you to signal an emergency to call for help.

-
- Information about developments at the destination through the media.
 - Change of accommodation far from the attack scene.
 - Provision of personal (or group) security guard so you can move around freely at the destination.
-

- Information about developments at the destination through the media.
 - Upgrade to luxury accommodation far from the attack scene.
 - No personal safety solutions at the destination.
-

Fig. 1. Sample alternatives (sets of preventative actions)

Thereafter, respondents were presented with their ranking and asked whether – in each of those nine alternatives – they would cancel or not cancel their trip. In order to make responses independent of cancellation fees, respondents were assured they would get 95% of all their expenses refunded if they would need to cancel their trip for whatever reason. Note that a very straightforward operationalization of cancellation is used: the abandoning of travel plans. Each respondent was randomly assigned to only one of the crises (terrorism, earthquake, or political instability). Two hundred ninety six respondents were presented with the terrorism crisis, 296 with the earthquake crisis, and 295 with the political instability crisis.

Respondents also provided demographic information and completed a personality item battery. Personality is measured using the 10-item version of the Big Five Inventory developed by Rammstedt and John (2007). In this short personality instrument, each of the ‘big five factors’ of extraversion, agreeableness, conscientiousness, neuroticism and openness to experience are measured using two items. Each of the items is measured on a five-point scale from $-2 = \text{‘disagree strongly’}$ to $+2 = \text{‘agree strongly’}$. After adding up relevant items, each personality dimension score ranges from -4 to $+4$. Respondents were also asked to indicate which TV channels they regularly watch, which radio stations they regularly listen to, and which newspapers they regularly read. These media questions are critical to be able to reach target segments of tourists. The complete questionnaire is provided in the appendix.

Data was analyzed using conjoint analysis (Green & Rao, 1971; Green & Srinivasan, 1978, 1990; Gustafson, Herrmann & Huber, 2003; Rao, 2014). The assumption of conjoint analysis is that individuals’ preferences or utility functions can be derived from observations of their choices in hypothetical situations (Kemperman, Borgers, Oppewal & Timmermans, 2000). Conjoint analysis allows inclusion and combination of large numbers of attributes to describe a hypothetical situation in which respondents evaluate the situation as a whole rather than evaluating attributes individually, making preference statements more realistic. In addition, conjoint analysis allows the presentation of different alternatives, some of which may not currently exist but turn out to be the best options (Haider & Ewing, 1990).

Conjoint analysis was performed separately for each crisis situation on the basis of three approaches (attributes) that can be used by destination management to prevent cancellations: (1) accommodation change, (2) the provision of information about the developments of the crisis at the destination, and (3) the provision of security and safety solutions. For each one of those three approaches (attributes), three specific actions (levels) are tested. The three accommodation actions include: (1a) an upgrade to luxury accommodation far from the exact location of where the crisis occurred, (1b) a change of the accommodation to a location far away from where the crisis occurred, and (1c) no change of accommodation. Information

provision actions are: (2a) regular updates by travel agent, (2b) information about developments at the destination through the media, and (2c) no updates. The three safety and security actions are: (3a) provision of a personal (or group) security guard to enable tourists to move freely at the destination, (3b) the provision of personal safety devices that allow tourists to signal an emergency to call for help, and (3c) no personal safety action.

A full-factorial design of three approaches (attributes) with three actions (levels) results in $3^3=27$ combinations (alternatives). To make the task more viable for respondents, a subset of size nine combinations (alternatives) was selected using the Latin square design (Grant, 1948; McNemar, 1951). This design assumes that the attributes have no interactions. This assumption aligns well with the context of this study: we do not expect that accommodation type, information type and safety interact strongly as these attributes reflect distinct types of changes in the vacation booked.

The part-worth model in conjoint method estimates three functions of $U_1(X_1)$, $U_2(X_2)$ and $U_3(X_3)$ respectively for the three attributes of X_1 (accommodation), X_2 (information) and X_3 (safety) in such a way that the sum of various realizations of U_1 , U_2 and U_3 best represents the judged evaluations for the nine alternatives (Rao, 2014):

$$Y_i = U_1(x_{i1}) + U_2(x_{i2}) + U_3(x_{i3}) + \text{error}, i=1, 2, \dots, 9$$

where:

x_{i1} = level of the accommodation attribute for the i th alternative,

x_{i2} = level of the information attribute for the i th alternative,

x_{i3} = level of the safety attribute for the i th alternative,

Y_i = preference given to the i th alternative,

$U_1(\bullet)$ = part-worth function for accommodation attribute,

$U_2(\bullet)$ = part-worth function for information attribute, and

$U_3(\bullet)$ = part-worth function for safety attribute.

