

Applying Change Management to Improving the Perception of the Speed Control System as Viewed by Drivers in the Kingdom of Saudi Arabia

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Abstract: As modern technology grows it creates new challenges for organizations, causing changes in their activities. They attempt to keep up with and adapt to modern systems and also try to adapt to modern ways of thinking and trends, characterizing such organizations as modern and highly developed. Change is deemed to be a major factor that pushes all economic, social, health and security organizations to adapt to new trends so as to achieve their aims. Security organizations strive for change so as to achieve one of their objectives, the safety and security of road users. The increasing frequency of traffic accidents is a source of apprehension for security services as such accidents cause human, financial and social losses. For instance, statistics indicate that the traffic accidents in Britain result in an average of 3,000 deaths and 40,000 serious injuries per year, and speeding was one of the causes of such incidents (DFT, 2007). As such, security organizations are seeking various means by which to decrease the number of deaths and injuries due to road accidents. Among such means is the use of the Speed Control System (an electronic detection system for traffic violations) to punish speeding drivers by charging fines. The application of this technology demands that the organizations and users should adapt to such systems through change management. Many researchers stress the importance of using change management to ensure the success of the security services in applying the electronic detection system for traffic violations. The aim of this research is to prepare road users to support this process of change and to prevent their resistance to it, to achieve successful planning and implementation and, finally, to assess and adjust the initiative so as to meet its objectives.

[Waheed Ahmed Alhindi, Faisal Abdullah Albawardy. **Applying Change Management to Improving the Perception of the Speed Control System as Viewed by Drivers in the Kingdom of Saudi Arabia.** *Life Sci J* 2013;10(10s):171-179] (ISSN:1097-8135). <http://www.lifesciencesite.com>. 27

Keywords: Change management, Speeding, Accidents, Casualties, Speed Control System, Fine

Part I: Introduction

1. Study problem

Many established organizations seek continuing change and improvement to ensure quality services are provided to their customers. However, the change and improvement process at the organizational level requires following a number of systematic stages in order to achieve success, particularly if such improvement is intended for the maintenance of the safety of citizens from all walks of life, such as in the area of traffic safety, where natural population growth and the consequent need for means of transportation must be taken into consideration, and the focus channeled onto the need for activating traffic regulations in order to ensure traffic safety and to curb traffic accidents, which are most often the result of vehicle users' negative practices. Due to the escalating numbers of traffic accidents, security organizations have become concerned about finding the proper means of handling them and are making concerted efforts to change some strategies related to the regulations and policies which cause this concern, in addition to providing financial support so as to curb such traffic accidents.

The most recent statistics in the Kingdom of

Saudi Arabia indicate that the number of deaths resulting from traffic accidents was 6,570 annually, i.e. 18 deaths per day. Added to this number is the fact that an accident causing an injury or disability takes place every fifteen minutes. Material losses resulting from traffic accidents are estimated at S.R. 13 billion annually. In 2009, statistics indicated that the number of traffic accidents added up to 485,931. They led to 6,458 deaths, which is 13 deaths for every 1,000 accident (<http://www.saher.gov.sa/a>).

Because of this increase in the number of accidents and deaths, the Ministry of the Interior sought change through incorporating and applying a speed control system so as to reduce the number of these accidents in a manner which would allow for smooth traffic flow inside and outside cities. The Ministry used all means available so as to reduce the effect of traffic accidents on society by using an Intelligent Transportation Systems supported by high-tech communication methods and round-the-clock information control systems.

Speeding on roads is one of the main causes of accidents, which in turn leads to death, injury, and social and economic loss (Finch et al., 1994) which affects the national economy. This also puts more

