Understanding the Factors Causing Travelers' Feelings of Security in Ports

Amalia Polydoropoulou, Associate Prof., University of the Aegean (polydor@aegean.gr)

Nikos Litinas, Emeritus Prof., University of the Aegean (nlit@aegean.gr)

Athena Tsirimpa, Dr., Institute of Shipping and Transport (athina.tsirimpa@ibigroup.com)

Maria Kamargianni, PhD Candidate, University of the Aegean (kamargianni@aegean.gr)

Abstract

Ports in the Southern Mediterranean area, especially in small regions and islands, that are tourist destinations, are lagging behind in today's requirements with respect to security measures. The implementation of necessary new security measures could impact the decision making of several actors such as passengers, cargo carriers, port authorities and shipping companies. When security measures are examined, one should not only take into consideration the security level achieved, but also other important dimensions, such as the impact of the measures on travelers' travel time, travel cost and convenience.

This paper focuses on the understanding and modeling individuals' perceptions with regards the feeling of security. A methodology for the identification of the interrelationship between causal factors of perceptions, reported measures, port choices, and individuals' subjective travel related well-being is developed. The methodology provides a robust assessment of causal factors for the feelings of security.

A pilot case study is presented for the island of Chios in 2009. The data collection methodology involved the development of specialized questionnaires to collect both Revealed and Stated preferences data, as well as attitudinal and perceptual indicators of security in ports. Two hundred questionnaires were collected and used for the analysis of traveler's feelings, perceptions, intentions, and choices. The estimated models provide insights on the impact of security perceptions on port choice behavior and suggest that the probability of a terrorist attack is indeed a significant factor affecting port choice, while extra waiting time and costs related to the application of advanced security measures negatively impact the utility of the port. Findings from this research can be used for policy development addressing the needs of different customer segments and testing the impacts of alternative security measures. Furthermore, such policies aim to enhance

the overall level of citizens' well-being, by providing transport options with higher comfort and safety.

Key Words: port security, perceptions, users requirements, stated preferences analysis, modelling port choice, probability of terrorist attack, well-being.

Introduction

Transportation systems, due to the large passenger and goods volumes, relatively easy accessibility, as well as diversity in ownership and management, have become the primary targets of terrorist attacks (Leung et al., 2004; Johnston, 2004; Hardin, 2004; OHS, 2002). The recent terrorist attacks in New York (2001), in Madrid (2004) and in London (2005) attest to the difficulty of protecting against such actions (TRB, 2005). The injury and damage of such attacks are often catastrophic and their influence on the public psychology and government policy are far-reaching.

Security is a multidimensional and complex issue (Berglund et al., 2006; Summerton & Berner, 2003). Security consists of the protection and safety of passengers, and security systems are designed to overcome threats (Sugiyama, 2004). A variety of fundamentally different factors contribute to human feelings of security. People facing unknown circumstances tend to develop feelings of anxiety and stress leading to consciousness of risk. The perceptions of risk and insecurity are further influenced if beloved persons (e.g. children) are subject to danger, it is difficult to exercise control over the situation, and there is a high potential of severe damages. Furthermore, there exist differences in the level of risk one is willing to accept and to what constitutes a secure environment. There are also differences between various socioeconomic and demographic groups. In addition, risky situations, involve complex interactions and disputes among government agencies, industrial firms and non-governmental organizations. Thus, COM (2004)72 final report defines security to be "an evolving concept".

Most of the security-related research focuses on crime prevention and crime reduction measures. Security measures are usually designed to meet an actual threat at a specific time by an exogenous decision, based on a technocratic view without counting people's perception of security. This process may lead to investments in expensive technologies against possible threats which may never materialize. Individual's perceptions of security play an important role on their decision making, affecting their travel choices and overall well-being. The policy measures and technologies introduced should aim at increasing people's feelings of security. Therefore, it is important to understand, measure and model the factors affecting travelers' feelings and perceptions of security.

This paper introduces a behavioral approach to model individuals' feelings and perceptions of security for the analysis of the impacts and effectiveness of security policies and measures at ports. Section 2 presents a brief literature review. Section 3

analyses the proposed methodological framework. Section 4 presents a pilot case study for the application of the methodology at the island of Chios. Section 5 presents the model development and estimation results. Finally, section 6 concludes the paper.

