Traffic Management in San Pascual, Batangas

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Abstract - *Traffic management functions directly or indirectly affect the lives of people. The management's failure to perform effectively may affect them in terms of security, financial status and personal endeavors. This study entitled "Traffic Management in San Pascual, Batangas" aimed to determine the effectiveness of traffic management functions of San Pascual, Batangas. It used descriptive data through pre-survey, interview and self-made questionnaire for Traffic Management Group Personnel, PNP member, commuters/pedestrians and motorists. The traffic management function of San Pascual, Batangas was rated less effective specifically traffic economy, ecology and traffic education. Respondents assessed the traffic management function of San Pascual, Batangas differently when grouped according to age, civil status and educational attainment. Researchers recommended that traffic education campaign, dialogue, advertisement about recent statistic on traffic and vehicular accidents maybe provided to update the citizens about present road conditions while LTO may be strict in giving rigid examination for applicants for driver's license. The proposed plan of action may be utilized after being approved by the person responsible.*

Keywords: *Traffic management, of effectiveness of traffic management function*

INTRODUCTION

Traffic Management is the process of adjusting or adapting the use of an existing road system to meet specified objectives without resorting to substantial new road construction ("Urban Traffic Management", n.d.). Traffic management had pillars that

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help for the solution of traffic problems that road users encountered day by day which comprised traffic enforcement, traffic education, traffic engineering, traffic ecology/environment and traffic economy. It is a term used to embody the activities undertaken by a highway transportation agency to improve roadway system safety, efficiency, and effectiveness for both providers and consumers of transportation services (Sigua, 2008).

It also refers to all agencies having responsibilities for ascertaining traffic flow requirements, such as planning, funding, construction and/or maintaining public facilities for such movement. Further, it also refers to all agencies responsible for licensing, approving, restricting, stopping, prohibiting or controlling the use of these facilities (De Castro et. al, 2011).

In the Philippines, most of the barangay roads are unpaved village-access roads built in the past by the Department of Public Works and Highways (DPWH), but responsibility for maintaining these roads have now been devolved to the Local Government Units (LGUs). However, despite having a large road network built over the country, large parts of the road network continue to be in poor condition and only 20 percent of the total road network is paved. Traffic jams and other traffic-related problems are also cause by accidents and ongoing road constructions. Beside these, undisciplined drivers, passengers and pedestrians, poor traffic control system and poor implementation of traffic laws are the most obvious causes of traffic congestion according to Delizo (2014). There are several government agencies which deal with traffic management. These agencies include the Metropolitan Manila Development Authority (MMDA), Department of Transportation and Communications (DOTC), Department of Public Works and Highways (DPWH), Traffic Engineering Center, Philippine National Police-Traffic Management Group, and the Land Transportation Office. According to Lidasan as mentioned in a news report, poor coordination among government agencies occurs since their functions and responsibilities often overlap. The Philippine government has been pushing to improve the transportation system in the country through various projects ("Traffic Management", 2009).

In the report of Esmeralda (2013) that in 2011, there were approximately more than 15,200 road accidents across the country

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as documented by the Philippine National Police – Highway Patrol Group (PNP-HPG). This was an estimate as there were a total of 14,795 road accidents from January to November 2011. There were also 1,399 individuals killed and 5,700 more injured due to road accidents in the said year. And 90.17 percent of the total deaths due to road accidents happened in the National Capital Region (NCR) according to PNP-HPG reports.

In the fast years, the population of Batangas is increasing day by day and people are facing traffic problems in this province particularly in the area of San Pascual municipality. Unfortunately, road users have a little road sense and perhaps, no respect for the traffic rules. This fact has also added to road mishaps. One that also brings traffic is the companies like First-Gas Corporation, Chevron Company and Caltex Company and establishment such as churches, schools, businesses and markets especially during peak hours. And even the capacity of the road network is not adequate enough to accommodate the traffic. The traffic in the area had not been adequately managed.

In the area of Batangas for instance, commuters and passengers are commonly stocked at the area of Bauan, San Pascual and Sta. Rita Calzada going to and from Batangas City by a heavy congestion of vehicles either morning or late afternoon. Drivers, commuters and private vehicle owners waste their time and money when confronted by immobility due to heavy vehicle congestion which may be attributed to narrow lanes that are inadequate for large volume of vehicles over a certain period of time, undisciplined drivers and vehicular accidents and technical problems experienced.

