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Willingness to pay for safe flights during and after crises

The current research includes two data sets: the first collected during the 2014 Israel–Gaza conflict, also known as Operation Protective Edge, and the second collected six months after the operation. This research examines the effects of demographic attributes and temporal proximity to the event on people's willingness to pay higher prices to fly on national airlines. A total of 490 Israelis answered an Internet survey. The results show that people were more willing to pay higher prices during the military operation. In addition, older people who had travelled abroad at least twice and those with stronger ties to religion were willing to pay more for airline tickets.

Key words: willingness to pay; flights; security; Israel; conflict

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Introduction

The rapid growth of the aviation industry (about 5-9 percent per year) has made it one of today's largest and most important industries. The number of passengers on scheduled flights surpassed the three billion mark in 2014 (ICAO, 2014). Despite this growth, airline profitability is not increasing in line with seat capacity and demand for flights. Therefore, airlines have resorted to different methods to increase revenues while reducing costs. To determine the effectiveness of these methods, it is important to discover what factors affect how people select a particular airline, and specifically what factors affect their willingness to pay for an airline ticket. Factors such as reliability, quality, flight schedules and connections, share of flights, frequent flyer programs, comfort and past experience were found to be important in choosing a scheduled airline, while fare is the most important factor in choosing a low-cost carrier (Ershad, 2007; Kim & Lee, 2011; Pakdil & Aydin, 2007; 1999; Suzuki, 2004).

Willingness to pay (WTP) for airline tickets has been the focus of some scholarly work, which has found that factors such as leg room and reliability have a strong impact on WTP for airline tickets, while WTP for reduced penalties in case of a flight change is relatively low (Balcombe, Fraser & Harris, 2009; Espino, Martin & Roman, 2008; Lee & Luengo-Prado, 2004; Martin, Roman & Espino, 2008). Balcombe et al. (2009) researched the effect of socio-demographic factors on WTP and found that age had a significant impact. In particular, older travelers are willing to pay more for seat comfort, while younger travelers are willing to pay more for in-flight bars and screens. Gender was also found to have an effect on WTP: Women are more willing to pay for seat width, while men are more willing to pay for on-board entertainment. The highest WTP emerged for reliability and legroom, while penalty reduction in case of a flight change yielded the lowest WTP.

The effect of age on WTP for airline tickets may reflect different factors. Older people tend to have a greater sense of perceived risk as well as higher incomes and thus may be willing to pay more for airline tickets. On the other hand, they also tend to have more experience traveling abroad and therefore be less willing to pay higher airfares. Research examining WTP for organic food yielded mixed results about the effect of age on WTP (Govindasamy and Italia, 1999; Lerner, Gonzalez-Krystallis, and Chrysohoidis, 2005). Specifically, while younger people may be willing to pay more for organic food, their actual behavior does not reflect this willingness due to income limitations. For this reason, I did not consider age as a separate variable in this study. Instead, I combined these two separate variables—age and extent of past travel experience—to create a variable representing their combined effect.

The impact of perceived aviation safety on choice of airline has been considered by several studies. For instance, Koo et al. (2015) found that among students, price and safety were the most important factors influencing airline choice. Jou et al. (2008) measured safety as airline passengers' perception of the "reputation of an airline's flight safety" and the "flight crew's attitude to safety incidents." The authors found that safety is one of the most important factors affecting air passengers' choice of airline. A survey by O'Connell and Williams (2005) showed that in Malaysia and Ireland, safety was ranked eighth and seventh respectively, behind other factors that affected the choice between traditional carriers and low-cost airlines. Shahrabani and Teitler-Regev (2016) found that fear during tense situations increases people's willingness to pay for airline tickets.