Literature Review

In recent years individuals have become increasingly conscious of travel security issues. Several surveys conducted all over the world show different aspects of transportation related security perceptions. A survey in New York City indicates that passengers are intermediately sensitive to privacy (3.84/5.00) and intermediately perceptive of the severity of terrorism and threat (3.64/5.00) (Jenkins et al., 2001). The analysis of the data from Tel Aviv's passengers' subjects disclosed very high perception of security threat (5.00) (Leo et al., 2007). Another survey, that took place in Thailand's airport, showed that 56% of participants took seriously into account security especially when travelling abroad (Udomsuk et al., 2006). Also, women are more sensitive to security issues (Udomsuk et al., 2006; Benjamin et al., 1994).

In another survey, Floyd et al. (2003) examined the effects of perceived risk on travel intentions of households from the New York City area in the aftermath of the September 11 event. They found that during the weeks following September 11, about two-thirds of U.S. leisure travelers indicated reluctance to fly, while 55% of business travelers planned to drive when feasible as opposed to flying to their respective destinations. Similarly, corporate and convention travel experienced a marked decrease in attendance, as a majority of the sample interviewed indicated plans to travel, those with safety concerns were less likely to express intentions to travel in the 12 months following the World Trade Centre attack (Floyd, et al., 2003). As Markidakis et al., explain in their book "Dance with Chance", influenced by 9/11, close to one in five travelers decided not to fly. The decision of individuals to switch mode (from airplane to car) is based on the natural feeling of being in "control" or "illusion of control" that drivers have, without accounting for or being aware of the number of fatal road accidents which is much greater than the probability of a terrorist attack.

An empirical analysis of individuals' mode choice for intercity business trips incorporating trade-offs between improved security levels and increased travel times found that individuals who held positive impressions about the security measures were more likely to fly but the utility of air mode decreased with increasing security controls and boarding time (Srinivasan et al., 2006). Hence, in addition to travel times and costs, perceptions about security levels can be an important factor influencing travel decisions.

Studies in Tokyo have shown that terrorist attacks to public transportation systems, make people feel insecure only for few months. Declines in train ridership, were temporary. Commuters couldn't afford the cost of taxi or private auto use. Thus in that case, travel

cost was more significant than security factor in transport mode choice (Jenkins et al., 2007). In another research on security issues, Joewono (2005) found out that 89.3% of the participant passengers think that security is of high importance, but only 33.3% was willing to pay more in order to improve security.

Several measures are taken to enhance security in transport means, but these measures have also resulted in increased travel times and travel costs. Thus, in evaluating these new measures, it is necessary to consider the passengers' trade-offs between travel times/costs and security levels in travel mode choice decisions (Waugh et al., 2002; Leach, 2006).

Potoglou et al. (2010) using Stated Preference Discrete Choice Modeling (SPDCM) methods attempted to quantify the trade-offs in terms of willingness to-pay (WTP) for a particular security improvements. The research objective was to examine whether security improvements concerning rail travel would be acceptable by individuals and what factors are likely to influence individuals' decisions when privacy, liberty and security may be in conflict. The hypothetical –realistic- scenarios involved three main categories of relevant attributes: security improvements in terms of surveillance equipment and presence of personnel and security checks; potential benefits such as likelihood that a terrorist plot may be disrupted and how things may be handled in case an incident occurs, and travel related characteristics such as waiting time to pass through security and additional cost to cover security improvements. Estimates obtained from the development of a conditional multinomial logit model indicate the respondents' characteristics to the valuation of security, privacy and liberty issues in the context of rail travel are statistically significant. The results indicate that on average, respondents are willing to pay for security improvements implying that potential concerns about privacy and security are outweighed by their preferences (Potoglou et al., 2010).

Thus the understanding and modeling individuals' perceptions and the factors influencing their feeling of security at transport systems, is of high importance. The challenge is to develop strategies that are cost-effective, efficient, and integrated into the operations of the transportation system to meet emerging security risks (TRB, 2005).

The aim of this research is to present an extensive methodological framework for understanding and modeling passengers' perceptions about security in an island environment. An innovative aspect of the research is the focus on ports' passengers by analyzing port choices under different hypothetical stated preferences scenarios. The basis of this research lies on the work and findings of related research on individuals decision making in an islander area (Polydoropoulou et al., 2007; Polydoropoulou and Litinas, 2007; Diakomichalis et al., 2008; Kitrinou et al. 2010).

