AIRLINES' POINT OF VIEW AS A NEW APPROACH TO MEASURING QUALITY OF SERVICE AT AIRPORTS

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Abstract

It is obvious that customers of airports are divided into five main groups: airlines; passengers; concessionaires; meeters, greeters, visitors, personnel and non-travellers. Passengers are the largest group of all, but sometimes are considered by the airlines as their customers, and therefore only indirect customers of the airport. But the airlines can be still considered as the primary customer of the airport: the major facilities (runways, taxiways, apron, terminal facilities…) have been built for their use. They pay for the services provided. They also use and pay for the office and technical space required for their staff and operations.

Therefore, the aim of the article is to bring new vision; airline's point of view as a new approach to measuring quality of service at airports.

1 Current approach to measuring quality of service at airports (passenger's point of view)

An airport is perceived as a key point in the air transport system. The efficiency and speed of the processes at an airport are critical. This is usually summed up by the term "facilitation", i.e. giving free and unimpeded passage to aircraft, passengers, freight and mail, including all clearance and handling processes. One of the facets of facilitation is quality of service. In order to satisfy the airport's customers, it is important to provide the best service possible, according to customer needs. In order to verify that the desired service quality has been achieved, it has to be measured, evaluated and also anticipated.

ACI quality of service survey uses two kinds of measurement regarding quality of service. Objective measurement, which is provided by the measurement of defined criteria, with indicators which help in achieving objective measures (objective criterion is one which is measured objectively, e.g. a time measurement) and subjective measurement which depends on the subjective value attributed to quality of service by passengers (given by surveys, comment cards, or complaints).

Aircraft turn-around process can be taken as an example of objective service quality criteria. Aircraft turn-around time will represent an indicator in this case and measurement will be represented by the difference between Actual Time of Arrival (ATA) and Actual Time of Departure (ATD) (computerized data). Target/objective depends upon the type of aircraft and the airline service choice.

Overall customer satisfaction at the airport, overall attractiveness, convenience of airport and overall quality of service are good examples of subjective service quality criteria.

Based upon ACI quality of service survey (realized by ACI world headquarters Geneva – Switzerland in 1998), 95 % of objective criteria and more than 99 % of subjective criteria used to measure quality of service at airports worldwide is related to passengers.

Just a little of the following services which are found in an airport related to airlines have been criterions of measuring quality:

- offices and desks (or generally surface areas)
- terminal resources: check-in desks and baggage belts, gate allocation
- information technologies and telecommunications

- ground-handling services
- movement areas (runways and apron areas)
- technical facilities and services
- signage and guidance, and way-finding
- announcements
- information (including flight information)
- comfort (architecture, volumes, temperature, visual environment, smoking areas)
- provision of washrooms and toilets
- cleanliness
- staff courtesy, empathy, contact, accuracy (appropriate staff) and efficiency capacity
- "walking" times (connecting flight flow, embarkation or disembarkation flow)
- availability of lifts, escalators, moving walkways, people-movers, etc.
- provision for the disabled
- special services (business lounge, VIP)

Therefore, most of the airports worldwide currently apply passenger approach to measuring quality of service. The weak point of measuring quality of service at airports has been revealed.

2 New approach to measuring quality of service at airports (airlines' point of view)

New approach means that information related to quality of service at airports will not be obtained from passengers, but from pilots – first representatives of airlines.

Due to the fact that the previous list of services doesn't include the areas of services, quality of which can easily be measured (subjectively) by pilots, it is needed to specify those areas (see Fig.1). Quality of service at airports will be measured from the airlines' point of view.

This part of research has been done with support of research partners: Airport Bratislava, Air Slovakia, Air Traffic Services of the Slovak Republic, Czech Airlines, SkyEurope Airlines and Slovak Airlines.

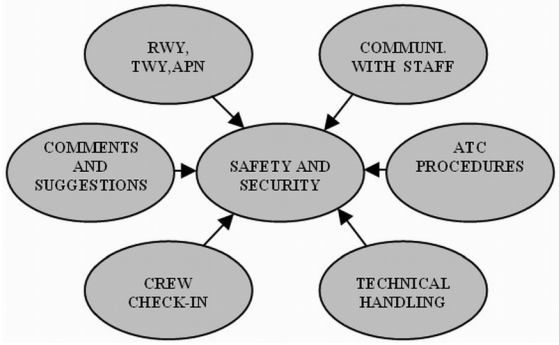

Fig. 1: Areas of research on quality of service measuring from airline's point of view

After the areas of research on measuring quality of service at airports from the airlines' point of view had been selected, questionnaire draft with questions related to the specific area was prepared (Fig. 2). Questionnaire is the best way of collecting data within the surveys. Its main advantage compared to other ways of collecting data is transparency of data, which enables its easy usage in the future. Four levels of satisfaction (quality marks) with quality of service have been determined: 4 – very good, 3 – good, 2 – fair and 1 – poor.