In 2014, from July 7th to August 26th, Israel and the Hamas organization were engaged in a military confrontation in the Gaza Strip. This operation, known as Operation Protective Edge, began after three Israeli teenagers were kidnapped and killed by Hamas in the West Bank. Over 4500 rockets were fired into Israel. In retaliation, the Israeli army

launched an air and ground attack in Gaza. During the operation, most Israelis were exposed to missile attacks and alarms. The current study compares Israelis' WTP to fly on a national airline during and after Operation Protective Edge. In particular, it examines the impact of socio-demographic data as well temporal proximity (during the operation or six months later) on WTP. The current study contributes to the existing literature by examining the impact of temporal proximity to missile attacks on people's WTP for tickets to fly on a national airline. The implications of the study can help in better understanding people's feelings and attitudes toward airline services.

Hypotheses

Hypothesis 1: Whether individuals are willing to pay more to fly on an Israeli airline depends on temporal proximity to stressful national events. In research conducted during a war, Shahrabani and Teitler-Regev (2016) found that individuals who exhibited higher levels of fear were willing to pay more for the security and safety of flying on a national airline. Jou et al. (2008) found that safety is one of the most important factors affecting air passengers' choice of airline. Therefore, I hypothesize that individuals are more likely to be willing to pay higher prices to fly on a national airline during tense times than during routine times.

Hypothesis 2: Individuals' level of religious observance will affect their WTP. Those who are more religiously observant are more likely to be willing to pay more to fly on an Israeli airline. The effect of this variable on willingness to pay has not been previously researched, and the current study aims to fill this gap. In Israel, varying levels of religious observance have an impact on everyday behavior, and the assumption is that this factor will also affect willingness to pay for flight tickets.

Hypothesis 3: Based on Balcombe et al. (2009), I hypothesize that older individuals with more past travel experience will be willing to pay more to fly on a national airline.

Methods

Sample

The study was based on an Internet survey conducted at two distinct times. Operation Protective Edge began on July 8, 2014 and lasted until August 28. The first sample was collected during the operation on July 28, with the help of a company specializing in research surveys. Respondents who agreed to participate in occasional surveys received a link to the questionnaire, which they answered on their personal computers at their convenience. The sample included 414 adult participants from the Israeli population. The second sample was collected in March 2015 and included 76 respondents. Data collection was similar to the first sample. All the survey participants had traveled abroad at least once during the three years preceding the study. The sample comprised 48.2% men and 51.8% women, with an average age of 47.66.

Questionnaire

Participants were informed that the survey was anonymous and that the results would be used for research purposes only. The questionnaire included items designed to measure Socio-demographic details and other background information, including degree of religious observance (orthodox, secular, traditional), age (under or over 35) and extent of past travel experience (less than twice in the past three years or two or more times). In addition, the questionnaire contained a question regarding whether the respondent would be willing to pay extra to fly on a national airline.

Data analysis

The statistical package SPSS 22 was used for statistical analysis of the data. The research included descriptive statistics and logistic regression tests. As mentioned above, the

effect of age is complex. For example, experienced younger tourists are less willing to pay than inexperienced younger tourists. Similarly, the difference between an unexperienced traveller's WTP more for airline tickets and that of an experienced traveller will be lower among younger tourists. Therefore, in this study, the variables of age and number of previous trips abroad were combined, and four dummy variables were created to represent the various combinations of the two variables. For example, if a respondent travelled abroad only once during the past three years, the variable was assigned the value 1; otherwise, the variable was assigned the value 0. Using these four dummy variables, I created variables representing the combined impact of age and travel experience by multiplying the dummy variable representing number of trips by the dummy variable representing age.

Results

Descriptive statistics

Of the entire sample of 490 respondents, 31.8 percent traveled abroad once, 21.8 percent traveled twice, 16.5 percent traveled three times and 27.1 percent traveled four times or more.