Methodological Framework

This research develops a methodological framework to understand, measure and model the perceptions and feelings of security. This framework is composed of four levels, with strong interrelationship among all levels.

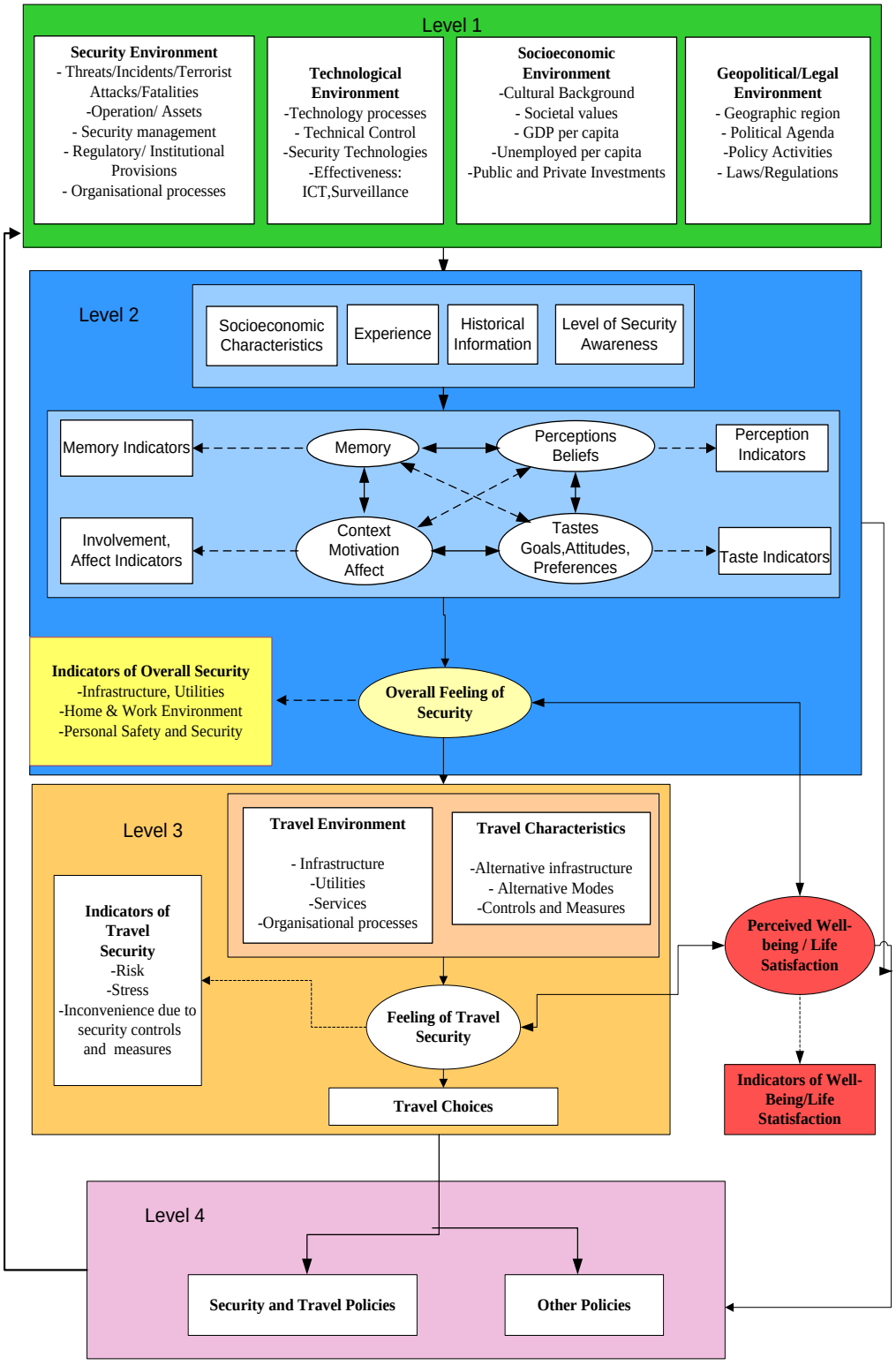

Figure 1: Methodological Framework

Level 1 refers to the understanding and identification of the external factors affecting the development of all perceptions of individual's security.