pressure on hospitals which limits the opportunities for citizens to benefit from other health services, as was confirmed by the director of Riyadh Traffic Department who said that 30% of beds in hospitals are occupied by people injured due to traffic accidents (Al-Mugbil, 2012). Therefore, the Kingdom of Saudi Arabia uses the Speed Control System on roads so as to curtail losses in property and lives. As confirmed by the director of the Riyadh Traffic Department, the application of this system resulted in lower death rates which fell from 166 to 127 over a period of six months (39 cases less), lower numbers of injuries (down from 876 to 842), and less damage to public property (down from around S.R. 74,000 to S.R. 58,000, i.e. 20% less) (Al-Mugbil, 2012). However, the application of this system met with reluctance represented by continuous criticism in various mass media, and sometimes with extreme reactions, represented by damage done to the Speed Control Cameras. The resistance to these changes, regardless of their advantages, necessitates conducting a study into the reasons behind this resistance to change and identifying how the Traffic Department can be successful in conducting and managing this change. The various themes related to the application of the system which have to be studied include identifying its objective; orienting and educating the beneficiaries; and implementing, evaluating and adjusting it. The objective here is to identify the advantages and disadvantages of applying the system as viewed by the beneficiaries and service provider.

2. Study objectives

This study aims to identify the change management process carried out by the General Traffic Department to ensure the success of the Speed Control System, and the advantages and disadvantages of applying it, based on the drivers' perceptions, by achieving the following sub-objectives:

1. Identifying the change management phases in organizations;
2. Identifying the awareness methods used by the Traffic Department to raise the awareness of drivers regarding the Speed Control System;
3. Identifying the advantages and disadvantages of applying the Speed Control System (mobile and fixed cameras);
4. Identifying the objectives of the Speed Control System according to drivers' perceptions.

Part II: Theoretical framework and related literature:

1. Theoretical framework:

To achieve the objectives of this study, this section tackles change management in organizations, the problems resulting from speeding, methods of overcoming such problems and the accident-reducing impact of using the Control System.

1.1 Change management in organizations

The environment business organizations are facing creates a number of opportunities and pressures for change which increases the need to apply change management. This will assist such organizations in fulfilling their objectives and meeting the needs of their clients so as to eliminate any pressures from the stakeholders. This applies to the public sector. Thus, the security agencies must attempt to meet the rising demand to provide security for drivers protecting them from the negative consequences of accidents, including deaths and injuries, and their economic, social and health-care consequences. Based on this escalating demand for change from various sectors, a host of researchers have confirmed that over the past twenty years change management has become a critical and pivotal issue for the success of organizations when implementing changes (Dawson & Andriopoulos, 2009, p.292). This is justified on the basis that change management assists organizations in making change in their projects, resources and the time used to implement such projects, not to mention in improving the projects prior to commencement of implementation (Westland, 2007, p. 12–13).

Among definitions used in this study is the one provided by Zilka who states that change management is the method followed by organizations to transfer their services from the current state of time to another state required in the future (Zilka, 2009, p. 188).

It is evident from these thoughts that change takes place as a result of the existence of either external or internal pressures or opportunities (i.e. a need for change), which makes organizations mobilize their efforts and ancillary resources within the specified time (i.e. preparedness) in order to make change successful and reach the target (implementation and evaluation).

To cope with these barriers, a number of researchers have proposed the idea that organizations are in control of the factors affecting the success of change. For instance, it is important that the managers responsible for change are aware of how to achieve successful change and how to overcome the barriers to change at these three levels (Daft, 2009; Singh, 2003, p.354).

By reviewing change management in organizations, it becomes evident that there are a number of models that can be used. Moreover, there are a number of success factors that have to be given attention for the change to succeed and to reduce the resistance it encounters. These concepts can also be used successfully in applying speed control and monitoring systems with the purpose of encouraging the beneficiaries and drivers to support the change process and ensure that they will not resist its implementation, and may even possibly ensure their support to achieve success.

1.2 The speed detection system

Traffic research and reports used in this study confirm that one of the major factors causing traffic accidents resulting in dangerous injuries or deaths is speeding on roads both inside and outside cities. Even though the United Kingdom has one of the best records in the European Union for road safety (Andrew, Jones, Sauerzapf & Haynes, 2008), statistics indicate that the mean average of annual accidents is 3,000 cases of death and 40,000 of severe injuries (DFT, 2007).