San Pascual, Batangas is one of the highly traversed area along Batangas road since it connects major artery to Batangas City. Being located between two progressing localities also experience problems related to the management of traffic. Many commuters complain about suggest movement of their vehicle, especially students coming from Bauan, Mabini and Lemery area. The area as described by road users, have narrow road that becomes largely insufficient specifically during high volume or peak hours. Looking closely to traffic law enforcement function, PUJ- drivers who disregard rules on overtaking, loading and unloading of passengers and speed limit seldom receive citation

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or warning from traffic enforcers or deputized authorities. This situation is augmented by absence or lack traffic signs, poorly painted pavements and road conditions that results to accidents. As reflected on the report of the rate of occurrence of accidents in San Pascual, Batngas from Batangas PPO in 2013, the highest accident rate occurred in September at 21 per month and in May and August both at 18 per month. In the same year, the lowest accident year rate occurred in June at 6 per month and in January at 8 per month and in March at 9 per month. In 2014, the highest accident rate occurred in January at 19 per month, in July at 18 per month and in November at 16 per month. The lowest accident rate occurred in September at 4 per month, in October at 7 per month and in December at 8 per month. Months of the year have no bearing on the accident rate.

Vehicular accidents occur on a daily basis and vary in severity. In unfortunate cases, road accidents lead to fatalities. If the numbers stated above were daunting, even more alarming are the statistics culled from all over the country (Esmeralda, 2013).

For commuters passing through the highway of San Pascual, frustration and disappointment are felt when travelling to and from school in Batangas City. It is easy to get on the jeepney going to Batangas City because it is highly available. However, the difficulty and delay is experienced when approaching highway of San Pascual. Large volume of vehicles, narrow road, lack of traffic enforcers and undisciplined drivers and pedestrians can be highly observed thus, the students are late to their class for multiple times because the traffic was not being managed well. Others have had to adjust their schedules and leave their homes earlier in order to get to class on time.

Hence, the researchers are prompted to conduct this study. This paper focuses on traffic management in San Pascual, Batangas; the current traffic conditions and the effectiveness of agencies involved in traffic management. Conducting this study beneficial for a traffic officers in dealing with traffic flow, enforcement of traffic laws, ordinances, rules and regulations without fear or favor in order to reduce if not eliminate traffic problems and prevent other contributory factors that lead to vehicular and traffic accidents. This will serve as a guide and a

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good background in the exercise of effective traffic management once already in the service.

This study attempted to awaken every individual on the causes and effects of traffic problems. Hence, the authors believe that these compiled notes should also be read by any individual not only by Criminology students.

Furthermore, the authors try to present to impending issues on traffic in different views: traffic enforcement as seen by the traffic enforcers and traffic management as viewed by the pedestrians, the motorists, traffic violators, other traffic way users and concerned sectors of our society.

OBJECTIVES OF THE STUDY

The study focused on the traffic management in San Pascual, Batangas. Specifically, it aimed to determine the profile of respondents in terms of participant, age, gender, civil status, educational attainment and type of vehicle driven; determine the level of effectiveness of traffic management function of San Pascual, Batangas in terms of traffic enforcement, traffic engineering, traffic education, traffic environment/ecology and traffic economy; determine if there is significant difference on the effectiveness of traffic management functions of San Pascual, Batangas when grouped according to profile variables; and propose an action plan and improve traffic management functions of San Pascual, Batangas.

METHODS

Research Design

The study used the descriptive method of research. This method describes and integrates what exist. Descriptive research is used to provide systematic description that is factual and accurate as possible (Atienza et.al, 2008).

Participants of the study

The participants of the study were traffic monitoring group, police officers assigned to traffic division and motorist/ commuters. A total of 75 respondents participated in the study which included 9 Traffic Management Group personnel (TMG);

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6 Philippine National Police members assigned in the Traffic Division and 60 commuters/ pedestrians and motorist. In this study, respondents were chosen purposively.

Instrument

This research is descriptive in nature so the data collection was done in three ways: pre-survey, interview and self-made questionnaires that is composed of two parts. Sets were composed of prepared questions formulated and sequenced to draw out data. The first part was the profile of the respondents in terms of age, sex, civil status, educational attainment and occupation. The second part was the status of the traffic along San Pascual highway as perceived by the motorist, pedestrian and law enforcement sector. The third part assessed how effective is the traffic agencies in the execution of their functions.

