5

CHAPTER

TEMPORAL TRENDS

Human movement is influenced by the time, day and month of the year. It affects the vehicular movement and the number of accidents occurring at different times of the day, days of the week and months of the year.

A comparative analysis of the temporal trends of different types of accidents, hour wise, day wise and month wise reveals the following important /significant conclusions:

• Table 5.1 depicts the comparative figures of severity of accidents by the days of the week. In case of fatal accidents, it has been observed that total fatal accidents in 2018

have increased in comparison to year 2017.

• **Accidents on Friday and Monday decreased by margin of 10 and 3 respectively, but there is an increase in fatal accidents on all other weekdays.**

• **The number of fatal accidents were minimum on Wednesday (204) in 2018 as well as 2017 (196).**

Time wise analysis of fatal accidents, in figure 5.1(a) reveals accidents increasing gradually from 1700 hrs. (42) onwards to peak by 2300 hrs. (138), the highest figure of fatal accidents.

TABLE - 5.1
ACCIDENT TREND ON WEEKDAYS

| TYPE OF ACCIDENT	SUNDAY		MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY		SATURDAY		TOTAL	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
FATAL	238	254	251	248	232	259	196	204	215	229	224	214	209	249	1565	1657
NON-FATAL	736	655	731	746	681	699	716	677	758	666	745	703	741	712	5108	4858
TOTAL	974	909	982	994	913	958	912	881	973	895	969	917	950	961	6673	6515

TIME-WISE FATAL ACCIDENTS-2018
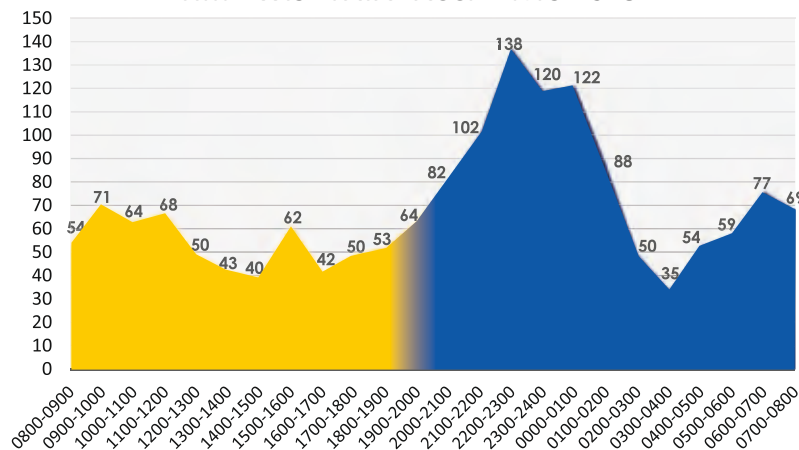
Figure 5.1(a)

- Thereafter, accidents start decreasing gradually till 0900 hrs. (54). The trend continues to remain low till 1500 hrs. (40). From 0900 hrs. to 1500 hrs., it remains low with some variations and again starts rising after 1500 hrs. The same trend persisted in the year 2017 also with marginal variations. (Table 5.4)

- **The reason for maximum number** of fatal accidents between **2000 hrs to 0200 hrs** is that, during this **period, the no-entry time restrictions** on commercial vehicles are lifted.

  - **It also overlaps with the evening peak hours of traffic.** There is a sudden surge in different categories of vehicles on the roads which creates the conditions for collisions, knock downs etc.

- **Poor light conditions on various roads** and streets also contribute in causing more accidents.

- **Drunken driving is obviously another big factor** in causing more accidents.

- After 0100 hrs, fall in volume of pedestrians, slow moving vehicles and non-commercial traffic on road and lesser movements of commercial traffic leads to minimum number of accidents after 0200 hrs.