Such negative results have made governments draft a number of policies with the aim of protecting people and preventing them from suffering death or injury in traffic accidents. Elvik and Vaa stressed the need for accelerating the search for methods that lead to a reduction in speed, and a consequent reduction in accidents that lead to death and disability (Elvik & Vaa, 2004). However, in finding solutions to this problem many difficulties are encountered, including the difficulty of selecting methods that reduce deaths and injuries, and the high cost of such methods (Belin et al., 2010).

Traffic departments world-wide use a number of methods including road barriers, speed tests, speed control cameras, red traffic-light cameras and a combination of these. It was found that the use of automated technology significantly decreased the frequency of speed limit violation, controlling it, and enhancing the control of the traffic department, which consequently resulted in a reduction in road crimes, fewer instances of exceeding the speed limit and consequently a reduction in accidents and injuries (Blais & Dupont, 2005).

A number of researchers confirm that among the intervention strategies for solving the speeding problem is the efficient use of automatic speed camera systems (Belin et al., 2010). Most studies indicate that there are two types of speed control cameras. The first type is a mobile one operated by an operator which can be moved from one place to another. The second type is the fixed camera which is not operated by an operator, but is located in a specific place and monitors the speed of oncoming vehicles (Belin et al., 2010).

To achieve the objectives of the Speed Control System in the most cost-effective manner, the Ministry of the Interior represented by the General Traffic Department in the Kingdom signed contracts with a number of competent companies in the private sector. The purpose was to provide a proposal for automatic systems for traffic violation control and management, the so-called "SAHER" System, using the B.O.T. style (Build, Operate and Transfer). This was based on a contract between the State and the private sector in which the latter would furnish, prepare and invest in the system for a specified period of time. The private sector, after the end of investment period specified in

the contract, would deliver a system to the State that is in good condition and appropriate for use so that it would be used to generate full profits. When interviewed, the director of the traffic department in Riyadh confirmed that the income generated from violations would not go directly to the company, but will be collected from the Ministry of Finance, which will pay a specific amount to the company every three months, whether a fine is paid or not (Al-Mugbil, 2012).

Part III: Literature review

There are a number of studies which have been conducted to investigate the perceived goal of the Speed Control System, the impact of increasing the speed limits and the positive impact of applying the camera control system. A study conducted on 39 drivers concluded that, in the opinion of drivers, the aim of the Speed Control System is to provide a source of money for the government, in addition to also providing safety benefits on roads (Soole, Lennon & Watson, 2008). Another study conducted on two different systems in Australia and Sweden concluded that speeding in Australia is considered a deliberate crime which is committed by drivers who are ready to pay the cost for driving over the speed limit. The Swedish sample showed that it is based on the belief that the road safety is a priority for road users and that one reason for drivers driving their vehicles at high speeds is a lack of information and social support (Belin et al., 2010).

A number of studies have been conducted to investigate the degree that drivers exceeded the speed limits on roads in developed or in other countries. In studies conducted on highways in urban areas of four American states, it was noticed that between 11 and 78% of vehicle drivers exceeded 55 miles-per-hour (mph) with an average of 15 mph or more over the limit. The same study concluded that even though the speed limit is 75 mph in two states, it was noticed that 10–24% of vehicle drivers exceeded the speed limit and driving at more than 80 mph (IIHS, 2003).

Fixed and mobile cameras also have a positive impact on drivers' commitment to observe the speed limits near schools, where the speed average was reduced from 36 to 22 mph (IIHS, 1991).

In the Kingdom of Saudi Arabia, a poll was taken by the Riyadh Traffic website in 2007 www.rt.gov.sa. The aim was to identify the reasons for committing traffic violations. Of the visitors to the website, 3,000 participated in the poll. Of the respondents, 40% believed that the reasons leading to commitment of traffic violations were weak field control by the traffic enforcers, engineering errors in the road design, errors in the traffic-light timing, leniency with traffic violators, and mismatch between the violation and penalty. Of these, 21% believed that weak field control was the

cause of traffic violations, 18% believed that the cause was engineering errors or problems in the traffic-light timing, 8% believed that leniency with the violators was the cause for people committing traffic violations, and 5% believed that the cause was a mismatch between the violation and penalty. Finally, around 8% of those asked declined to reply as they believed that these were not the reasons which led to a traffic violation being committed (Aleqtisadia E-Newspaper, 2007).