Procedure

This study was conceptualized by the researchers through the help of their adviser where books, journals, manuals, operational manuals, and unpublished materials and internet were used as their references. The researchers conducted informal interview to road users of San Pascual particularly the motorists. Likewise, researchers personally visited San Pascual Police Station to gather data and determine the number of officers involved in Patrol and Traffic. Moreover, the permission of Traffic Management Group of San Pascual was also sought along with determining the number of its enforcers.

Data Analysis

Upon the accumulation of the questionnaire, data gathered were tallied, tabulated, analyzed and interpreted. Different statistical tools were used. Frequency count and ranking were used to determine the position of the items laid in the questionnaire. Weighted mean was used to determine the level of effectiveness of traffic management function of San Pascual, Batangas. Analysis of Variance (ANOVA) was used to determine is there existed significant differences on the effectiveness of traffic management function of San Pascual, Batangas when grouped according to profile variables. The given scale was used to

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interpret the result of the data gathered: 3.50 – 4.00 – Very Effective (VE); 2.50 – 3.49 – Effective (E); 1.50 – 2.49 – Less Effective (LE); 1.00 – 1.49 – Not Effective (NE)

RESULTS AND DISCUSSION

Table 1. Distribution of Respondents According to Profile (N = 75)

Participant	Frequency	Percentage	Rank
Traffic Monitoring Group/PNP	15	20.00	3
Motorists	31	41.30	1
Commuters/Pedestrians	29	38.70	2
Age			
15 – 19	10	13.30	3
20 – 24	9	12.00	4.5
25 – 29	17	22.70	1
30 – 34	13	17.30	2
35 – 39	9	12.00	4.5
40 – 44	6	8.00	6.5
45 – 49	6	8.00	6.5
50 and above	5	6.70	8
Gender			
Male	61	81.30	1
Female	14	18.70	2
Civil Status			
Single	34	45.30	2
Married	39	52.00	1
Widow/er	2	2.70	3
Educational Attainment			
High School Graduate	25	33.30	2
College Undergraduate	23	30.70	3
College Graduate	26	34.70	1
Post Graduate	1	1.30	4
Vehicle Driven			
Private	18	24.00	1
PUV	12	16.00	2

Table 1 shows the percentage distribution of the respondents according to their profile. Majority of the respondents were motorists with a frequency of 31 or 41.30 percent followed by commuters/ pedestrians which got the frequency of 29 or 38.70

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percent and lastly the traffic management group/ PNP with a frequency of 15 or 20.00 percent.

As to age, majority of them belonged to 25-29 age group at a frequency 10 or 13.30 of percent followed by 30-34 age group at a frequency of 13 or 17.30 percent, next were 15-19 age group at a frequency of 17 of 22.70 percent while the ages 20-24 age group and 35-39 age group with a frequency of 9 or 12.00 percent and the ages 40-44 age group and 45-49 age group got a frequency of 6 or 8.00 percent and the least is 50 and above age group with a frequency of 5 or 6.70 percent.

As to gender, majority of the respondents were male with a frequency of 61 or 81.30 percent and female group accounted to 14 or 18.70 percent.

As to civil status, the married respondents accounted a frequency of 39 or 52.00 percent followed by single group with a frequency of 34 or 45.30 percent. The lowest is the widow/ widower group with a frequency of 2 or 2.70 percent.

With regards to their educational attainment, majority road users were college graduate with a frequency of 26 or 34.70 percent followed by the high school graduate at a frequency of 25 or 33.30 percent. College undergraduate accounted to 23 or 30.70 percent and the lowest were obtained by the post-graduate group at a frequency of 1 or 1.30 percent.

As to vehicle driven, drivers of private vehicles got a frequency of 18 or 24.00 percent and PUV drivers accounted to a frequency of 12 or 16 percent.

On the report of Menjares (2015), there are more than 7.3 million registered vehicles in the Philippines (Philippine Statistics Authority, 2012), with more than 4.1 million of it comprising of motorcycles and tricycles (Philippine Statistics Authority, 2012). Jeepneys make up the second most number of vehicles, counted at more than 1.7 million in 2012 and cars have the third most quantity at 852,225 (Philippine Statistics Authority, 2012).

Table 2 shows the effectiveness of traffic management function of San Pascual, Batangas in terms of traffic enforcement which got a composite mean of 2.56 and a verbal interpretation of effective.