Table 1: Descriptive statistics

		N	%
Gender	<i>Male</i>	236	48.2%
	<i>Female</i>	254	51.8%
Marital Status	<i>Not Married</i>	183	32.3%
	<i>Married</i>	307	62.7%
Level of Religious Observance	<i>Secular</i>	271	55.3%
	<i>Traditional</i>	131	26.7%
	<i>Orthodox</i>	86	17.6%

Employment ¹	<i>Employed</i>	411	83.9%
	<i>Unemployed</i>	44	13.1%
Income	<i>Below average</i>	180	36.8%
	<i>Average</i>	173	35.3%
	<i>Above Average</i>	125	25.5%
Education	<i>High school</i>	124	25.3%
	<i>Higher education (not academic)</i>	176	35.9%
	<i>Academic Education</i>	190	38.8%

The results in Table 1 show that 48.2 percent of the respondents are male; 62.7 percent of the respondents are married, and 32.3 percent are single, divorced or widowed; 25.3 percent of the respondents graduated from high school, 35.9 percent have some higher education and 38.8 percent hold academic degrees.

Results of the Analytical Model

Using logistic regression analysis, I examined the factors affecting the dependent variable: "Are you willing to pay more to fly on a national airline (yes /no)?" The independent variables² include temporal proximity of the military operation to the time the questionnaire was administered (during or after), level of religious observance (ranging from 1 - not religious to 4 - orthodox), an instrumental variable representing at least two trips abroad, and age. Table 2 summarizes the results of the regression analyses.

¹ In some cases, the numbers do not add up to the total number in the sample since some respondents did not answer all the questions.

² The original model included other variables, such as education level, dummy variables for number of trips abroad and age, but these were not significant and therefore are not shown with the results.

Table 2: Results of the analytical model. Dependent variable: WTP to fly on an Israeli airline.

Variable	B	S.E.	Wald	Sig.	Exp(B)
Level of Religious Observance	.310	.106	8.52	.004	1.363
Older and more past travel experience	.608	.206	8.723	.003	1.837
Research timing (base=non-tense situation)	.685	.288	5.675	.017	1.984
Constant	-1.312	.3	19.125	.000	.234

The regression results indicate that the temporal proximity of administration of the research questionnaire to the military operation affected WTP. When the survey was conducted at the time of the missile attacks, people were more likely to be willing to pay more for a ticket than when the survey was conducted six months after the operation. This effect emerged for all population groups tested, both young and old and those with or without travel experience. This result indicates that the first hypothesis cannot be rejected and is in line with the findings of Shahrabani and Teitler-Regev (2016) that proximity to a war increases WTP.

The results also indicate that when level of religious observance increases, so does the probability that an individual will be willing to pay more to fly on a national airline. This may be because Israeli national airlines more closely adhere to religious dietary rules and some do not fly on the Sabbath and Jewish holidays. Individuals who have more past travel experience (travelled abroad at least twice during the past three years) and are older (over 35) are more

likely than other people to be willing to pay more. This finding is in line with the finding that age has a significant impact on WTP. Foreign travel experience may reflect the willingness to travel as well as the ability to travel (income). Therefore, those who travelled abroad previously are able to pay more for flights and are therefore willing to do so. This result indicates that the second hypothesis cannot be rejected.

Discussion and Conclusions

This study examined the effect of socio-demographic data and the temporal proximity of survey administration to missile attacks on WTP for airline tickets. Specifically, this research used two datasets: one collected during a time when Israel was under missile attacks and the other collected six month after the attacks. In both cases, respondents were asked about their willingness to pay for airline tickets in the future. The current study contributes to the existing literature by examining the impact of temporal proximity to missile attacks on WTP for tickets to fly on national airlines. The results support the hypothesis that WTP during a period of missile attacks is higher than willingness to pay six months after such an event.

In addition, the results of the study indicate that the combined effect of age and number of trips abroad (over the age of 35 and traveled abroad at least twice during the past three years) affects the probability that an individual will be willing to pay more compared to others. Future research is warranted to examine WTP for airline tickets in other countries that have recently experienced tense situations. In addition, more detailed research should test the priming effect of a missile attack on the WTP after different periods of time have elapsed (close to the event, a short time thereafter and in the long run).

Based on the study's results, the aviation industry should target older people and those who travel abroad often. In addition, the industry should target individuals with higher levels

of religious observance, since they are willing to pay more for airline tickets. Moreover, in order to increase profitability airlines should not decrease airfare after a war since that is a time people are willing to pay more.

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