There are only subjective criterions applied in the questionnaire. We couldn't manage such an objective criterions within the research partners that would suit every partner as well as airport researched.

3 Quality of service at Airport Bratislava

56 pilots measured quality of service at Bratislava Airport. Their age ranged from 23 to 58 years and their total flight hours ranged from 500 to 20000. They had been selected as representatives of three of the five strongest airlines at Airport Bratislava (Fig. 5) – SkyEurope Airlines, Slovak Airlines and Air Slovakia. 14 questionnaires had to be rejected due to incompleteness or discrepancies.

Figure 3 shows indifference within the measuring quality of service at Airport Bratislava by pilots. Level of satisfaction is in the range from 1, 8 to 3, 6. According to Fig. 4, visual impression was "the best" average rated service at Airport Bratislava. Level of English language proficiency was "the worst" average rated service at Airport Bratislava.

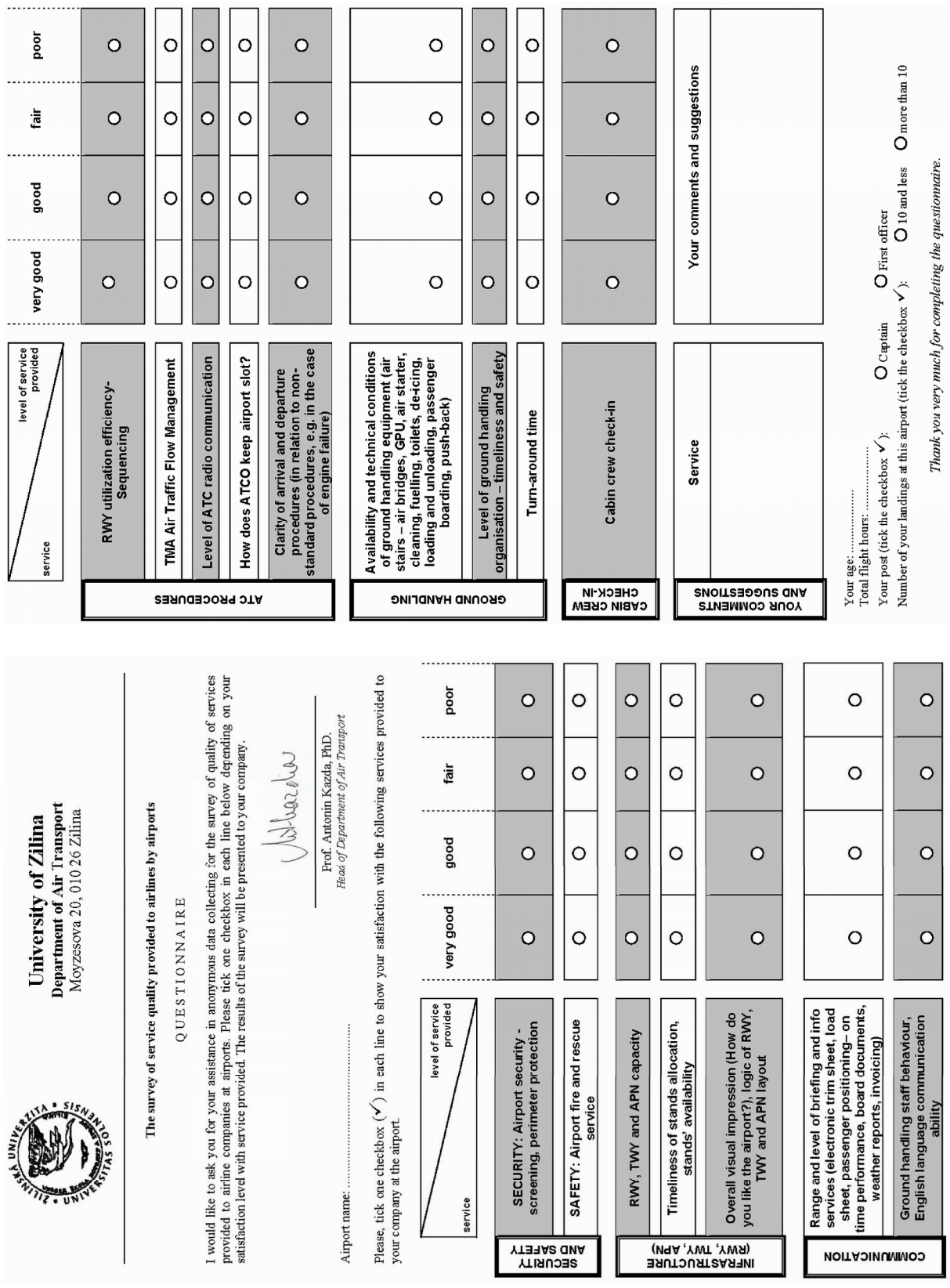

Fig. 2: Quality of service measuring questionnaire

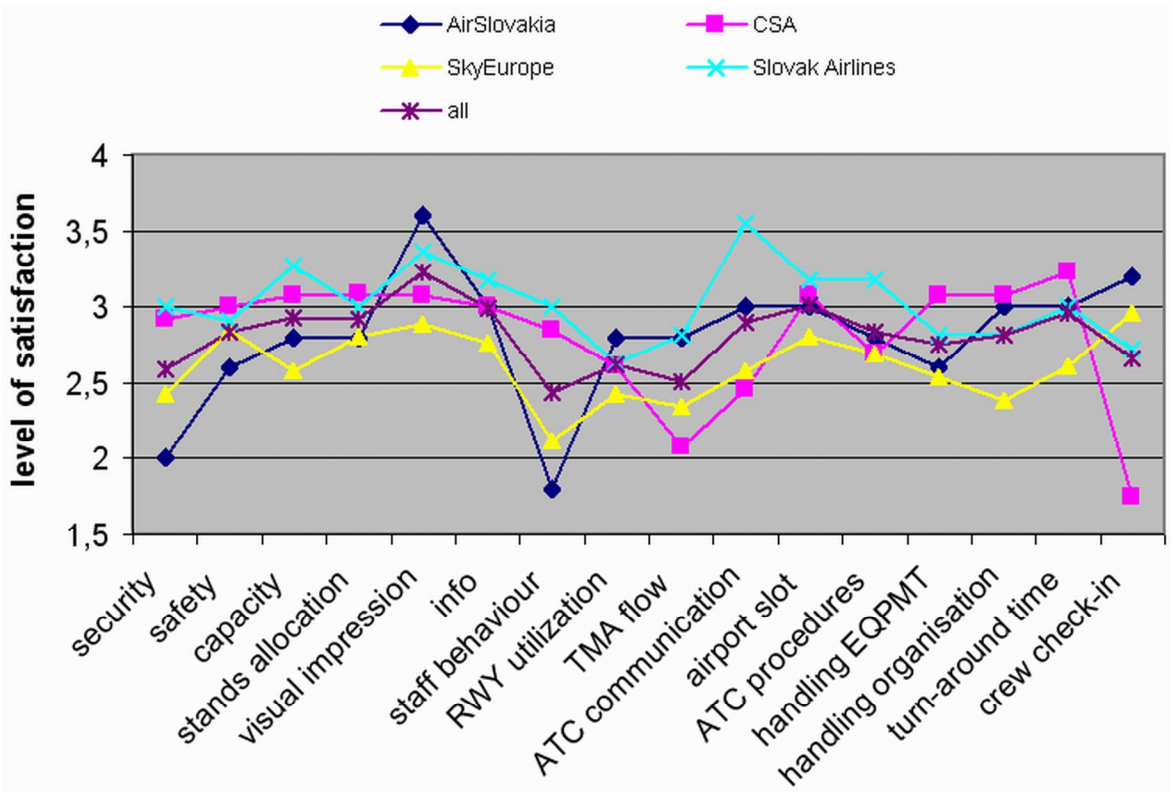

Fig. 3 Level of satisfaction with quality of service at Airport Bratislava measured by pilots

