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National Transport Policy using the Management and Service Evaluation for Transit Operators in Korea

THE 10TH EST FORUM IN ASIA

14-16 MARCH, 2017

MINISTRY OF LAND, INFRASTRUCTURE AND TRANSPORT, REPUBLIC OF KOREA

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Background

- Consensus for Environmental Protection
- Improving demand for better quality of Life
- Decreasing of Road congestion, traffic accident

Shift to the Transit-Friendly Policy

Improvement of the public transport service quality
Promotion of comfortable and luxurious transit surroundings

Outline of the Management and Service Evaluation

Purpose

- Voluntarily competition among transit operators
- Financial Support for best industry
- Induction of Benchmark through best practice sharing

Legal Bases

- Act on the support and promotion of Utilization of Mass Transit system 18th

Cycle

- 2years (even year) – first evaluation : 2006 year

Scope

- Railway, Express bus, Intercity bus, Local bus, Rural bus, Passenger terminal

Contents

- Business management, Financial soundness, Safety, Operation Management, Customer satisfaction

Outline of the Management and Service Evaluation

Score Management (20%) + Service (80%) + best Practice (100%)

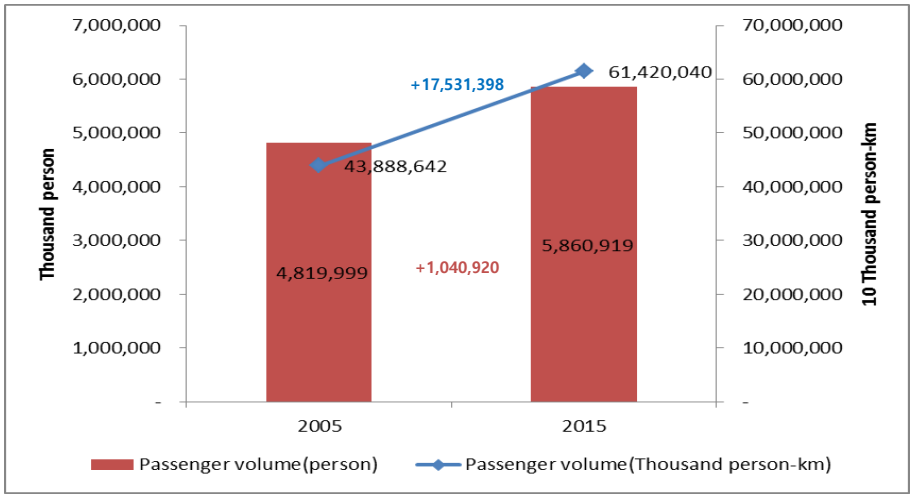
Class	Field	Item	Score
Management (20%)	Management (70)	Back pay	20
		Industrial accident insurance rate	5
		Driver's turnover rate	10
		Driver's wage rate	10
		Driver's welfare support	10
		Environmental promotion efforts	5
		Management improvement efforts	10
	Financial soundness (30)	Debt rate	10
		Flow rate	10
		Operating profit rate	10
	Total sum		100