TIME-WISE FATAL ACCIDENTS IN 2018 (1657)
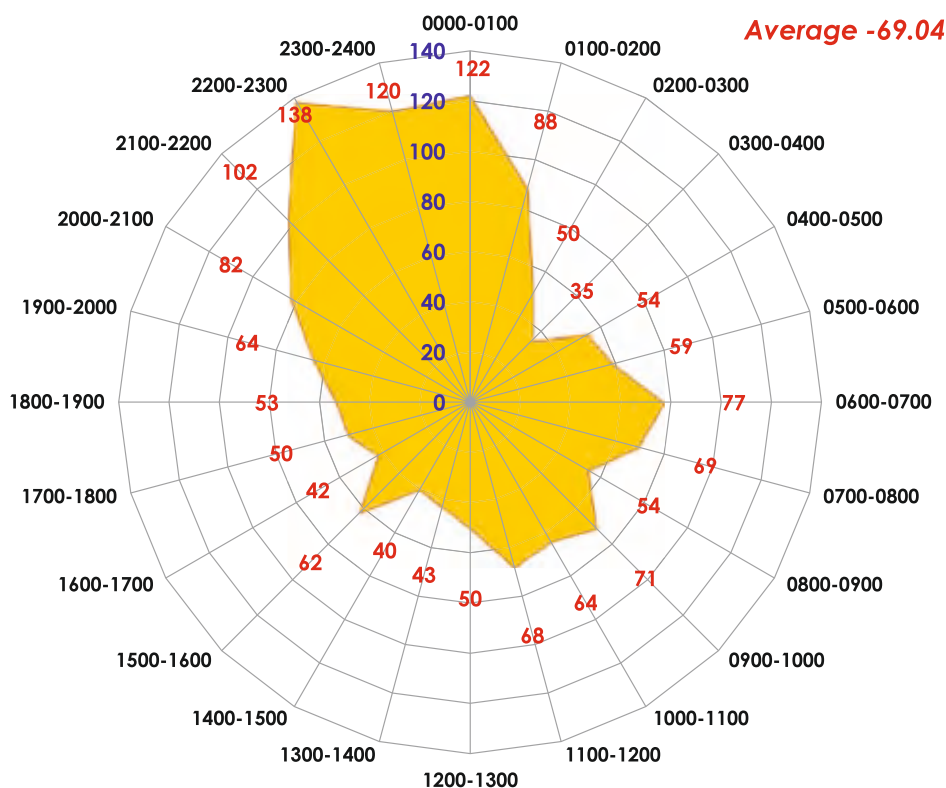
In 2018, maximum fatal accidents occurred in March (168), October (163), April (157) and September (142) while least occurred in December (121), May (123) and January (125).

TABLE- 5.2
MONTH WISE TRENDS FATAL OF ACCIDENTS IN- 2017 & 2018

MONTH	FATAL		INJURY		NON-INJURY		TOTAL	
	2017	2018	2017	2018	2017	2018	2017	2018
JANUARY	120	125	432	381	6	7	558	513
FEBRUARY	109	134	423	378	6	4	538	516
MARCH	142	168	434	407	6	7	582	582
APRIL	116	157	408	430	6	5	530	592
MAY	127	123	422	384	7	8	556	515
JUNE	132	128	366	380	9	6	507	514
JULY	124	124	427	418	5	6	556	548
AUGUST	128	141	421	416	7	7	556	564
SEPTEMBER	139	142	394	370	10	6	543	518
OCTOBER	159	163	462	435	11	8	632	606
NOVEMBER	121	131	432	374	8	6	561	511
DECEMBER	148	121	396	410	10	5	554	536
TOTAL	1565	1657	5017	4783	91	75	6673	6515

Accident classifications according to day and night shows that in 2018, 743 fatal accidents occurred during day time whereas 914 occurred during night time (Table 5.3).

- During 2017, there were 720 fatal accidents during day time and 845 during night time. Fatal accidents in day time were uniformly higher than those in night time in all the years from 1998 to 2011. **Since 2012, the number of fatal accidents recorded during day were less than during night.** This shows direct co-relation between visible and effective police presence during the day. In case of simple accidents, however, the day time figures are higher than night time figures.

Analysis of Time vis-a-vis Victim of fatal accidents indicates, most pedestrians were involved in fatal accidents from 1900 – 0100 hrs.

- **Time between 2100-0100 is the most vulnerable for occurrence of accidents involving scooterists / motor cyclists.** Most 'Self' induced accidents occur during the time slot of 2300-0400 hrs. In case of cyclists, the most vulnerable time is 0600-1000 and 2000- 2300 hrs. (Table 5.5).

Table 5.6 shows the distribution of impacting vehicles at fault (VAF) with the time slots.