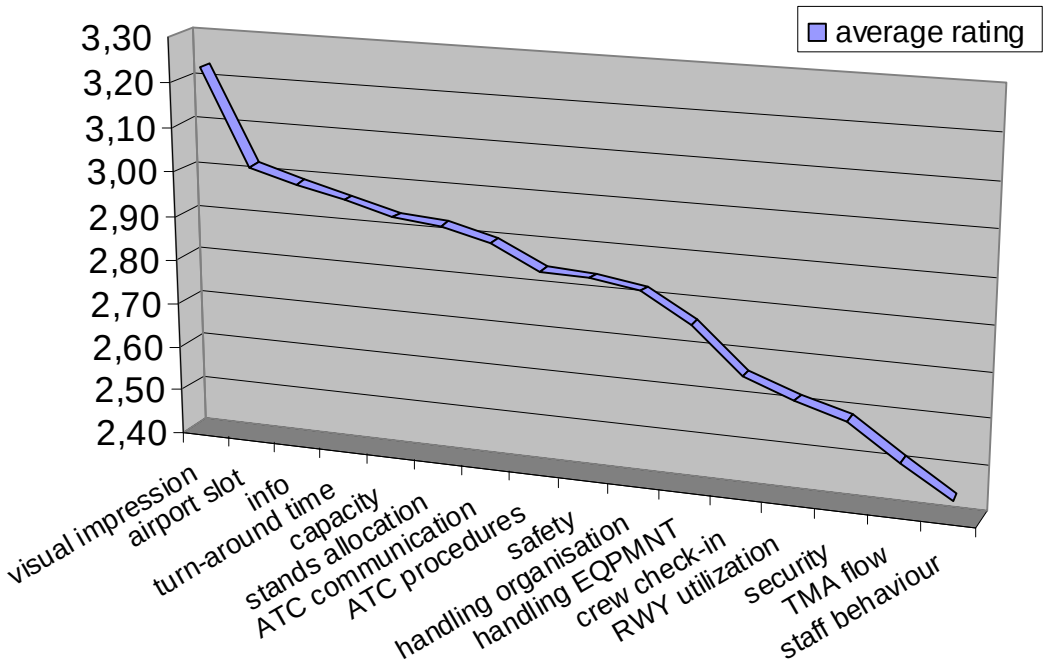

Fig. 4 “The best” and “the worst” average rated service at Airport Bratislava

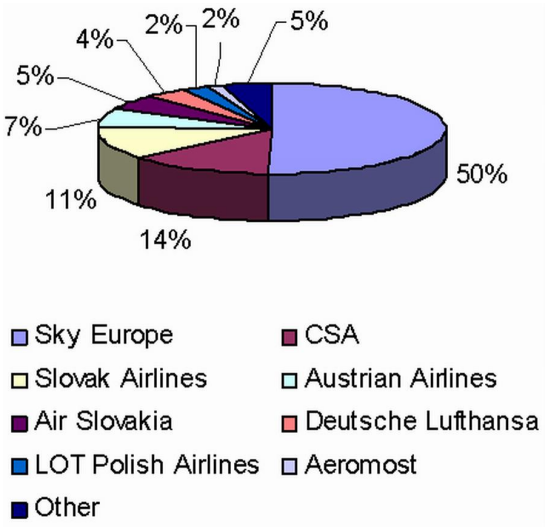

Fig. 5: Airport Bratislava passengers (2004)

Older pilots or more experienced (according to total flight hours) are sometimes considered to be more sceptical in evaluation quality of service at airports. It can be concluded that evaluating quality of service is dependent on pilot's age or total flight hours. So that it is needed to prove independence of such an evaluation.

According to the fact above, research results have been scanned to prove that evaluating quality of service at Airport Bratislava by pilots is independent from their age and total flight hours. Calculating of statistical data (needed to determine independence described above) is demonstrated on example of security service at Airport Bratislava. To demonstrate calculation, any other service can be used. The same methodology would be applied.

Tab. 1 shows absolute number of quality marks within the ranges of pilot's age. It means how many pilots in each range of age put quality mark within the range from 1 to 4.

	pilot's age				
marks	**23-31**	**32-40**	**41-49**	**50-58**	**total**
I.	1	2	0	0	**3**
II.	8	4	4	1	**17**
III.	7	7	3	2	**19**
IV.	1	1	1	0	**3**
total	**17**	**14**	**8**	**3**	**42**

Tab. 1: Absolute numbers of quality marks

Table 2 shows the computed theoretical values of random quantity.