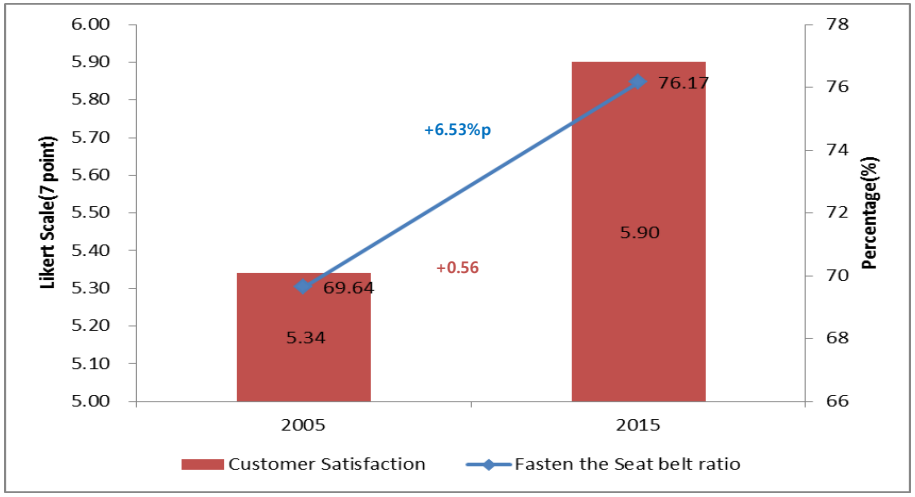
Class	Field	Item	Score
Service (80%)	Operation (25)	Dispatch plan compliance rate	8
		Fasten the seat belt rate	5
		Administrative disposition amount	3
		Number of inspection check	2
		Non-compliant vehicles rate	2
		Survey on vehicle operation	5
	Safety (45)	Vehicle standard compliance rate	5
		DTG submission & usage	10
		Traffic safety rating index	10
		Driver training	8
		Driver qualification compliance rate	10
		Emergency Preparedness efforts	2
	Satisfaction (30)	Customer satisfaction	20
		Automobile modernization rate	5
		Service improvement efforts	5
	Total sum		100

Class	Field	Item	Score
Best practice (100%)		Best practice	3

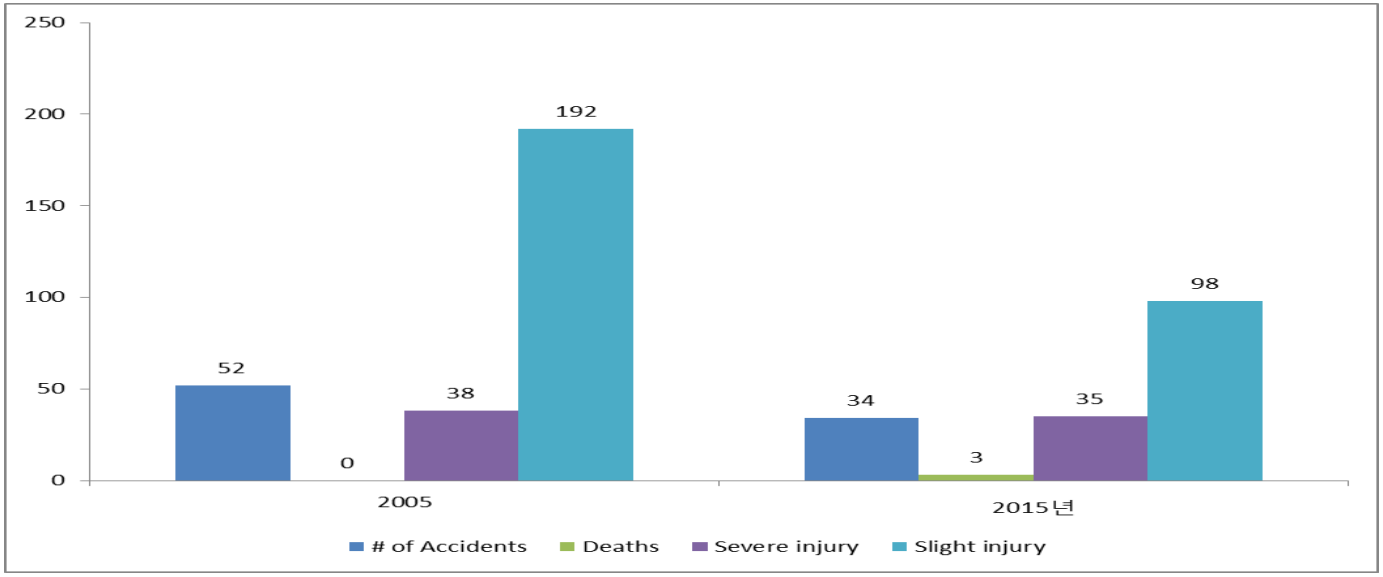
Comparison to Before and After the Evaluation