The estimated functions can also be used to predict the utility score for new alternatives not used in the data collection. The dependent variable in the conjoint model represents tourists' trade-offs among the attributes of an alternative. Specifically, the dependent variable in the model (Y) is the respondents' evaluation (stated preference ranking) of each hypothetical alternative set of actions that can be used by destination management.

A standard conjoint approach was used due to the following reasons: (1) it best reflects the rationale behind the modelling approach as the aim was to find out the threshold value (alternative) which is the minimum to prevent tourists from cancelling. In addition, traditional conjoint analysis (2) allows estimating individual utility and importance values directly, measures which were required for further segmentation analysis; (3) requires fewer decisions by respondents than choice based conjoint modelling and (4) participants are not forced to select the one and only alternative, rather it allows for the existence of a minimum offer that prevents tourists from cancelling their trip (even though it is not the maximum which could be offered).

Results

Respondents all resided in Australia, a mature tourist market. The sample consists of 439 females and 448 males. Ten percent of respondents are aged between 18 and 24. The percentage of respondents in other age groups of 25-34 (21%), 35-44 (18%), 45-54 (18%), 65 and over (17%), and 55-64 (16%) is about the same. About half of the respondents have university education; 42% work full-time, 20% are retired, 18% work part-time or casually, 7% are homemaker and 6% are student; 75% live in metropolitan areas.

Can cancellations be prevented?

Respondents were asked to rank nine sets of preventative actions that can be taken by destinations to avoid cancellations. This was done in multiple stages because ranking nine sets would be too complex a task. After the ranking of the nine sets of preventative actions was derived for each respondent, they were asked whether or not they would cancel their trip if the destination would take each of those nine sets of actions.

Some respondents indicated that none of these sets of actions would prevent them from canceling; they would cancel in any case. The cancellation frequency for these respondents is nine. At the other extreme, some respondents will never cancel. Their frequency of cancellation is zero. All the other respondents indicate that some sets of actions would prevent them from cancelling, but others would not. The frequency of cancellation for these respondents ranges from one to eight.

Figure 2 shows how many respondents have which cancellation frequency. The vertical axis represents the number of respondents. The horizontal axis represents the frequency of cancellations which ranges from zero (not canceling ever) to nine (canceling no matter which sets of actions are taken by the destination).

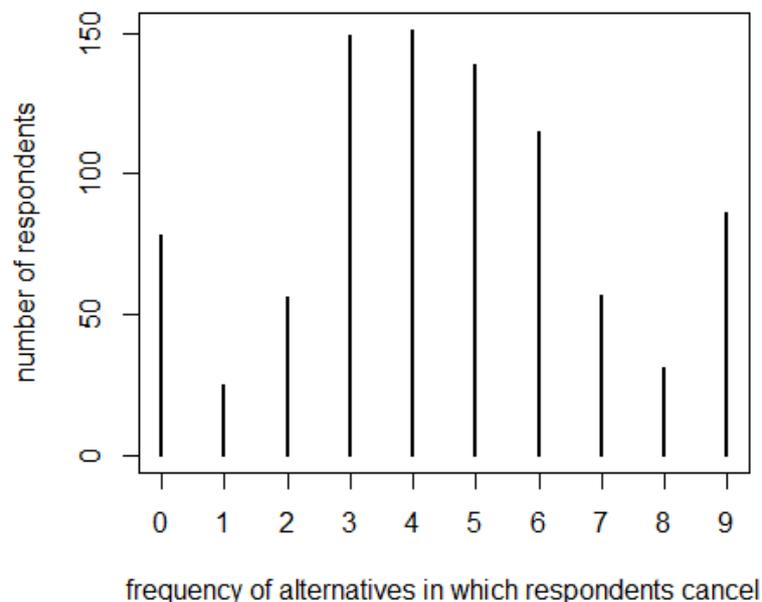


Fig. 2. Stated cancellation frequency

As can be seen, most respondents react to actions taken by the destination. Only 10% of respondents would cancel no matter what sets of actions destination management would take. Ninety per cent of respondents indicated that at least one of the ways offered to them in the questionnaire would prevent them from canceling, suggesting that most tourists are open to suggestions relating to how they may be able to go ahead with their planned vacation.

Does the effectiveness of approaches depend on the nature of the crisis?