These are observable variables describing the environment the individuals live in and operate:

- *Security Environment* including Threats/Incidents/Terrorist Attacks/Fatalities. Operation/ Assets, Security Management, Regulatory/Institutional Provisions, Organisational processes;
- *Technological Environment* including Technology Processes, Technical Control, Security Technologies, Effectiveness of Information and Communication Technologies (ICTs) and Surveillance Technologies;
- *Socioeconomic Environment* including Cultural Background, Societal Values, GDP per Capita, Unemployment per Capita , Public and Private Investments; and
- *Geopolitical/Legal Environment* including Geographic region, Political Agenda, Policy Activities, Laws/Regulations.

Level 2 involves the determination of the process of the development of the overall feeling of security. This process is affected by individual-specific observable factors such as:

- Socioeconomic characteristics
- Personal Experiences
- Historical Information on terrorist attacks
- Overall level of awareness about security issues
- Overall level of awareness of threats

The process of development of security feelings goes through the development of the following unobserved therefore latent factors:

- Memory (which threats, incidents, attacks do I recall?)
- Perceptions/Beliefs (how probable is a threat to realise? How important is the probable realisation of this threat on my life, environment etc.?)
- Context, Motivation, Affect (how the environment is affecting my behaviour?)
- Tastes, goals , attitudes, preferences (Risk related behaviour)

The outcome of all these factors is the overall feeling of security which can be identified by measurements of the relevance/importance attributed by individuals' to the following components:

- Infrastructures, utilities related security: examine what are individuals' attitudes/perception/feeling regarding infrastructures' related security i.e. transport, energy, water etc infrastructures' security and related important constituents i.e. physical, premises, mechanical, automation/electronics, ICT, human, malignant parties aspects, etc.
- Immediate environment security: generic attitudes regarding security of the home and work environment.

Within each of the pre-defined categories, the factors that impact on people's feelings of security and insecurity are identified and were appropriate, graded according to their visibility and impact. They are categorized under each of the four proposed environment headings; security, technological, socio-economic and geopolitical/legal.

Level 3 applies the behavioural framework to the transportation industry (in our case the port environment).

The overall perception of security together with the travel environment (such as infrastructure, services, organizational processes), and travel characteristics (such as number of alternatives) will affect the feeling of travel security, which can be measured by the stress level, the inconvenience due to security controls and measures, etc. The feeling of security is then expected to affect travel choices, such as mode or infrastructure choice, etc.

Level 4 designs alternative security policies and other related policies are drawn that might make individuals feel safer and happier.

In this level the models developed in Levels 2 and 3 are applied and the impact of alternative security policies, measures and scenarios on the perceived level of security are predicted. The results can be used to assess the effectiveness of alternative policy options and design guidelines for EU and national policy formulation. They can also provide authorities as well as companies that conduct related research with valuable information and recommendations to improve their performance.

The methodological framework presented above includes all the factors affecting individuals' decision making behaviour specifically accounting for security attitudes and perceptions. Following, a pilot study is developed to capture parts of the overall methodological framework and demonstrate its applicability and usefulness.

Pilot Case Study: the Port of Chios

This section presents a case study for the port of the island of Chios.

The Island of Chios

Chios is the fifth largest Greek island with about 50.000 inhabitants. . During the summer season the population of the island doubles, as the island serves as a tourist destination. The quality of life is relatively high, with GDP per capita of €11.363. Chios is the fourth Greek county in savings, which account to €16.570 per capita (Greek Statistical Agency, 2010). The indicator of unemployment is 10.2%. Chios is the 3rd city in Greece with the highest car per capita ownership (429 cars per 1000 inhabitants) (Koutoura, 2009). It should be noted that citizens of Chios have a strong cultural and educational background. Also, located on the island, the Business School of University of the Aegean, is composed of three departments, with a student community of around 2000 persons. Although the island has economic migrants, the crime rate is low. No terrorism attacks or crimes have happened in the area.