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Table 2. Effectiveness of Traffic Management Function in terms of Traffic Enforcement

	Indicators	WM	VI	Rank
1.	Apprehension of traffic violators.	2.69	Effective	2
2.	Processing of the traffic accident scene.	2.83	Effective	1
3.	Enforcement of traffic laws, rules and regulations and ordinances.	2.63	Effective	3
4.	Directing and controlling of traffic movement.	2.36	Less Effective	4
5.	Coordinating with other traffic agencies.	2.29	Less Effective	5
	Composite Mean	**2.56**	**Effective**	

This table shows that traffic enforcement is effective in their function of processing of the traffic accident scene which got the highest weighted mean of 2.83. The apprehension of traffic violators came in second with a weighted mean of 2.69. The enforcement of traffic laws, rules and regulations and ordinances got a weighted mean of 2.63 followed by directing and controlling of traffic movement with weighted mean of 2.36. The lowest weighted mean of 2.29 was obtained by coordinating with other traffic agencies proved to be the least significant of the factors that contribute to the effectiveness of the traffic management.

This indicates that processing of the traffic accident scene constitutes the most important aspect of traffic enforcement according to the respondents. Apprehension of traffic violators and enforcement of traffic laws, rules, regulation and ordinances were considered almost equal contribute to the effectiveness of the traffic management but only second to the processing of the traffic accident scene. Directing and controlling of traffic movement and coordinating with other traffic agencies are least aspects that contribute to the effectives of the traffic management.

During the processing of the traffic accident scene, the identification of who is responsible for the accident can determined as well as the deterring causes and sequence of events during vehicle collision. This is usually accomplished by reconstruction that results in an in-depth collision analysis. These accident reconstructions are valuable in investigating cases involving fatalities and when physical injury is involved. These

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accident reconstructions are also useful in developing recommendations for rendering roads and highways safer, and also in improving safety aspects of motor vehicle designs.

Traffic enforcement deals mostly on the implementation and enforcement of traffic laws and rules and regulations. The agencies/offices that are involved in enforcement of traffic laws are Land Transportation Office (LTO). This office is responsible for the following: vehicle registration; vehicle inspection; drivers licensing (examinations, suspensions, and revocations) and to police on stolen or wanted vehicles. Legislative bodies included are the senate, congress, provincial boards, and city and municipal councils. They are responsible for the passing and/or amending of laws and/or ordinances. Police traffic enforcement is not limited to the Philippine National Police – Traffic Management Group but it includes all government personnel who are duly authorized for the direct enforcement of traffic laws such as; The Metropolitan Manila Development Authority (MMDA) for the National Capital Region (NCR); Police Auxiliaries and LTO Fling Squad (Atienza, 2011).

Table 3. Effectiveness of Traffic Management Function of San Pascual, Batangas in terms of Traffic Engineering

	Indicators	WM	VI	Rank
1.	Supervision and maintenance to the application of traffic control devices such as traffic light signal, pavement markings and traffic signs	2.45	Less Effective	4
2.	Maintenance of the condition of traffic signs.	2.33	Less Effective	5
3.	Maintenance and repair program of constructions of national roads, highways and streets.	2.56	Effective	3
4.	Designation of loading and unloading area.	2.63	Effective	1
5.	Development of new design or elevated walkways, overpass, pavement design, shoulders etc.	2.60	Effective	2
	Composite Mean	**2.51**	**Effective**	

Table 3 shows the effectiveness of traffic management function of San Pascual, Batangas in terms of traffic engineering

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which got the composite mean of 2.51, which can be rated as effective. The indicators considered the designation of loading and unloading areas proved to be the most effective, having ranked the highest with a weighted average of 2.63. The development of a new design or evaluated walkways, overpass, pavement markings and shoulders ranked second with a weighted mean of 2.60 followed by maintenance and repair program of constructions of national roads, highways and streets at ranked 3 with a weighted mean of 2.56. The less effective of the indicators were supervision and maintenance to the application of traffic control devices such as traffic light signal, pavement markings and traffic signs (2.45) and maintenance of the condition of traffic signs (2.33).

The objectives of the traffic engineering include achieving efficient, free and rapid flow of traffic; preventing traffic accident; simplifying police enforcement actions and performance; showing that good police actions and performance makes engineering plans effective and to presenting the close relationship of the pillars of traffic in the improvement of traffic problems (Atienza et.al, 2011).