- From the view point of **vehicles at fault, 765 (46.16%) vehicles were unknown** which implies they were hit and run cases, as against 44.72% in 2017. The accidents by 'unknown vehicles' have been recorded at all hours though the number is higher from 2000 – 0200 hrs. The high rate of hit and run accident indicates non-reporting of accused vehicle and the apathy of general public/eye witnesses to report the accidents.

TABLE – 5.3
ACCIDENTS CLASSIFIED ACCORDING TO DAY AND NIGHT

YEAR	FATAL ACCIDENTS		INJURY ACCIDENTS		NON-INJURY ACCIDENTS		TOTAL ACCIDENTS	
	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT	DAY	NIGHT
1998	951	727	3861	2633	303	212	5115	3572
1999	967	740	3652	2862	289	223	4908	3825
2000	894	705	4076	2759	355	256	5325	3720
2001	876	601	3761	2516	290	216	4927	3333
2002	853	563	3996	1891	265	165	5114	2619
2003	924	605	3937	1958	251	173	5112	2736
2004	1026	657	4042	1831	299	219	5367	2707
2005	1042	646	4342	1891	280	166	5664	2703
2006	1100	818	4151	2105	195	139	5446	3062
2007	1045	858	3604	2175	260	263	4909	3296
2008	882	825	3559	1945	151	201	4592	2971
2009	1143	1042	3207	1713	75	51	4425	2806
2010	1044	1041	3098	1811	31	31	4173	2883
2011	1040	1005	3271	1865	33	34	4344	2904
2012	886	906	2973	1814	54	60	3913	2780
2013	841	937	3600	2015	76	97	4517	3049
2014	804	825	4266	2519	102	107	5172	3451
2015	784	798	3895	2448	66	94	4745	3340
2016	718	830	3512	2186	61	68	4291	3084
2017	720	845	3056	1961	46	45	3822	2851
2018	743	914	2823	1960	35	40	3601	2914

DAY HOURS : 8AM TO 9PM.
NIGHT HOURS : 9 PM TO 8AM.

TABLE 5.4
ACCIDENTS CLASSIFIED ACCORDING TO THE TIME OF OCCURRENCE

S.NO.	TIME SLOT	SIMPLE ACCIDENTS					FATAL ACCIDENTS				
		2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
1	0000-0100	237	292	235	222	214	78	111	92	92	121
2	0100-0200	176	174	177	132	141	68	73	73	71	88
3	0200-0300	123	127	118	100	123	46	42	77	55	50
4	0300-0400	105	88	77	91	78	53	43	34	57	35
5	0400-0500	102	95	82	110	88	46	50	52	45	54
6	0500-0600	135	141	116	115	105	54	55	62	53	59
7	0600-0700	180	156	159	129	143	71	69	62	60	77
8	0700-0800	239	241	200	172	170	65	60	53	60	69
9	0800-0900	258	241	238	195	179	65	68	61	55	54
10	0900-1000	318	300	235	224	200	63	51	50	68	71
11	1000-1100	277	273	246	208	196	57	62	44	42	64
12	1100-1200	304	279	236	234	195	53	44	39	45	68
13	1200-1300	300	274	261	230	212	63	58	58	48	50
14	1300-1400	316	269	272	192	225	56	52	45	55	43
15	1400-1500	363	293	287	258	217	53	70	58	43	40
16	1500-1600	327	328	283	222	208	61	51	47	51	62
17	1600-1700	363	322	280	227	218	59	40	56	57	42
18	1700-1800	335	293	266	242	212	58	62	50	56	50
19	1800-1900	375	330	299	277	257	59	64	50	49	53
20	1900-2000	412	349	298	255	238	84	81	66	78	64
21	2000-2100	420	410	372	338	301	73	81	94	73	82
22	2100-2200	459	442	412	323	319	107	95	99	117	103
23	2200-2300	497	419	359	347	327	120	120	114	119	138
24	2300-2400	373	367	319	265	292	117	80	112	116	120
	TOTAL	6994	6503	5827	5108	4858	1629	1582	1548	1565	1657