A number of researchers referred to the importance of modern methods of controlling speed (Speed Control Cameras). Yet some drivers confirm the impact and benefit of traditional methods of enforcing the speed limit such as traffic police patrolling the roads which they felt had better results than the Speed Control Camera (Soole et al., 2008). This was confirmed by some drivers who believed that the presence of cameras does not affect their observance of the speed limit. Therefore, some researchers confirmed the importance of investigating this area to identify the cause of the lack of effect of mounted cameras on some drivers and why they believe that the traditional methods are better than the modern ones (Soole et al., 2008).

Part IV: Research methodology

In this part, the research methodology, population, data collection tools and method of analysis will be investigated.

1. Research methodology

In this study, the analytical descriptive (survey) method is used as it serves the research objectives effectively. This method may be the best one available for the researcher in social sciences who wishes to obtain information or data that enables him/her to describe a large society that cannot be observed or investigated using other methods. This method is also a unique one for measuring attitudes and identifying the situations prevalent in larger societies (Saunders, Lewis & Thornhill, 2009).

2. Determining the study population

The study population comprises vehicle drivers in the Kingdom of Saudi Arabia. A sample was randomly selected from seven administrative regions. The population was categorized into 13 layers, each one comprising an administrative region, to ensure representation of all regions of the Kingdom. These regions included Riyadh, Mecca, the Eastern Region, the Northern Borders, Qaseem, Jazan and Aseer in Southern Saudi Arabia. A survey team was assigned to collect data by distributing questionnaires to vehicle drivers in public places and in major airports in some cities such as Riyadh, Dammam and Jeddah. In addition, the team distributed a number of questionnaires to trainees of the Public Administration Institute in Riyadh as this can be considered an

appropriate venue for accessing members of all sections of society in all regions of the Kingdom. Around 2,000 questionnaires were distributed to the sample, with a total return of 950 (47.5%). After reviewing the questionnaires, 815 were found to be valid for analysis.

3. Data collection tool

In this study, a questionnaire was used to collect data from drivers in order to identify their attitudes towards applying the Speed Control System. Identifying their views regarding the system and traffic safety is critical to identifying their acceptance of change throughout all phases of applying the Speed Control System, and identifying their attitudes towards the advantages and disadvantages of applying the system and the level of acceptance and support. Koh and Wong proposed the use of questionnaires to collect data in this field to identify the views of vehicle drivers and understand their tendency to violate traffic regulations (Koh & Wong, 2007).

4. Reliability and validity

Validity: After designing the questionnaire based on the theoretical framework, it was developed in accordance with the recommendations provided by some academic staff at the Institute of Public Administration and King Saud University as well as from a number of workers in the field.

Reliability: The primary data analysis of the pilot sample and the Cronbach's alpha coefficient indicated that there were some particular statements that contributed to the low Cronbach's alpha, in addition to them having a weak connection with the statements as a whole, so they were deleted or adjusted. Cronbach's alpha was calculated for all statements scoring (0.849) which is considered good and reflects a high degree of reliability.

5. Data description and analysis

The data were analyzed using the SPSS:

- The frequency tables and percentage distribution of statements and personal variables are included in the study.
- The mean averages and standard deviation of the statements are calculated.

Part V: Descriptive analysis:

In this part, the field study results will be described and analyzed. They will be ordered according to the research themes. The subjects' demographic data, the results related to SAHER's perceived objectives, the subjects' attitudes towards the efforts made by the Traffic Department to educate drivers regarding the system, and drivers' attitudes towards the advantages and disadvantages of applying the system will all be reviewed. The following is a presentation of the major findings.

1. Personal data

A total of 815 questionnaires were valid for

analysis and were analyzed. The findings indicate that 36.3% of the sample are between 30 and 40 years of age and 36% of the sample are between 20 and 30 years of age, while 22.6% of the sample are 40 years old or older. The findings also indicate that 55.2% of the sample have a university degree or above, and the percentage of those holding a secondary school certificate or diploma is 42.4%.