According to Valdueza (2013), traffic engineering deals with the planning and geometrical designs of streets, highways and abutting lands and with the operation thereon. As their use are related to the safe, convenient and economic transportation of person and goals. Traffic Engineering is basically concerned with the efficiency of road design. It includes the proper upkeep of roads, sidewalks, pedestrian overpasses, traffic island and barriers. It also includes the provision of traffic signs, street sign, markings for pedestrian, vehicle traffic light, and removal of obstructions.

Table 4 shows that traffic education is less effective in their function of universities and colleges offer and conduct courses to private and public agencies regarding traffic safety subjects which got the highest weighted mean of 2.40. Developing traffic safety morality came in second with a weighted mean of 2.28 followed by integration of traffic safety rules in the elementary level with a weighted mean of 2.09 at rank 3. Updating the citizens about recent statistics on traffic and vehicular accidents rank 4 with weighted mean of 2.07 and the lowest

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weighted mean of 2.03 was obtained by use of various media to disseminate traffic information proved to be the least significant of the factors that contribute to the effectiveness of the traffic management. All of the five indicators carried a verbal interpretation of less effective. The composite mean of the five indicators was 2.17 which can which can be rated as less effective.

Table 4. Effectiveness of Traffic Management Function of San Pascual, Batangas in terms of Traffic Education

Indicators	WM	VI	Rank
1. Developing traffic safety morality.	2.28	Less Effective	2
2. Integration of traffic safety rules in the elementary level.	2.09	Less Effective	3
3. Use of various media to disseminate traffic information.	2.03	Less Effective	5
4. Updating the citizens about recent statistics on traffic and vehicular accidents.	2.07	Less Effective	4
5. Universities and colleges offer and conduct courses to private and public agencies regarding traffic safety subjects.	2.40	Less Effective	1
Composite Mean	**2.17**	**Less Effective**	

Atienza et.al, (2011) emphasized that the source of traffic education are schools (public and private) wherein traffic education can be carried out by imparting knowledge concerning traffic safety, training and practice in the actual application of traffic safety, and developing traffic safety morality. In the elementary level, traffic education is focused on safety and guides stressing traffic safety, classrooms discussions of accident, incidents and safety rules and organizing safety patrols. Secondary traffic education for high school students is geared towards school safety organizations. Higher education obtained in colleges and universities offering and conducting courses regarding safety subjects.

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Table 5. Effectiveness of Traffic Management Function in terms of Traffic Environment/Ecology

	Indicators	WM	VI	Rank
1.	Implementation of R.A. 8749 otherwise known as the "Clean Air Act. ‘’	1.88	Less Effective	5
2.	Directing the law enforcement agencies to implement the pollution control program.	1.96	Less Effective	3
3.	Prevention, control and abatement of air pollution from motor vehicles.	1.92	Less Effective	4
4.	Studying the changes in urban environment due to the scale and density of new urban concentration and new activities carried out.	1.99	Less Effective	2
5.	Ensuring the safety traffic routes and road environment.	2.15	Less Effective	1
	Composite Mean	**1.98**	**Less Effective**	

Table 5 shows the traffic management functions in terms of traffic environment/ ecology with a composite mean of 1.98, which can be rated as less effective. The indicators considered ensuring the safety traffic routes and road environment proved to be less effective, having ranked the highest with a weighted average of 2.15. Studying the changes in urban environment due to the scale and density of new urban concentration and new activities carried out ranked second with a weighted mean of 1.99 followed by directing the law enforcement agencies to implement the pollution control program at ranked 3 with a weighted mean of 1.96. The least effective of the indicators were prevention, control and abatement of air pollution from motor vehicles (2.45) and the implementation of R.A. 8749 otherwise known as the "Clean Air Act" (2.33).

Delizo (2009) stated any decision in modernizing system shall consider the following environmental effects: noise, vibration, air pollution, dirt, visual intrusion, loss of privacy, changes in amount of life, neighborhood severance (both physical and sociological), relocation, accident experiences, pedestrian journey and congestion and other benefits to vehicles. UBA (2016) noted that

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it is supremely important to adjust the emission limits to today's advanced technologies. The goal is for spatial planning to be coordinated far more closely with traffic related considerations than is now the case which would improve the quality of life in both urban and rural areas and would at the same time enable to reach the air quality and noise reduction objectives, among others.