The island's transportation infrastructure is basic. There is only one port that due to its size can serve only liner ships and small cruise ships. Container ships, tankers and bulk carriers cannot reach the port, because it does not hold the appropriate facilities. The connection with Piraeus is daily, whereas there are some routes per week that link Chios with other Greek ports (such as Thessaloniki, Mykonos, etc.). Also, there is a daily connection with Tsesme in Turkey. In the port there is neither an appropriate waiting area for boarding, nor other facilities for passengers. Moreover, due to the ports' central location, the congestion level is high when the ships reach the port. The port is being secured only by the coastal police and there are no other security measures or major boarding controls imposed when boarding. However, it is indisputable that there exists a need for applying new security measures, either at the existing port or at the new port under consideration.

The port of Chios was selected for the pilot survey, as there is the opportunity to provide survey participants with alternative Stated Preference scenarios regarding the redesign of the existing port for the implementation of security improvements. Furthermore, several studies have been developed regarding the construction of a new port (ENVISTA, 2005), and therefore the local society is fairly interested to the developments of the port infrastructure.

Data Collection

Measurements are provided via questionnaires in real life conditions, as well as by setting subjects in hypothetical scenarios where security levels of port alternatives vary. Data collection includes revealed preferences, stated preferences, and behavioral measurements through attitudinal/perceptual indicators.

The questionnaires developed included a wide range of stated preferences (SP) scenarios aiming at capturing passengers' decision making. Respondents were asked to choose among the old port and a new port. Three SP experiments were administered to each respondent, varying the attribute of the probability of a terrorist attack in the next 5 years at the ports, the increase on price of ticket to cover security improvements, and the waiting time (time required to pass through security measures).

Surveys were carried out during November 2009. The overall cleaned sample consisted of 198 people and the questionnaires were filled in at the city of Chios. Respondents were selected randomly and covered all socio-economic classes. A total of 545 SP port choices had complete information and were used in the modeling effort.

Table 1 gives the descriptive statistics of respondent characteristics.

Table 1: Passengers' socio-economic characteristics

Gender	**Number of observations**	**Percentage**
Male	110	55%
Female	90	45%
Age		
17-24	46	23%
25-35	72	36%
36-45	47	23,5%
46-55	17	8,5%
56-65	13	6,5%
>66	5	2,5%
Education		
High school Education	67	33,5%
Graduate Degree	109	54,5%
Post-graduate Degree	24	12,0%
Type of travel		
Business	73	36,5%
Vacation	44	22,0%
Education	47	23,5
Other	36	18%
Frequency of Round-Trip by Airplane in a year		
0 times in a year	23	11,5%
1-3 times	60	30,0%
4-6 times	70	35,0%
7-9 times	9	4,5%
More than 9 times	38	19%
Frequency of Round-Trip by Ship in a year		
0 times in a year	42	21,0%
1-3 times	57	28,5%
4-6 times	48	24,0%
7-9 times	9	4,5%
More than 9 times	33	16,5%

Descriptive Statistics

Table 2 presents the descriptive statistics regarding passengers' satisfaction with the existing security measures. A five-point Likert scale is used, where 1=completely dissatisfied and 5=completely satisfied. Passengers seem to be quite satisfied with the current security measures in ports. Also, they are quite satisfied with the personal check

and the luggage check before boarding. But they are little satisfied with the checking of the cars boarding on the ship.

Table 2: Satisfaction with the existing security measures

Satisfaction with the existing security measures	**2009**	
	Mean	Std. Deviation
I am satisfied with the current security measures in ports.	3,04	1,2
I am satisfied by the personal check that takes place before boarding.	2,85	1,1
I am satisfied by the checking of the luggage before boarding.	3,03	1,1
I am satisfied by the checking of the cars during their entry to the ship.	2,54	1,0

Respondents are quite willing to wait more in order to achieve a higher level of security (Table 3). A five-point Likert scale is used, where 1=completely disagree and 5=completely agree. Respondents believe that higher level of security will be extremely time consuming and will discomfort them. Furthermore, participants claim that security is a factor that affect mode choice.

Table 3: Perceptions about security measures

Perceptions about security measures	**2009**	
	Mean	Std. Deviation
I accept to wait longer before boarding in order to achieve a higher level of security.	2,99	1,2
Higher level of security measures will be extremely time consuming and will discomfort me.	3,49	1,1
Higher level of security measures will insult my personality.	2,40	1,1
Security is a major factor affecting the selection of transportation modes.	3,44	1,2

Table 4 shows passengers' perception about the appropriate space for applying new security measures Five-point Likert scale is used, where 1=completely disagree and 5=completely agree. Respondents believe that the construction of a new port and the implementation of suitable technological equipment are necessary for applying new security measures.