Conjoint models for each crisis situation are analyzed. Table 1 provides the conjoint analysis results for the three kinds of crises: terrorism, political instability and an earthquake. The importance values column shows the relative importance of each approach. Relative importance values are derived by dividing the utility range for each approach by the sum of the utility ranges for all approaches. The importance values are interpreted based on the assumption that they are relative to the other attributes used in the study. Nevertheless, the levels of all attributes were designed using a similar rationale: no change – medium change – large change. Therefore we are able to interpret them in a more or less general manner. The importance values presented in Table 1 indicate the importance of each approach for respondents at the aggregate level. However, a standard conjoint analysis also enables estimation of utilities, and therefore importance values, at the individual level. The effectiveness of prevention approaches at the individual level is discussed in the next section.

As can be seen from Table 1, the accommodation approach has the highest relative importance value which means that – on average – it has the strongest effect on people's stated cancellation decisions across all crises. For two of the three crises (terrorism and earthquake) the availability of up to date information on the crisis emerges as the second most important approach. In the case of political instability at the destination, the availability of safety solutions is the second most important. An aggregate analysis of importance of approaches across all three crises leads to the conclusion that accommodation is most important, followed by information provision and provision of safety solutions. Further, the results indicate that information importance (p -value = 0.04) and safety importance (p -value = 0.00) significantly vary across crisis types. Up to date information is more important in case of an earthquake compared to the other two kinds of crises, as is safety solutions in case of political instability.

Table 1 also includes the utility (part-worth) scores for each action. Higher utility values indicate higher preference. In terms of accommodation changes, the upgrade to luxury accommodation far from the crisis center is preferred, followed by a change of accommodation far from the crisis center. In terms of information provision, respondents prefer news updates by their travel agents rather than media and – with respect to safety and security actions – personal security guards are preferred to personal safety devices which allow an emergency call to be sent only.

Table 1
Conjoint analysis output

Kind of crisis	Prevention approaches (attributes)	Prevention actions (levels)	Utility estimate	Standard error	Importance values (%)	
Terrorism	Accommodation	Nothing	-1.21	.099	37.57	
		Away from crisis	.347	.099		
		Luxury away from crisis	.861	.099		
	Information on development	Nothing	-.939	.099	32.21	
		Media	.389	.099		
		Travel agent	.551	.099		
	Safety solutions	Nothing	-.806	.099	30.22	
		Personal safety device	.256	.099		
		Personal security guard	.551	.099		
	Constant			5.00	.070	
	Earthquake	Accommodation	Nothing	-1.25	.106	38.43
			Away from crisis	.472	.106	
			Luxury away from crisis	.775	.106	
Information on development		Nothing	-.979	.106	33.38	
		Media	.359	.106		
		Travel agent	.619	.106		
Safety solutions		Nothing	-.776	.106	28.19	
		Personal safety device	.338	.106		
		Personal security guard	.438	.106		
Constant			5.00	.075		
Political instability		Accommodation	Nothing	-1.25	.071	36.48
			Away from crisis	.391	.071	
			Luxury away from crisis	.863	.071	
	Information on development	Nothing	-1.03	.071	31.24	
		Media	.421	.071		
		Travel agent	.606	.071		
	Safety solutions	Nothing	-.973	.071	32.28	
		Personal safety device	.349	.071		
		Personal security guard	.624	.071		
	Constant			5.00	.050	

The total utility of different alternatives (sets of actions) can also be computed for different kinds of crises. For example, the total utility of the first alternative presented to the respondents (see Fig. 1) in a terrorism crisis is:

$$\text{utility (luxury accommodation away from crisis)} + \text{utility (information through travel agent)} + \text{utility (group security guard)} + \text{constant} = 0.861 + 0.551 + 0.551 + 5.00 = 6.96.$$

Also – given that the scale of utilities is common across all attributes (approaches) – utilities can be added across each attribute level (action) to predict the total utility of any new alternative – which has not been used in the data collection phase. For example, imagine a destination hit by an earthquake providing two alternatives of A1 and A2 in an attempt to prevent cancellations. Alternative A1 comprises the attribute levels: accommodation away from the crisis and information through media but no safety solutions. Alternative A2 includes the provision of information through travel agents and the provision of a group security guard but no accommodation change. The preferences for the two new alternatives A1 and A2 can be evaluated and compared based on their predicted utility values. The total utility of Alternative A1 in an earthquake crisis is predicted as:

$$\text{utility (accommodation away from crisis)} + \text{utility (information through media)} + \text{utility (no safety solutions)} + \text{constant} = 0.472 + 0.359 + (-0.776) + 5.00 = 5.05.$$