Table 6. Effectiveness of Traffic Management Function of San Pascual, Batangas in terms of Traffic Economy

	Indicators	WM	VI	Rank
1.	Decreasing the price of fuel for motor vehicles.	1.81	Less Effective	4
2.	Analysing how traffic congestion affects the business and other economic activity.	1.93	Less Effective	1.5
3.	Developing solutions to the effect of traffic congestion to the slowing down of economic growth.	1.93	Less Effective	1.5
4.	Close coordination with private operators and business establishment owners.	1.79	Less Effective	5
5.	Proposing simple and speedy route for motorist and commuters.	1.87	Less Effective	3
	Composite Mean	**1.87**	**Less Effective**	

In Table 6, the effectiveness of traffic management was evaluated in terms of traffic engineering using five indicators. Analyzing how traffic congestion affects the business and other economic activity and developing solutions to the effect of traffic congestion to the slowing down of economic growth were the same weighted mean of 1.93 proved to be highest. The proposing simple and speedy route for motorist and commuters rank 3 with a weighted mean of 1.87 followed by decreasing the price of fuel for motor vehicles at rank 4 which got the weighted mean of 1.81. At rank 5, close coordination with private operators and business establishment owners proved to be the least significant of the

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factors with a weighted mean of 1.79. The composite mean of this table was 1.87 which can be rated as less effective.

Delizo (2009) stated that traffic operation is designed to expedite the movement of traffic. However, with the prevailing traffic congestion during rush hours in any given locality, traffic adversely affects the economic status of the commuting public.

One aspect affecting our economy is the unending increase of oil prices in the world market. Somehow programs must be instituted in order to minimize the ill effect of rising price of basic commodities. Delay resulting from traffic congestion affects not only the time of travel but the productivity of an individual as well.

Despite the Philippines' better-than-expected economic growth according to the report of Japan International Cooperation Agency (JICA), the country stands to lose up to P6 billion a day by 2030 because of worsening traffic jams if adequate solutions to ease congestion are not implemented (Francisco, 2014).

Table 7. Summary Table of Effectiveness of Traffic Management Functions of San Pascual, Batangas

Indicators	WM	VI	Rank
1. Traffic Enforcement	2.56	Effective	1
2. Traffic Engineering	2.51	Effective	2
3. Traffic Education	2.17	Less Effective	3
4. Traffic Ecology	1.98	Less Effective	4
5. Traffic Economy	1.87	Less Effective	5
Composite Mean	**2.22**	**Less Effective**	

Table 7 shows the summary table of effectiveness of traffic management functions of San Pascual, Batangas which got the composite mean of 2.22 and a verbal interpretation of less effective.

Traffic management is effective in terms of traffic enforcement which got the highest weighted mean of 2.56. Traffic engineering was effective came in second with a weighted mean of 2.51 followed by the less effective functions of traffic education which got a weighted mean of 2.17. Traffic environment/ ecology were effective with a weighted mean of 1.98 at ranked 4 and the least effective of five indicators was obtained by traffic economy with a weighted mean of 1.87.

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Based on the following tables, the computed F–values of the profile variables age, civil status and educational attainment were all greater than the critical value and the resulting p-values were less than 0.05 level of significance, thus the null hypothesis of no significant difference on the effectiveness of the traffic management of San Pascual, Batangas when grouped according to the aforementioned profile variables is rejected.

Table 8. Difference of the Effectiveness of Traffic Management Functions of San Pascual, Batangas When Grouped According to Profile Variable (α = 0.05)

Profile Variables	F_c	p-value	Interpretation
Participant	0.785	0.460	Not Significant
Age	2.558	0.021	Significant
Gender	2.095	0.152	Not Significant
Civil Status	4.632	0.013	Significant
Educational Attainment	3.661	0.016	Significant
Vehicle Driven	2.081	0.132	Not Significant

Legend: Significant at p-value < 0.05; HS – Highly Significant; S – Significant; NS – Not Significant

Table 8 shows the difference of the effectiveness of the traffic management functions of San Pascual, Batangas when grouped according to profile variables. This means that significant differences exist and that respondents have assessed the effectiveness of traffic management of San Pascual, Batangas in terms of the mentioned variables to be different. This also means that respondents, with different age range; single, married or widow/widower; and with different educational background have seen the effectiveness of the traffic management of San Pascual, Batangas in different level of perspectives.