$\mathbf{a_i}$	3	17	19	3
$\mathbf{b_j}$	17	14	8	3
$\mathbf{t_{ij}}$	**1,21**	**5,66**	**3,62**	**0,21**

Tab. 2: Computed theoretical values of random quantity

T_1 = 10, 71 (according to standard chi-square test methodology). Number of degrees of freedom has been found consequently $n=(4-1)\cdot(4-1)=9$ (it applies for Tab. 3). Critical value of c^2 distribution (if $n=9$, $\alpha/2=0{,}025$) is $c^2_{a/2}(n)=19$. $T_1(10, 71) < 19$ then, consequently $T_1 > c^2_{a/2}(n)$ is not valid. Hypothesis tested (that measuring quality of service at Airport Bratislava by pilots is independent from their age) is accepted. Because of level of importance α = 0, 05, it is concluded that measuring quality of service by pilots is 95 % independent from their age. All the data obtained from the research are usable without restriction and it is not needed to correct it due to dependency on pilots' age.

According to the previous independence testing, the same methodology is applied. The aim is to prove independence of measuring quality by pilots from their total flight hours.

Tab. 3 gives absolute number of quality marks within the ranges of pilots' total flight hours.

	total flight hours (thousands)				
marks	**0,5 - 3**	**3 - 6**	**6 - 9**	**9 more**	**total**
I.	1	1	1	0	**3**
II.	9	6	2	0	**17**
III.	6	9	1	3	**19**
IV.	1	2	0	0	**3**
total	**17**	**18**	**4**	**3**	**42**

Tab. 3: Absolute number of quality marks (total flight hours related)

$\mathbf{a_i}$	3	17	19	3
$\mathbf{b_j}$	17	18	4	3
$\mathbf{t_{ij}}$	**1,21**	**7,29**	**1,81**	**0,21**

Tab. 4: Theoretical numbers of random quantity

T1 = 10, 52 (according to standard chi-square test methodology). Number of degrees of

freedom has been found consequently $n=(4-1)\cdot(4-1)=9$ (it applies for Tab. 5). c^2 distribution critical value (if $n=9$, α/2=0,025) is $c^2_{a/2}(n)$=19. T1 (10, 52) < 19 then, consequently $T_1 > c^2_{a/2}(n)$ is not valid. Hypothesis tested (that measuring quality of service at Airport Bratislava by pilots is independent from their total flight hours) is accepted. Because of level of importance α = 0, 05, it is concluded that measuring quality of service by pilots is 95 % independent from their total flight hours.

	age dependency	total flight hours dependency
safety	9,02	7,21
capacity	9,31	7,88
stands allocation	8,79	6,79
visual impression	7,62	6,29
info	8,52	6,43
staff behaviour	11,79	12,45
RWY utilization	10,55	9,50
TMA flow	10,57	9,81
ATC communication	8,81	8,05
airport slot	8,43	6,14
ATC procedures	9,05	7,52
handling EQPMT	10,19	9,81
handling organisation	10,40	9,55
turn-around time	9,29	7,19
crew check-in	8,36	6,93

Tab. 5 Testing characteristics values table

Pilots measured 16 services provided to airlines at Airport Bratislava. It has been researched that no measurement has been dependent on total flight hours or age of pilots (as it is proved in the Tab. 5, where testing characteristic values T1 (age dependency and total flight hours dependency) are smaller than 19 (critical value of c^2 distribution within the level of importance α = 0, 05)).

4 Conclusions

Present fast growth of number of passengers transported turns Airport Bratislava into a stronger position on “small regional airports” market in Europe. Average growth of passenger transported is more than 30 % annually. Therefore Airport Bratislava will face increasing demand for quality of service in the near future. More low-cost carriers will consider Airport Bratislava great hub and gate to Eastern Europe.

Should Airport Bratislava stay attractive for low-costs it will need to improve most services: first of all security and safety (as research results proved). Quality of service needs to be measured periodically. An airline and its needs and expectations needs to be the midpoint.

Methodology described should be the handbook to perform measuring quality of service at Airport Bratislava within more airlines. According to that methodology comparison between Airport Bratislava and similar airport should be done.

Papers are accepted on the basis that they may be edited for style and language. The author himself is responsible for the correctness of the scientific content.

Abbreviations should be spelt out in full the first time they appear and their abbreviated form included in brackets immediately after. Words used in a special context should appear between single quotation marks the first time they appear.

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