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Table 4: Perceptions about port's re-construction

Perceptions about port's re-construction	**2009**	
	Mean	St. Deviation
The port has the appropriate space to apply new security measures.	2,94	1,1
The construction of a new port and the implementation of suitable technological equipment are necessary for applying new security measures.	3,55	,9
The improvement of the existing port and the implementation of suitable technological equipment are necessary for applying new security measures.	3,95	,9

Tables 5, 6, and 7 present participants' perceptions about the feeling of security in various places and how possible they anticipate a terrorist attack in Greece.

Table 5 shows the perceptions about how possible is a terrorist attack in a specific area. A five-point Likert scale is used, where 1=completely impossible and 5=completely possible. Participants believe that a terrorist attack at a Greek port or airport is quite possible to happen, less at bus stations, and almost impossible at workplaces and at home.

Table 5: Perceptions about possibility of terrorist attack in Greece

Possibility of terrorist attack in Greece	Mean	Std. Deviation
Port	2,70	,9
Airport	2,78	1,0
Bus station	2,35	1,0
Workplace	2,14	1,2
Home	1,96	1,1
Public Services	2,69	1,2

Table 6 presents the feeling of security at various places. A five-point Likert scale is used, where 1=completely insecure and 5=completely secure. They feel more secure at their home (3.81/5.00), whereas at Transportation Modes and at Public places and buildings they feel quite secure.

Table 6: Perceptions – Feeling of security

Feeling of security	Mean	Std. Deviation
Home	3,81	1,3
Workplace	3,29	1,1
Transportation Modes	3,02	1,0
Public Places	2,99	1,1
Public Buildings	2,73	1,1

Table 7 presents the perceptions of being threatened by a terrorist attack. A five-point Likert scale is used, where 1=never and 5=always. Respondents have never felt being threatened at their home (1.69/5.00), whereas they sometimes feel threatened when using Modes of Transportation (2.81/5.00).

Table 7: Perceptions – Threat of Security

Threat of security	Mean	Std. Deviation
Home	1,69	,9
Workplace	2,23	1,0
Transportation Modes	2,81	,9
Public Places	2,67	1,1
Public Buildings	2,28	1,4

Model Development and Analysis

The modeling methodology attempts to measure the effect of security on port choices.

Model Specification

A binary logit model was developed where the dependent variable is the choice between the current port and a new port. The new port is technologically more advanced and the level of security is significantly higher. Each port is characterized in terms of probability of terrorist attack, additional waiting time (in min) from the current port to the new port and additional travel cost from the current port to the new port (in Euros). Different levels of the above attributes were used in the SP experiments. The main assumption is that an individual will choose the alternative with the highest utility (Ben-Akiva and Lerman, 1985).

For respondent n provided with a choice pair j:

$$p_{nj}(1)=\frac{1}{1+\exp(-\mu V_{nj})}$$

$$V_{nj} = (TIME_{1j} - TIME_{2j}) * (a_0 + \sum_l \alpha_l \delta_{nl}) + (THREAT_{1j} - THREAT_{2j}) * (\beta_0 + \sum_k \beta_k \delta_{nk}) + (COST_{1j} - COST_{2j}) * \gamma_0$$

where,

pnj(1), pnj(2) = prob. of choosing Current Port 1 and New Port 2 given choice pair j
COST1j, COST2j = travel costs of Alternatives 1 and 2 given choice pair j;
TIME1j, TIME2j = waiting time of Alternatives 1 and 2 given choice pair j;
THREAT1j, THREAT2j = waiting time of Alternatives 1 and 2 given choice pair j;
α0, β0,γ0 = main time, cost and probability of threat coefficients, for all n;
αk, βl = additional time and probability of threat coefficients, which measure the effect of time and probability of threat for members of segments k and l, respectively;
δnk,δnl = dummy (0/1) variables indicating membership in segments k and l respectively; and
μ = the logit scale parameter, normalized to 1

Model Estimation Results

Table 8 presents the estimation results of the multinomial logit model and the mixed logit model. The models were estimated using the BIOGEME software.