Age is a second demographic variable frequently found to be related to risky driving. According to the study of Jakubowski (2012), younger drivers violate the law more often, are more involved in crashes, and suffer more fatal road accidents and they are considered a high-risk group in regard to: accident involvement, risky driving, violation of traffic laws and even parking illegally in spaces reserved for people with disabilities.

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Between the ages of 15-24 a young person is twice more likely to die from a road traffic accident than be fatally assaulted by firearms, a sharp/blunt object or intentional self-harm via hanging combined. Those in the 15-24 age categories are also four times more likely to die from a road traffic accident than from drug, alcohol or other substance poisoning (Yahia, 2014).

Meanwhile, marital status and experience had no effect on drivers' comprehension of signs. The results raise serious questions about the applicability of the traffic control devices worldwide (Makinde, 2014). The educated driver can easily acquire basic knowledge of driving and better abide the traffic rules and regulations (Abbasi, 2014).

Table 9. Propose Action Plan to Improve Traffic Management Functions of San Pascual, Batangas

Key Results Area	Strategies/ Activities	Persons Involved
1.Traffic Economy • To ensure close coordination with private operators and business. • To decrease the price of fuel for motor vehicles. • To propose simple and speedy route for motorist and commuters.	• Coordinate with proper agencies to provide efficient fuel pricing and to levy county fuel taxes to raise transportation revenues and reduce the demand for driving. Coordinate with proper agencies to: • assess probable roadway expansion; • assign routes for certain types of vehicle; • strictly implement the truck ban • Develop and market deep-discount transit fares to employers in areas well served public transit.	Operators and Drivers association, LGU, Department of Trade and Industry (DOTI) Operators and Drivers association, LGU, LTFRB
2. **Traffic Environment/ Ecology** • To ensure strict monitoring implementation of R.A. 8749 otherwise	• Coordinate with respective agencies and people to persuade or encourage the public to use bike for transportation. • Coordinate with grassroots level to develop and activate	San Pascual LTO and LTFRB unit, SPMS-PCR, LGU,

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known as the "Clean Air Act. '' • To prevent, control and abate of air pollution from motor vehicles • Direct the law enforcement agencies to implement the pollution control program.	"Clean and Green Traffic Scheme". • Strictly implement the anti-smoke belching policy specifically on highways.	Barangay Officials, DENR
3. **Traffic Education** • To maximize use of various media to disseminate traffic information • Update the citizens about recent statistics on traffic and vehicular accidents. • To integrate traffic safety rules in the elementary level.	• Provide pamphlet, posters or handouts for drivers and motorists regarding traffic safety rules and regulation including the statistical report of road accident to deter motorists of future violation that may result to accident or endanger others' safety • Coordinate with various school/institutions to incorporate road safety education among students in values education subject • Coordinate with PTA to include discussion on about unsafe driving behaviours and school transportation policies to remind parents of this great responsibility.	San Pascual LTO unit, LTFRB division PNP, LGU, School administrators

CONCLUSIONS

Majority of the respondents were motorist, within the age of 25-29 years old, single, male, married, college graduate and drove private vehicles. The traffic management function of San Pascual, Batangas was rated less effective by the respondents. Respondents assessed the traffic management function of San Pascual, Batangas differently when grouped according to age, civil status and educational attainment. An action plan to improve the traffic management was proposed to reduce the traffic problems along the highway of San Pascual, Batangas.

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RECOMMENDATIONS

Traffic education department may develop programs such as conducting dialogue or symposiums, advertisement campaign about recent statistic on traffic and vehicular accidents in order to update the citizens regarding present road conditions. San Pascual Municipal Police as well as Traffic Management Group of the LGU may consistently enforce traffic safety rules and regulation to improve the flow of vehicles on the road and minimize noise, pollution and crowding of vehicles on certain spots of the place.

Traffic education agency especially the Land Transportation Office (LTO) may be firm and strict on giving examination for applicants for driver's license and on the spot drug and alcohol test for drivers. The PNP and TMG may strictly implement laws pertaining to environment such as "Clean Air Act ". Traffic control scheme may be implemented by the LGU in coordination with LTO and LTFRB to minimize the volume of vehicle traversing the road area.

The proposed plan of action may be utilized after being approved by the person responsible. Further researches may be carried out in the area of traffic management with focus to different set of variables.

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