2. Objectives of the SAHER System:

When asking the sample about their perception of the objectives of the SAHER system, the following table shows the percentage distribution for the subjects' attitudes towards the SAHER system:

Table No. (1) Objectives of the SAHER system as viewed by vehicle drivers

Objective	Number	%
Collecting traffic fines	508	62.6
Reducing accidents	454	56.0
Preserving lives	300	37.0
Controlling traffic flow	157	19.4
Others	53	6.5

From the table we can see that "collecting traffic fines" is considered to be one of the main objectives of the SAHER system in the view of 62.2% of the subjects. Even though the objective of collecting money from traffic fines is at the top of objectives mentioned by the subjects, they still confirm that many

appreciate importance of the system and its role in achieving its main objective, "reducing traffic accidents". This is indicated by 56.0% of the sample, which confirms their awareness of the role the system plays in reducing accidents, moreover, 37.0% of the participants expect the objective to be preserving lives. This result agrees with the findings of a number of studies which indicate that speed control camera systems contribute to reducing traffic accidents (Keall, Povey & Frith, 2001; Elvik, 2005; Hooke, Knox & Portas, 1996; Chen, Meckle & Wilson, 2002; DTLR, 2001; Jones et al., 2008).

3. Raising awareness of drivers regarding the speed control camera system

In order to identify the role of the Traffic Department in raising the awareness in society regarding the speed control camera system as one of the change stages the system is expected to pass through, the study tool comprised a group of statements to identify the subjects' attitudes to the role of the Traffic Department in raising awareness of the introduction of the system. The following table outlines the subjects' attitudes towards the awareness stage and the evaluation of the methods pursued by the Traffic Department in educating society before and after applying the system.

Table No. (2) Drivers' responses to introducing the over-speeding control system

S.	Statement		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean Average	Standard Deviation
1	Drivers were made aware of SAHER's objectives before implementation	F	44	126	105	223	297	2.24	1.258
		%	5.5	15.8	13.2	28.1	37.4		
2	Drivers were made aware of the SAHER system through audio-video mass media	F	32	131	132	258	243	2.31	1.182
		%	4.0	16.5	16.6	32.4	30.5		
3	Drivers were made aware of the SAHER system through the appropriate written mass media	F	31	139	153	246	226	2.37	1.178
		%	3.9	17.5	19.2	30.9	28.4		
4	Drivers were made aware of the SAHER system through the appropriate electronic mass media	F	28	91	133	268	268	2.17	1.125
		%	3.6	11.5	16.9	34.0	34.0		
5	The Traffic Department oriented drivers properly regarding SAHER implementation	F	29	57	74	286	345	1.91	1.068
		%	3.7	7.2	9.4	36.2	43.6		
6	Working on the drivers' conviction to observe the traffic regulations	F	60	150	140	213	224	2.50	1.288
		%	7.6	19.1	17.8	27.1	28.5		
7	Increase drivers' awareness through using warning signs indicating speed control cameras	F	52	214	123	221	191	2.64	1.277
		%	6.5	26.7	15.4	27.6	23.8		
8	Increase drivers' awareness by using signs showing the numbers and percentages of accidents and deaths which took place due to over-speeding	F	56	178	163	227	174	2.64	1.239
		%	7.0	22.3	20.4	28.4	21.8		
General Average								2.34	0.91

The findings regarding drivers' awareness of the system during application indicate that the Traffic Department did not make intensive efforts to make

drivers aware of it. The table indicates that one of the methods used by the Traffic Department on a limited scale to introduce the system was the use of signs

warning drivers of the presence of the speed control cameras. The same also applies to the informative signs showing the numbers and percentage of accidents and deaths that took place due to speeding. The mean average was 2.34, notwithstanding the informativeside indicated by Allen (2006) who confirms the necessity of providing efficient means of communication using the proper methods to reduce resistance to change. In addition, Kemp and Low (2008) confirm the value of

using pamphlets and media campaigns to support the introduction of change.

4. Advantages of applying the speed control camera system

To achieve the second objective of this study related to raising awareness of SAHER's advantages, the following table outlines drivers' attitudes towards applying SAHER using frequencies, percentages, mean averages and standard deviation.