Table 8: Model estimations

	Binary Logit Model		**Mixed Logit Model**	
Coefficients	**Coefficient Estimates**	**t-test**	**Coefficient Estimates**	**t-test**
COST: Travel cost difference in Euros (COST1j - COST0j)	-0.0535	-3.59	-0.0572	-3.58
TIME: Travel time difference in minutes (TIME1j – TIME2j)	-0.150	-4.81	-0.159	-4.29
TIME $*\delta_{nl}$, where δ_{nl} = 1 if resp.'s age is <= 24 years ; 0 otherwise	-0.0461	-1.05	-0.0482	-0.98
TIME $*\delta_{nl}$, where δ_{nl} = 1 if resp.'s age is 25-35 years ; 0 otherwise	-0.0537	-1.32	-0.0546	-1.16
TIME $*\delta_{nl}$, where δ_{nl} = 1 if resp.'s age is 36-45 years ; 0 otherwise	-0.0726	-1.76	-0.0836	-1.93
THREAT: Difference in the probability of terrorist attack (THREAT1j – THREAT2j)	-0.0110	-2.83	-0.0131	-2.96
THREAT * $*\delta_{nk}$, where δ_{nk} = 1 if resp. travels more than 7 times per year; 0 otherwise	-0.0170	-2.24	-0.0191	-2.40
Σ Panel - Panel data sigma distribution (mean zero)			0.814	3.29
Statistics				
Number of Observations	545		545	
Initial Log-Likelihood	-377.765		-377.765	
Final Log-Likelihood	-300.508		-297.964	
Rho-square	0.205		0.211	
Adjusted Rho-square	0.186		0.190	

The mixed binary logit model takes into account the repeated observations from the same individual. The overall fit of the model, indicates a moderate fit, and the coefficients are statistically significant and intuitively correct.

The main attributes, such as additional waiting time and additional travel cost have negative signs as expected, showing that people are not willing to pay more nor to wait more for higher level of security. The coefficient sign of the probability of terrorist attack is negative, indicating that as the probability of a terrorist attack in the old port increases, the highest the likelihood of individuals to choose the new port.

Moreover, as it can be seen from the sign and the relative magnitude of the combined time and age coefficients, older people are less patient to increased waiting times and therefore are more likely to switch port when the waiting time increases. In addition, frequent travelers (via ports) are more prone to switch port when the probability of a terrorist attack increases, compared to those that travel less than 6 times per year through ports.

From the model estimation results we can see that the sigma panel coefficient is significant, which mean that the model allows for capturing intrinsic correlations among the observations of the same individual. Moreover, the final log-likelihood is much greater that the one obtained from the simple binary logit model.

Conclusions and Further Research

This research presents the development of a methodological framework regarding passengers' perceptions and feelings of security at ports. It also presents the results from a pilot survey at Chios port. The main tool for the survey was a questionnaire, which consisted of revealed preferences (RP), attitudinal data, and stated preferences (SP) scenarios.

The descriptive analysis show that Chian citizens are not satisfied neither with the personal checking nor with the car checking that are being carried out before boarding on a ship. Security is taken into consideration when choosing transportation modes. Overall, people feel safe.

The hypothetical scenarios reflected the port choices, as a function of probability of a terrorist attack in the next five years, waiting time due to the implementation of security measures, and extra-related ticket costs. The aim behind was to investigate the trade-offs between the attributes that affect port choice behavior. The structure of the model allows the calculation of the Values of Times and Willingness to Pay of different market segments. In this pilot survey, only age and trip frequency was statistically significant.

Other socioeconomic variables such as gender (affecting waiting time endurance or sensitivity to security concerns), or income (affecting willingness to pay) were not found statistically significant. However, it is believed that such socioeconomic characteristics may be found significant if the sample size increases, or the methodology is applied to other areas (as in Potoglou et al., 2010).

Of course one should keep in mind, that in most of the small/regional islands, individuals do not have a choice between alternative ports. However, in the case of a terrorist attack travelers could use the airport instead, and vice-versa. Moreover, the methodology could be used in order to lead the developments of new infrastructure in the existing port or to contribute to the construction of a new port. The methodology may provide answers to questions, such as how much passengers are willing to wait or pay in the case of the security measures are improved.

The pilot survey shows that the methodology is applicable and could be useful to policy makers. Moreover, it is necessary, the methodology to be applied to other environments with more extended surveys and more complex choice models. In these models the attitudes and perceptions are latent variables affecting individuals' choices (Ben-Akiva et al., 2002).

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