The total utility of Alternative A2 in an earthquake crisis is equal to:

$$\text{utility (no accommodation change)} + \text{utility (information through travel agent)} + \text{utility (group security guard)} + \text{constant} = (-1.25) + 0.619 + 0.438 + 5.00 = 4.81.$$

The total utility of Alternative A1 is higher than that of Alternative A2 which means that alternative A1 is preferred to alternative A2 in an earthquake crisis. However, the preferences for the two alternatives are different in a political instability crisis from an earthquake crisis. Alternative A2 is preferred to Alternative A1 as the utility of Alternative A2 (4.97) is higher than that of Alternative A1 (4.84).

To estimate the validity of conjoint analyses in predicting respondents' preferences, Kendall's Tau statistics are computed as a measure of the goodness of fit of the estimated conjoint models. The results show significance at 1% level for all the three kinds of crises of terrorism (Kendall's Tau=0.889, p-value=.000), earthquake (Kendall's Tau=1.000, p-value=.000) and political instability (Kendall's Tau=0.889, p-value=.000). This indicates that the results from the conjoint analyses are valid and the estimated models explain respondents' preferences well.

Does the effectiveness of approaches vary across tourists?

To make target marketing possible, it is important to know which prevention approach is most effective for which tourists. A commonsense segmentation (Dolnicar, 2004) was performed to see whether people with different preferences for provided approaches differ in any other personal characteristics. A standard conjoint analysis provides utilities and importance values at the individual level. Segmentation was performed based on the importance values of the three approaches of accommodation, information on development, and safety solutions. In other words, tourists were assigned to a segment based on the intervention approach most effective for them.

Three segments of tourists are created accordingly: *Accommodation Seekers* (N = 409) react most to changes in accommodation. *Information Seekers* (N = 286) react most to being informed. *Safety Seekers* (N = 192) care most about safety actions. Differences between

segments in metric background variables were tested using Kruskal-Wallis rank-sum test. Differences in categorical background variables were tested using a Chi-square test. All p-values were corrected using Holm's (1979) method.

Segments differ significantly with respect to travel party (p-value = 0.014). *Accommodation Seekers* more frequently travel with their partner or spouse (44.5%) and less frequently alone (12.5%); *Information Seekers* travel alone more frequently (20.3%) and *Safety Seekers* more frequently travel with friends (12.0%) or with an organized group (4.2%). The travel motivation of 'meeting new people' is important to *Information Seekers* (42%) and *Safety Seekers* (43%) (p-value = 0.041).

Segments also differ significantly with respect to the personality dimension of conscientiousness. *Accommodation Seekers* (mean = 1.46) score lower on conscientiousness while *Information seekers* (mean = 1.80) score higher on conscientiousness (p-value = 0.042). The personality dimension of conscientiousness reflects being careful and organized (Barrick & Mount, 1991). Tourists scoring high on conscientiousness prefer to get up-to-date information in order to be able adjust their travel plans to the situation.

Safety Seekers (51.6%) watch more ABC1 TV (state TV) compared to other segments (p-value = 0.017). *Information Seekers* (21.7%) read the Daily Telegraph newspaper (one of Australia's major newspapers) more compared to other segments (p-value = 0.002). Moreover *Accommodation Seekers* (20.3%) live more frequently in regional areas, *Information Seekers* (80.1%) live more frequently in metropolitan areas, and *Safety Seekers* (13.0%) live more frequently in rural areas (p-value = 0.001).

The results therefore indicate that different prevention approaches are effective for different people. Destination managers faced with a crisis can target people based on the prevention approach available to them. For example, if they are in the position of being able to provide accommodation upgrade, they are better off targeting people traveling with their partner / spouse. Introduction of safety actions is more effective for people traveling with friends or with an organized group i.e. people with weaker ties with each other. Providing updates and information is an effective approach for people traveling alone.

Conclusions, limitations, and future work

The study set out to determine if anything can be done to prevent tourists from cancellations in times of crises hitting tourist destinations, and if so, which approaches are most promising. The results indicate that cancellations can be prevented. However, depending on the kind of crisis, some combinations of preventative actions taken by destination management are more effective than others. An effective combination of actions depending on the nature of crisis can be used to best prevent cancellations.

A conjoint analysis of different approaches indicates that – across all kinds of crises under investigation – offering a change in accommodation (especially when combined with an upgrade) is the most effective approach affecting travelers' stated intentions to cancel a trip, followed by information regarding developments at destination. The effectiveness of different prevention approaches depends on the nature of the crisis.