Table No. (3) Drivers' attitudes regarding the advantages of applying the speed control camera system

S.	Statement		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean Average	Standard Deviation
1	The SAHER system detects speed violations to a high level of accuracy.	F	217	301	115	83	74	3.64	1.247
		%	27.5	38.1	14.6	10.5	9.4		
2	The SAHER system helps increase drivers' commitment to the speed limits on roads provided with cameras.	F	198	340	111	77	57	3.71	1.163
		%	25.3	43.4	14.2	9.8	7.3		
	The level of current fines helps in adjusting drivers' behavior in relation to commitment to the speed limit.	F	139	266	142	148	99	3.25	1.289
		%	17.5	33.5	17.9	18.6	12.5		
3	Doubling speeding fines helps in adjusting drivers' behavior in relation to compliance with the system.	F	99	200	119	156	212	2.77	1.409
		%	12.6	25.4	15.1	19.8	27.0		
4	The speed control cameras help in creating a societal culture of observing traffic rules.	F	97	240	166	159	128	3.02	1.283
		%	12.3	30.4	21.0	20.1	16.2		
5	The speed control cameras help in introducing a culture of observing traffic rules.	F	82	230	194	158	123	2.99	1.240
		%	10.4	29.2	24.7	20.1	15.6		
6	The speed control cameras are installed on the basis of importance and risky sites.	F	65	133	123	193	279	2.38	1.330
		%	8.2	16.8	15.5	24.3	35.2		
7	Warning signs are installed indicating the presence of cameras at sufficient distance.	F	55	126	135	175	302	2.32	1.309
		%	6.9	15.9	17.0	22.1	38.1		
General Average								3.37	0.94

The findings indicate that there is variation in perceptions regarding the advantages of applying the system. The mean averages vary between 2.32 and 3.71. The findings can be reviewed as follows:

The drivers' commitment to compliance with the speed limits on the roads provided with cameras was considered the greatest advantage achieved by applying the system whereby the mean average scored is 3.71. This finding agrees with the findings of a number of studies indicating that speed control cameras contribute to reducing vehicle speed (Hooke, Knox & Portas, 1996; Chen, Meckle & Wilson, 2002; Retting & Farmer, 2003; Wilson et al., 2006).

One of the advantages considered to have been achieved by applying the system was the high degree of accuracy in detecting speeding which had a mean average score of 3.65. The third place is scored by the statement indicating the creation of a societal culture of observing traffic rules with a mean average of 3.02. This is followed by the statement indicating that the

speed control cameras did help drivers adopt a culture of observing traffic rules, which scores a mean average of 2.99.

The findings related to whether the installation of speed control cameras was based on the importance and level of risk of sites indicates that this is not largely considered to be the case, as the mean average is 2.38. In addition, we can see from the findings related to the location of warning and information signs at sufficient distances before SAHER's camera that drivers indicate that they do not consider cameras are positioned at an appropriate location in terms of distance, as this scores a mean average of 2.38.

5. Disadvantages of applying the speed control camera system

One of the study's objectives is to identify what is thought to be the main disadvantages of applying the system throughout the change management process.

Table No. (4) Drivers' attitudes regarding the disadvantages of applying the speed control camera system