Passenger Volume





Accidents



Result of the Management and Service Evaluation in 2016

IPA Analysis

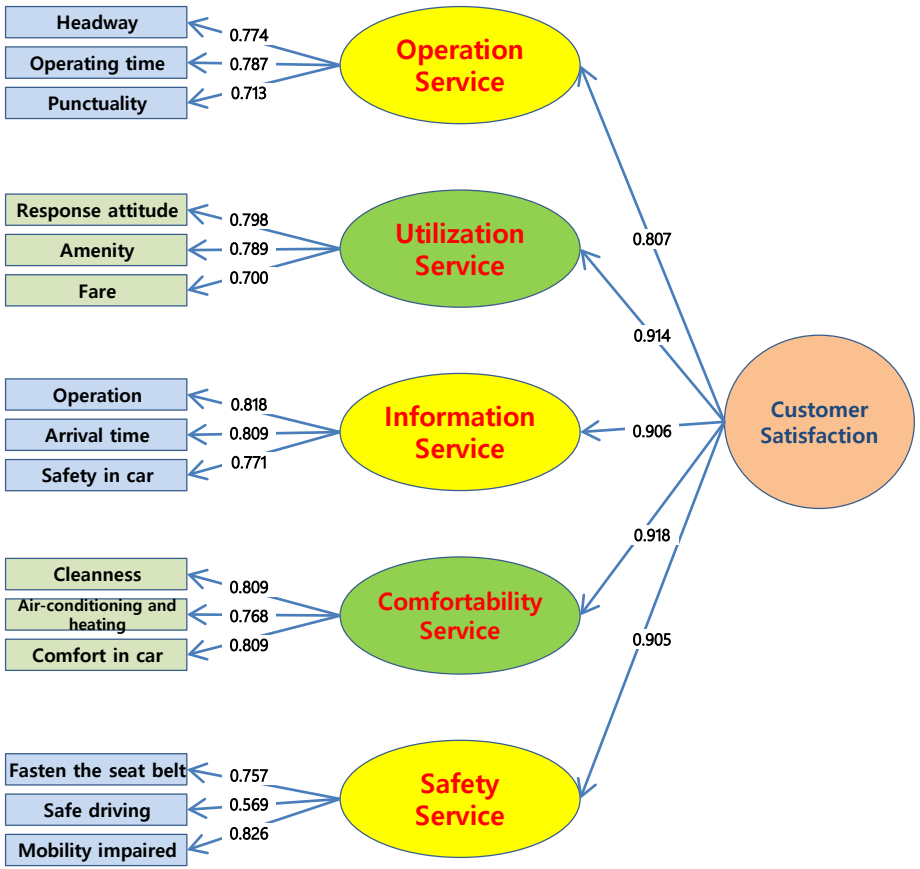
- (Concentrate) Headway, Amenities in car, Arrival time, Safety in car, Temperature, Interior/Exterior
- (Low priority) Fare adequacy, Ensuring safe distance

구 분	항 목	결 과
Operation Service	1. Headway	Ⅱ
	2. Operating time	Ⅰ
	3. Punctuality	Ⅳ
Utilization Service	4. Response attitude	Ⅳ
	5. In car Amenities	Ⅱ
	6. Reasonable Fare	Ⅲ
Information Service	7. Operating information	Ⅰ
	8. Arrival time	Ⅱ
	9. Safety in car	Ⅱ
Comfortability Service	10. Cleanness	Ⅰ
	11. Temperature	Ⅱ
	12. Interior / Exterior	Ⅱ
Safety Service	13. Fasten the seat belt	Ⅳ
	14. Ensuring safe distance	Ⅲ
	15. Safe driving	Ⅰ

Result of the Management and Service Evaluation in 2016

Customer Satisfaction

▪ **Structural Equation : Causal-effect relationship between transit service and user satisfaction**
- **The comfortable service** has the biggest effect on user satisfaction