In case of a terrorist attack – such as the recent shooting in Tunisia – offering tourists a change of accommodation is the most preferred option. The next most preferred approach in a terrorism crisis is the provision of detailed and up to date information on the status at the destination. Offering safety and security solutions is least preferred by tourists in a terrorism situation. Tourists' ranking of prevention approaches in a terrorism situation is: (1) change of

accommodation far from the attack scene, (2) provision of updated information, and (3) provision of safety and security solutions.

In cases where an earthquake hits a tourist destination, moving tourists to accommodations far away from the epicenter is also found to be the most preferred approach. Information emerges as the second most preferred approach in an earthquake situation. In case of an earthquake, updated detailed information – especially relating to affected tourism infrastructure – is vital for tourists to make decision. Provision of safety solutions is the least preferred approach in an earthquake crisis. In addition, safety solutions have a lower importance value in an earthquake situation than when a terrorist attack occurs or the destination is troubled by political instability. The order of preference for the earthquake scenario is the same as for the terrorism attack: (1) change of accommodation, (2) dissemination of updated information, and (3) provision of safety and security solutions. The importance of provision of information varies across disaster scenarios and has the relatively strongest impact when an earthquake hits. Therefore, when faced with an earthquake, a combination of preventative actions should be chosen which focuses strongly on change of accommodation and provision of information.

Tourists' ranking of prevention approaches in a political instability crisis is slightly different from that of a terrorist attack or an earthquake crisis. Once again – in a political instability situation – change of accommodation far from the protests is the preferred approach. However, provision of security and safety solutions (i.e. provision of a personal or group security guard so tourists can move around freely at the destination or provision of personal safety device that allows tourists to signal an emergency to call for help) outperforms the provision of information in this case. Tourists' ranking of prevention approaches in a political instability crisis is: (1) change of accommodation, (2) provision of safety and security solutions, and (3) provision of up to date information. The importance of provision of safety and security varies across disaster scenarios and has the relatively strongest impact in case of political instability. Therefore, in case of political instability at a tourist destination, a combination of preventative actions should be chosen which focuses strongly on change of accommodation and provision of safety.

Overall, the findings of this study suggest that change of accommodation far from the crisis has the highest average importance and is the most preferred approach across all kinds of crises. Some crises – such as the 2011 Christchurch earthquake – result in a critical destruction to tourist accommodation infrastructure, so change of accommodation becomes inevitable. In some crises – such as the recent Tunisia shooting – tourist accommodation infrastructure is not affected. However, the proximity to the center of crisis can be a source of concern for tourists. In this case, change of accommodation can be offered in form of an upgrade.

The results of this study identify upgrade to a luxury accommodation far from the crisis as the most preferred action among all the actions under investigation and across all kinds of crises. In other words, the utility of the alternative including upgrade to a luxury accommodation far from the crisis, no updated information and no security solutions is higher than that of any other single-action alternative. This suggests not only the importance of the location of the accommodation to tourists, but also the effectiveness of upgrades to reduce post-purchase dissonance and consequently to prevent cancellations. Change of the location of accommodation far from the crisis can help to reduce tourists' perceived hazard loss. Upgrade to a luxury accommodation far from the crisis can help to reduce perceived psychological or financial loss. In addition, the accommodation approach would be most effective if directed at *Accommodation Seekers* segment found in this study. Therefore

accommodation upgrade can best prevent cancellations if offered to tourists living in regional areas intending to travel with their partner or spouse.

Some crisis situations may not affect tourist accommodation infrastructure. If – based on an assessment of the situation – change of accommodation seems a costly unnecessary action, managers of a destination hit by a crisis can best counteract cancellations by providing detailed updated information on developments. Instead of “battening down the hatches” in times of crises, effective communication and free flow of information is required (Seeger, 2006, p. 241). Mansfeld (1996) emphasizes on the use of the most effective communication tool to convey information regarding risk factors. The results of the current study show that tourists rely more on information communicated through travel agents compared to media. Alliances with travel agents – especially in source markets – and making travel agents more aware of the situation at the destination will enhance their confidence to retain current bookings and continue selling trips to the destination (Beirman, 2003). In addition to direct dissemination of information to travel agents, they can indirectly be informed through e.g. destination updated websites. In addition to travel agents, effective communication with other travel organizations – such as airlines and tour operators – can be used.