TABLE-5.5
TIME Vs VICTIM (FATAL ACCIDENTS) – 2018

TIMESLOT	VICTIMS													
	HTV'S	LGV'S	BUSES	CAR/TAXI	TSR'S	SC/MC	ELECTRIC RICKSHAWS	CYCLISTS	CYCLE RICKSHAWS	PEDESTRIANS	SELF	PASSANGERS	OTHERS	TOTAL
0000-0100	0	2	0	5	4	47	0	0	0	55	7	0	1	121
0100-0200	1	2	0	14	3	25	0	0	0	30	12	0	1	88
0200-0300	0	1	0	5	1	17	0	2	0	17	7	0	0	50
0300-0400	1	3	1	3	2	12	0	0	0	10	2	0	1	35
0400-0500	3	1	0	5	1	15	0	1	0	21	6	1	0	54
0500-0600	1	0	0	5	4	16	0	2	1	24	6	0	0	59
0600-0700	1	5	1	2	1	13	1	5	0	41	7	0	0	77
0700-0800	1	0	0	0	0	20	0	4	2	41	0	0	1	69
0800-0900	0	0	0	0	2	14	1	2	2	30	3	0	0	54
0900-1000	0	0	0	1	1	23	0	4	0	37	5	0	0	71
1000-1100	0	0	1	3	0	23	0	0	0	31	5	1	0	64
1100-1200	0	0	0	3	1	21	2	3	0	33	4	0	1	68
1200-1300	0	1	0	1	0	18	0	1	0	25	4	0	0	50
1300-1400	0	1	0	0	2	15	1	1	0	20	3	0	0	43
1400-1500	0	0	0	2	1	13	0	1	0	22	0	1	0	40
1500-1600	0	0	0	1	0	28	0	2	0	28	1	1	1	62
1600-1700	0	0	0	0	0	15	0	4	1	20	1	1	0	42
1700-1800	0	0	1	0	0	14	0	2	0	29	4	0	0	50
1800-1900	0	0	0	2	1	14	0	3	0	31	2	0	0	53
1900-2000	0	0	0	0	0	17	0	1	0	41	3	1	1	64
2000-2100	0	0	1	0	1	25	0	3	1	43	8	0	0	82
2100-2200	0	0	1	3	0	46	0	5	2	34	9	2	1	103
2200-2300	0	1	0	2	2	60	2	5	0	60	5	1	0	138
2300-2400	0	0	0	2	1	51	0	2	1	47	15	0	1	120
TOTAL	8	17	6	59	28	562	7	53	10	770	119	9	9	1657

TABLE-5.6
TIME Vs VEHICLE AT FAULT (FATAL ACCIENTS) – 2018

TIME SLOT	VEHICLE AT FAULT							
	HTV'S	LGV'S	BUSES	CAR/TAXI	SC/MC	UNKNOWN VEHICLES	OTHERS VEHICLES	TOTAL
0000-0100	18	7	3	18	8	62	5	121
0100-0200	12	3	1	16	5	45	6	88
0200-0300	6	4	1	8	4	26	1	50
0300-0400	7	2	0	5	1	19	1	35
0400-0500	10	5	1	6	7	25	0	54
0500-0600	8	3	0	10	4	30	4	59
0600-0700	6	13	2	10	7	34	5	77
0700-0800	8	3	4	10	5	34	5	69
0800-0900	3	3	3	8	4	31	2	54
0900-1000	9	5	6	7	13	24	7	71
1000-1100	4	2	6	8	7	27	10	64
1100-1200	7	4	5	11	5	30	6	68
1200-1300	6	4	6	4	3	24	3	50
1300-1400	6	6	1	7	4	15	4	43
1400-1500	6	4	5	8	5	10	2	40
1500-1600	5	4	12	9	3	21	8	62
1600-1700	8	5	2	8	4	12	3	42
1700-1800	6	0	6	14	7	16	1	50
1800-1900	1	4	4	10	6	24	4	53
1900-2000	6	1	3	12	10	29	3	64
2000-2100	3	4	3	10	13	42	7	82
2100-2200	6	10	7	11	19	48	2	103
2200-2300	15	2	5	25	10	79	2	138
2300-2400	18	2	3	18	17	58	4	120
TOTAL	**184**	**100**	**89**	**253**	**171**	**765**	**95**	**1657**

- **HTVs committed fatal accidents** at all hours. However, number of accidents was highest between 2200 and 0200 hrs.
- **Cars were involved in fatal accidents at all hours of the day and night with higher numbers during night hours.** Cars caused most accidents in the time period between 2200- 0200 hrs.
- Buses caused most fatal accidents from 0700 – 1300 and 1500 – 1800hrs. **Two-wheeler riders caused most accidents from 1900- 2400 hrs.** (Table 5.6).

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