Pri-ority	Latent Variables	Weight	Priority (Sub)	Exo-Variables	Weight
1	Comfortability Service	0.918	1-1	Cleanness	0.809
			1-2	Comfort in car	0.809
			1-3	Air-conditioning and heating	0.768
2	Utilization Service	0.914	4-1	Response attitude	0.798
			4-1	Amenity	0.789
			4-3	Fare	0.700
3	Information Service	0.906	3-1	Operation	0.818
			3-2	Arrival time	0.809
			3-3	Safety in car	0.771
4	Safety Service	0.905	4-1	Mobility impaired	0.826
			4-1	Fasten the seat belt	0.757
			4-3	Safe driving	0.569
5	Operation Service	0.807	5-1	Operating time	0.787
			5-2	Headway	0.774
			5-3	Punctuality	0.713

Best practice at Bus industry using a Big-Data and ICT

Safety management with the control system

- **Installing the DTG, GPS, LTE equipment in vehicle**
- **Collect the vehicle operation and real-time location information**
- **Driver's recess time, Outrage driving monitoring, Potential accident area management**

Best practice at Express bus industry

Daily dispatch report system using a mobile app.

- **Offering the dispatch, driving habit information into the mobile app.**
- **Reducing the workload, Providing real-time schedule, and Preventing accidents**

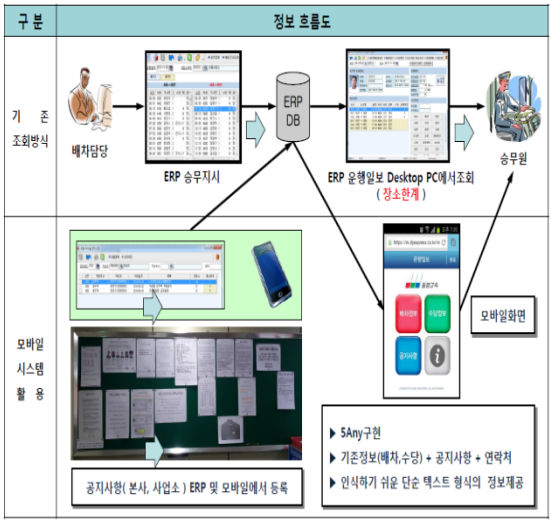
Daily dispatch inquire by call

Before (Year-2013)	Intro. (Year-2014)	After (Year-2015)	Rate(%)
190	85	3	-98.40%

System performance

Division	05~12. 2014	05~12. 2015
# of Connection (times)	1,215,558	2,393,680
Ratio	-	196.90%

라. 시스템 FLOW



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동양고속

마. 모바일 운행일보시스템(SMART 운행일보) 화면구성

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동양고속

Best practice at Express bus industry

Providing an Incentive through the DTG data analysis

- **Selecting the best drivers analyzing a DTG* data (2 times/year)**
  - **(except) at-fault drivers, traffic offenders, drunken drivers**
  - **(demerit mark) Fine/penalty, civil requests**
- **Decreasing the high-risk driving attitude & Traffic rule violating behaviors**

DTG* : Digital Tacho graph

Daily driving report	Driving distance > 300km Long-term speeding = 0 times Momentary speeding ≤ 2 times Acceleration ≤ 2 times Deceleration ≤ 2 times	=	Maintaining constant speed 1 times	→ Number of constant speed for 6months ▼ Point exchange

Division	Year-2012	Year-2013	Year-2014	Year-2015
Long-term speeding	778	315	220	-
Momentary speeding	223,405	199,684	197,196	182,715
Acceleration	61,031	27,134	25,583	27,403
Deceleration	28,847	1,354	380	250
Total	314,061	228,487	223,379	210,368
Difference	-	-85,574	-5,108	-13,011

Direction of Transit Policy with the Management and Service Evaluation

- Spreading the best practices conducted by operators
- Strengthen the surveillance to check as follows;

 - fastening the seat belt, signal violation, using a mobile phone while driving

 - and the breakdown of the vehicle facilities(such as light, frontage windowpane etc.).

- Safety training for accumulated penalty points drivers
- Guarantee a driver's recess time to provide a legal system
- Develop new evaluation methods for Chartered bus mode

Thanks for your attention

Questions and Answers