Although the current study finds media being a less reliable crisis information source compared to travel agents, information communicated through media will still impact tourists’ perceptions of a destination (Hall & O’Sullivan, 1996). Maintaining good media relations therefore appears vital to limiting the damage to the destination image. Another important strategic avenue for applying the information approach is targeting the segment of *information seekers* found in this study. Thus updated information should be directed particularly at people living in metropolitan areas and tourists intending to travel alone through media – most importantly the Daily Telegraph newspaper.

The results of the current study indicate provision of safety solutions as the least important compared to the accommodation and information approach aggregately for all kind of crises. Safety solutions are found more important in a political instability compared to the other two kinds of crises under study. Safety is a significant human need dominantly affecting behavior (Maslow, 1954). Feeling safe is an important tourist motivation to undertake a trip. The majority of respondents in our sample indicated the motivational item of “to feel safe” as important when undertaking a trip. It is, therefore, essential to cater this very basic human need and to make tourists feel safe prior and during their vacations (Kozak, Crofts & Law, 2007). Providing safety solutions can help to reduce tourists’ safety concerns following an unexpected critical event at their planned destination and to prevent likely cancellations.

Various safety solutions have been introduced and successfully adopted by destinations to diminish the occurrence of security incidents at tourist destinations such as increased presence of armed police, surveillance by experienced security guards and security devices (UNWTO, 1996; Sönmez, Apostolopoulos & Tarlow, 1999; Law, 2006). The results of the current study indicate that the provision of personal (or group) security guard is preferred to the provision of personal safety device that allows signaling an emergency to call for help. The results also show that safety and security solutions are most effective if offered to the segment of *Safety Seekers* including tourists living in rural areas intending to travel with friends or with an organized group through media – most importantly state TV channels.

This study is limited by the number of crisis situations and the number of prevention approaches tested in the conjoint model. Different crises and different approaches could have led to different results. The current study did not account for the fact that the threat of an earthquake is more local compared to terrorism and political instability. In addition, the

cancelation questions in this study are hypothetical in order to accommodate different crisis situations. Future research can be performed using field tests to investigate the effectiveness of different prevention actions in real crisis situations. For example, different prevention actions can be offered e.g. by travel agents to tourists who request a cancelation following a crisis at the destination of their choice and see how different actions affect their decision to cancel. Note, however, that field studies would not permit a range of crisis events to be measured simultaneously in a realistic manner. Future – probably qualitative – research could also usefully explore what tourists perceive as cancellations, whether – for them – it is indeed as black and white as abandoning or not or whether they have a more nuanced view which may open up other possible responses.

This study investigated the effectiveness of prevention actions for tourists traveling with non-business purposes. Future research might also explore trips with business purposes. People who normally visit or conduct business belong to the ‘Waverers’ (or fair weather friends) category among post-crisis categories defined by Beirman (2003). This category is the first to return after a crisis, unlike the ‘Disaffected’ category including people who see the destination as a holiday destination. In addition, this study used a specific sample and results may be different in other contexts for other tourists segments. The effectiveness of different prevention approaches may also vary from one destination to another, so this study can be repeated for different destinations in different geographical regions.

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Appendix: Survey questions

Socio-demographic variables

Are you...?

1. Male
2. Female

How old are you?

- <14-130>
- Prefer not to say

What is the highest level of education you have completed?

1. No formal education
2. Primary school
3. Secondary school
4. Technical/Vocational training or apprenticeship
5. University degree, undergraduate
6. University degree, postgraduate

Which of the following best describes your employment status?

1. Working full-time

2. Working part-time or casually
3. Unemployed but looking for work
4. Homemaker
5. Retired
6. Student
7. Other (please specify) _____

Which best describes the area where you live?

1. Metropolitan
2. Regional
3. Rural

Media questions

Which are your favorite TV channels? *Select as many as apply.*

1. ABC1
2. ABC2
3. ABC News 24
4. One
5. Nine
6. GEM
7. Go!
8. Seven
9. 7Two
10. 7mate
11. Ten
12. Eleven
13. SBS One
14. SBS Two
15. SBS 3
16. Fox8
17. Fox Sports 1
18. Fox Sports 2
19. Fox Sports 3
20. Lifestyle Channel
21. History Channel
22. National Geographic
23. SoHo
24. Discovery Channel
25. Foxtel Movies
26. BBC World News
27. Other _____