S.	Statement		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean Average	Standard Deviation
1	Drivers' slowing down suddenly to avoid over-speed fines at places provided with speed control cameras	F	439	238	46	30	43	4.26	1.087
		%	55.2	29.9	5.8	3.8	5.4		
2	Subjectivity of the criteria determining the speed limits on one road (on the speed limits signs)	F	381	239	78	46	45	4.10	1.149
		%	48.3	30.3	9.9	5.8	5.7		
3	Speed limits which are inconsistent with the technical specifications of some roads	F	425	227	62	49	29	4.22	1.069
		%	53.7	28.7	7.8	6.2	3.7		
4	Non-Arabic speakers did not receive attention when the speed limit signs are designed	F	349	208	138	54	32	4.01	1.127
		%	44.7	26.6	17.7	6.9	4.1		
5	Exaggerated speeding fines	F	458	146	81	49	54	4.15	1.237
		%	58.1	18.5	10.3	6.2	6.9		
6	The speed control camera system has become a financial burden on the individual	F	503	152	64	38	33	4.33	1.084
		%	63.7	19.2	8.1	4.8	4.2		
7	Lack of communication updates for the drivers to notify them of violations	F	276	210	162	95	42	3.74	1.208
		%	35.2	26.8	20.6	12.1	5.4		
8	The drivers not being notified of speeding violations leads to weak achievement of the system objectives	F	239	247	149	77	46	3.73	1.181
		%	31.5	32.6	19.7	10.2	6.1		
9	The presence of (mobile) speed camera on the right side of the road, not on the left which is closer to the driver	F	225	183	265	63	55	3.58	1.179
		%	28.4	23.1	33.5	8.0	7.0		
10	Lack of a clear strategy for appealing fines	F	443	152	97	36	37	4.21	1.134
		%	57.9	19.9	12.7	4.7	4.8		
11	The system did not give a probation period (3 months) to accept and convince drivers so as to assist in its application	F	478	143	86	31	41	4.27	1.135
		%	61.4	18.4	11.0	4.0	5.3		
General Average								4.07	0.84

The findings of the table indicate that there are perceived disadvantages to applying the speed control camera system. The mean average varied between 3.58 and 4.33 out of 5. This refers to a high level of disadvantages as viewed by the drivers. The general mean average of perception of the disadvantages of applying the system scores 4.07 with standard deviation 0.84, which confirms a high level of consistency among the subjects' attitudes regarding this theme. The following is a presentation of these findings:

- 83% of the sample indicated that the system has become a financial burden on individuals scoring a mean average of 4.33. This may agree with Needham (1999) who indicates that beneficiaries may resist the change process as it may cause harm to some of them. Therefore, the service provider needs to share the change process with

the beneficiaries and explain the benefits to them so that the resistance changes into acceptance.

- The statement referring to drivers not being giving a probation period to become convinced and to accept the system so as to assist in its applications scores a mean average of 4.27.
- The slowing down of some drivers suddenly to avoid speeding fines in areas where cameras are installed scores a mean average of 4.26. This is due to the absence of information signs warning of speed control cameras.
- The statement indicating the speed limit is considered to inconsistent with the technical specifications of some roads scores a mean average of 4.26.
- Exaggerated speeding fines and lack of an appeals strategy for traffic violations score mean averages of 4.15 and 4.21 respectively.

Part VI: Recommendations**Based on the findings the researchers have the following recommendations:**

- Improving citizens' perception of the speed control system and its objectives by continuing to raise awareness of the system's benefits.
- Putting up information signs indicating the position of the speed control camera based on high standards in terms of quantity, location, size, and clarity; it is recommended that they carry a clear message educating the driver on the position of the speed control cameras.
- Creating an efficient communication system notifying the violator of the violation at an appropriate time so that the objective of the ticket is achieved.
- When a speed control camera is installed, it is recommended that a probation period is instituted prior to issuing tickets. During this period, the driver is notified of having committed the violation and he should declare his intention not to commit it again.
- Various communication media and the Traffic Department should inform drivers about cameras in order to educate drivers on applying the system on these roads.
- Conducting continuing studies to learn about drivers' views regarding awareness and any problems related to application.
- Setting up appropriate criteria, developed to fit the new changes, for using the cameras, and publishing them in a guidebook to be used for reference when needed.
- The degree of risk on the road or the number of traffic accidents should be one of the major criteria for determining the positions of the speed control cameras.
- Creating an integrated work system shared between the Traffic Department and the Private Sector Companies concerned with applying the system and bearing the responsibility for its application.
- Giving the violating drivers access to the means to verify as violation on the traffic website in terms of time, speed, and picture, and offering them an easy way to appeal it.
- Developing a strategy to build a culture of drivers observing the traffic rules regardless of the presence or absence of speed control cameras.
- Educating drivers through workshops at schools, universities, institutes, and government and non-government organizations on the system's objectives and its role in reducing traffic accidents.

Acknowledgement: The authors are thankful to the Deanship of Scientific Research, King Saud University Riyadh for funding the work through the research Group project No RGP-VPP-317.

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9/12/2013