Which newspaper(s) do you read regularly? *Select as many as apply.*

1. Online news services
2. Herald Sun
3. The Daily Telegraph
4. The Courier-Mail
5. The Sydney Morning Herald
6. The West Australian
7. The Age
8. The Advertiser
9. The Australian
10. The Australian Financial Review
11. The Herald
12. The Mercury
13. The Gold Coast Bulletin

14. The Canberra Times
15. The Examiner
16. Townsville Bulletin
17. Northern Territory News
18. Other _____

Which are your favorite radio stations? *Select as many as apply.*

1. ABC Newsradio
2. ABC Radio National
3. ABC TripleJ
4. ABC Dig Music
5. 702 ABC Sydney
6. 774 ABC Melbourne
7. 612 ABC Brisbane
8. 720 ABC Perth
9. 891 ABC Adelaide
10. 666 ABC Canberra
11. Other _____

Psychographic variables

How well do the following statements describe your personality?

I see myself as someone who	Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
a) is reserved	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) is generally trusting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) tends to be lazy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) is relaxed, handles stress well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) has few artistic interests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) is outgoing, sociable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g) tends to find fault with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h) does a thorough job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i) gets nervous easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j) has an active imagination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Last holiday behaviors and motivations

How many months ago did you take your last personal holiday (for at least 4 nights, not for business) away from home?

Now please think about the last holiday you have taken. Remember, for the purpose of this study, a holiday means that you were away from home for at least 4 nights and it was not for business or employment reasons, but a personal holiday.

In which country and city did you spend your last vacation? ...

Who did you travel with?

1. Alone
2. With partner / spouse
3. With partner / spouse and children
4. With friends
5. With an organized group
6. With family (parents, siblings, ...)

Which type of accommodation did you stay at?

1. 4-star or 5-star hotel
2. 3-star, 2-star, 1-star or unstarred hotel
3. Bed & Breakfast
4. Holiday apartment
5. Private room
6. Camping site
7. Youth hostel
8. Stayed with friends / relatives
9. Other (please specify):

What was the purpose of your trip? *Select as many as apply.*

1. Leisure and recreation
2. Visiting friends
3. Visiting family
4. Health and medical care
5. Education and training
6. Business
7. Other _____

What was important to you for this holiday?

	Important	Not important	Not applicable
a) To rest and relax.	<input type="radio"/>	<input type="radio"/>	
b) Luxury and being spoilt.	<input type="radio"/>	<input type="radio"/>	
c) To do sports.	<input type="radio"/>	<input type="radio"/>	
d) Excitement, a challenge, a special experience.	<input type="radio"/>	<input type="radio"/>	
e) Not to exceed my planned budget for this holiday.	<input type="radio"/>	<input type="radio"/>	
f) A variety of fun and entertainment.	<input type="radio"/>	<input type="radio"/>	
g) Meeting new people.	<input type="radio"/>	<input type="radio"/>	
h) The health and beauty of my body.	<input type="radio"/>	<input type="radio"/>	
i) Many entertainment facilities.	<input type="radio"/>	<input type="radio"/>	
j) Not paying attention to prices and money.	<input type="radio"/>	<input type="radio"/>	
k) Learning about local people.	<input type="radio"/>	<input type="radio"/>	
l) An intense experience of nature.	<input type="radio"/>	<input type="radio"/>	
m) Cosiness and a familiar atmosphere.	<input type="radio"/>	<input type="radio"/>	
n) For everything to be organized so I do not have to worry about anything.	<input type="radio"/>	<input type="radio"/>	
o) Unspoilt nature and a natural landscape.	<input type="radio"/>	<input type="radio"/>	
p) Cultural offerings and sights.	<input type="radio"/>	<input type="radio"/>	
q) Change to my usual surroundings.	<input type="radio"/>	<input type="radio"/>	
r) A romantic atmosphere.	<input type="radio"/>	<input type="radio"/>	
s) Catering to my children's needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
t) To feel safe.	<input type="radio"/>	<input type="radio"/>	

Conjoint design

Sample scenario: Terrorism crisis

Thinking about this last holiday, please imagine that – shortly before the start of your trip – you hear in the news that there was a **terrorist bombing** at the destination you are planning to travel to. Ten people were killed and more than 20 injured. The people responsible for the terrorist attack were shot at the scene and a major cleaning up effort is on the way.

You bought travel insurance and if – for whatever reason – you would need to cancel your trip, you would get 95% of all your expenses (e.g. airfare, accommodation cost etc.) refunded.

Now you will see nine possible ways in which managers of the tourist destination you are planning to visit can react to try to prevent you from canceling your travel booking.

Please select (1) one option that would have the highest likelihood of preventing you from canceling, and (2) one option that would have the lowest likelihood of preventing you from canceling.

Action taken by destination management :	Highest likelihood of preventing me from canceling (choose 1)	Lowest likelihood of preventing me from canceling (choose 1)
<ul style="list-style-type: none"> - Regular updates through your travel agent. - Upgrade to luxury accommodation far from the attack scene. - Provision of personal (or group) security guard so you can move around freely at the destination. 	<input type="radio"/>	<input type="radio"/>
<ul style="list-style-type: none"> - Regular updates through your travel agent. - Change of accommodation far from the attack scene. - Provision of personal safety device that allows you to signal an emergency to call for help. 	<input type="radio"/>	<input type="radio"/>
<ul style="list-style-type: none"> - Information about developments at the destination through the media. - Change of accommodation far from the attack scene. - Provision of personal (or group) security guard so you can move around freely at the destination. 	<input type="radio"/>	<input type="radio"/>
<ul style="list-style-type: none"> - Information about developments at the destination through the media. - Upgrade to luxury accommodation far from the attack scene. - No personal safety solutions at the destination. 	<input type="radio"/>	<input type="radio"/>
<ul style="list-style-type: none"> - Information about developments at the destination through the media. - No change of accommodation. - Provision of personal safety device that allows you to signal an emergency to call for help. 	<input type="radio"/>	<input type="radio"/>
<ul style="list-style-type: none"> - No updates about the developments at the destination. - Upgrade to luxury accommodation far from the attack scene. - Provision of personal safety device that allows you to signal an emergency to call for help. 	<input type="radio"/>	<input type="radio"/>
<ul style="list-style-type: none"> - Regular updates through your travel agent. - No change of accommodation. - No personal safety solutions at the destination. 	<input type="radio"/>	<input type="radio"/>
<ul style="list-style-type: none"> - No updates about the developments at the destination. - Change of accommodation far from the attack scene. - No personal safety solutions at the destination. 	<input type="radio"/>	<input type="radio"/>
<ul style="list-style-type: none"> - No updates about the developments at the destination. - No change of accommodation. - Provision of personal (or group) security guard so you can move around freely at the destination. 	<input type="radio"/>	<input type="radio"/>

Of the remaining options, please again select (1) one option that would have the highest likelihood of preventing you from canceling, and (2) one option that would have the lowest likelihood of preventing you from canceling.

	Highest likelihood of preventing me from canceling (choose 1)	Lowest likelihood of preventing me from canceling (choose 1)
	<input type="radio"/>	<input type="radio"/>

Of the remaining options, please again select (1) the option that would have the highest likelihood of preventing you from canceling, and (2) the option that would have the lowest likelihood of preventing you from canceling.

	Highest likelihood of preventing me from canceling (choose 1)	Lowest likelihood of preventing me from canceling (choose 1)
	<input type="radio"/>	<input type="radio"/>

One last time, please select (1) the option that would have the highest likelihood of preventing you from canceling, and (2) the option that would have the lowest likelihood of preventing you from canceling.

	Highest likelihood of preventing me from canceling (choose 1)	Lowest likelihood of preventing me from canceling (choose 1)
	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>

Below you will see the order in which you have currently placed the various ways in which destination management can react in order to try to prevent you from canceling. Remember you bought travel insurance and if – for whatever reason – you would need to cancel your trip you would get 95% of all your expenses (e.g. airfare, accommodation cost etc.) refunded

Please now indicate whether, in each of those situations, you would cancel or not cancel the trip.

Action taken by destination management	Would you
<i>1st ranked alternative</i>	<input type="radio"/> cancel <input type="radio"/> not cancel
<i>2nd ranked alternative</i>	<input type="radio"/> cancel <input type="radio"/> not cancel
<i>3rd ranked alternative</i>	<input type="radio"/> cancel <input type="radio"/> not cancel
<i>4th ranked alternative</i>	<input type="radio"/> cancel <input type="radio"/> not cancel
<i>5th ranked alternative</i>	<input type="radio"/> cancel <input type="radio"/> not cancel
<i>6th ranked alternative</i>	<input type="radio"/> cancel <input type="radio"/> not cancel
<i>7th ranked alternative</i>	<input type="radio"/> cancel <input type="radio"/> not cancel
<i>8th ranked alternative</i>	<input type="radio"/> cancel <input type="radio"/> not cancel
<i>9th ranked alternative</i>	<input type="radio"/> cancel <input type="radio"/> not cancel