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## **CONSTRUCTION MOTOR VEHICLE ACCIDENTS IN SOUTH AFRICA: CAUSES AND IMPACT**

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# Introduction (1)

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- **Although MVAs as a subject area have captured the attention of researchers in other countries, this is not the case in South Africa**
- **The cidb report revealed that the predominating cause of fatalities is MVAs (cidb, 2009)**
- **This revelation corroborates a previous assertion that MVAs contribute substantially to fatalities and injuries in construction**
- **Despite the revelations in the 2009 cidb ‘H&S’, the uptake in MVAs related studies can be considered non-existent in the sector**

## Introduction (2)



**Construction workers being conveyed on rear of LDV, Port Elizabeth  
(Smallwood, 15 August 2013)**

## Research rationale

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- **In spite of increased awareness in the form of academic and media reports, MVAs appear to be increasing in South African construction**
- **In particular, there has been a steady rise in MVAs in South African construction since 2001 when available statistics are considered**
- **As a result of consequences concerning permanent disabilities, fatalities among construction workers and the general public, and the increasing cost per accident, it can be argued that there is major scope for reversing the MVA trend in South Africa**

# Methodology (1)

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- **The preliminary literature review led to an exploratory quantitative survey**
- **The survey was conducted among 62 medium and large ECMBA GC members**
- **Although, only 15 responses were received and included in the analysis of the data, the pilot nature of the study at this stage mandates a future rigorous empirical study**
- **Thus, the response rate of 24.2% realised for the pilot survey was deemed acceptable**
- **It is envisaged that the findings of this pilot survey will further inform future studies that are anticipated to use a mixed method approach**

## Methodology (2)

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- In this pilot survey, the self-administered questionnaire that was delivered per e-mail consisted of 10 questions, 4 of which were 5-point Likert scale type questions
- Due to the sensitive nature of the subject, demographic questions were not included, despite assurances of anonymity
- The limited number of responses inferred that only descriptive statistics in the form of percentages and mean scores could be computed for the presentation of the findings

## Findings (1)

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- **93.3% of respondents' organisations transported workers to and from and between construction sites**
- **26.7% of respondents' organisation's vehicles have been involved in accidents while transporting workers, 25% of which had had one accident, and 75% had had two accidents**
- **The accidents resulted in the following injuries: 1 fatality; 2 temporary disablements, and 2 medical-aid injuries**
- **LDVs were involved in all (100%) the accidents**

## Findings (2)

Category	Unsure	Minor.....Major					MS	Rank
		1	2	3	4	5		
Drivers / Operators	6.7	6.7	13.3	26.7	26.7	20.0	3.43	1
General workers	0.0	26.7	6.7	20.0	20.0	26.7	3.13	2
Semi-skilled workers	0.0	20.0	13.3	33.3	20.0	13.3	2.93	3
Skilled workers	0.0	20.0	40.0	13.3	13.3	13.3	2.60	4
Site management (supervisors, foremen)	0.0	42.9	14.3	28.6	7.1	7.1	2.21	5

Table 1: Extent of exposure or vulnerability of various categories of personnel to MVAs



## Findings (3)

Practice	Unsure	Minor.....Major					MS	Rank
		1	2	3	4	5		
Overloading of vehicles	7.1	7.1	0.0	14.3	7.1	64.3	4.31	1
Non-roadworthiness of vehicles / unsafe vehicles	14.3	7.1	7.1	7.1	14.3	50.0	4.08	2
Workers sitting on sides / or beds of vehicles	6.7	6.7	0.0	20.0	20.0	46.7	4.07	3
Worn tyres	6.7	13.3	6.7	13.3	26.7	33.3	3.64	4
Misjudgement / disregarding traffic control	21.4	0.0	21.4	7.1	28.6	21.4	3.64	5
Workers mounting / dismounting vehicles in motion	7.1	7.1	14.3	21.4	14.3	35.7	3.62	6
Inattentive driving of vehicles	21.4	7.1	7.1	21.4	21.4	21.4	3.55	7
Loss of vehicle control due to driver tiredness	28.6	7.1	28.6	7.1	14.3	14.3	3.00	8

Table 2A: Extent unsafe transport / traffic practices contribute to the occurrence of MVAs in South African construction

# Findings (4)

Practice	Unsure	Minor.....Major					MS	Rank
		1	2	3	4	5		
Loss of vehicle control due to unsecured loads	7.1	28.6	0.0	28.6	28.6	7.1	2.85	9
Loss of vehicle control due to alcohol abuse	35.7	14.3	7.1	28.6	7.1	7.1	2.78	10
Loss of vehicle control due to adverse weather	20.0	13.3	26.7	13.3	20.0	6.7	2.75	11
Loss of vehicle control due to brake failure	21.4	21.4	21.4	14.3	7.1	14.3	2.64	12
Lack of adequate construction site signage	28.6	14.3	35.7	14.3	7.1	0.0	2.20	13
Loss of vehicle control due to drug abuse	42.9	28.6	7.1	14.3	0.0	7.1	2.13	14

**Table 2B: Extent unsafe transport / traffic practices contribute to the occurrence of MVAs in South African construction**

# Findings (5)

Contributor	Unsure	Minor.....Major					MS	Rank
		1	2	3	4	5		
Lack of secured seats	20.0	0.0	6.7	6.7	26.7	40.0	4.25	1
Lack of seat belts	21.4	0.0	7.1	7.1	35.7	28.6	4.09	2
Non-wearing of seat belts	13.3	0.0	6.7	20.0	20.0	40.0	4.08	3
Lack of roll over protection	20.0	6.7	13.3	13.3	26.7	20.0	3.50	4
Lack of pre-start up inspections	21.4	21.4	7.1	28.6	21.4	0.0	2.64	5

Table 3: Extent contributors exacerbate the injuries incidental to MVAs in South African construction

## Findings (6)

Incident	Unsure	Limited.....Always					MS	Rank
		1	2	3	4	5		
Fall from vehicle in motion while getting on / off	13.3	6.7	6.7	26.7	33.3	13.3	3.46	1
Fall from vehicle in motion	26.7	0.0	13.3	20.0	33.3	6.7	3.45	2
Collision with other vehicles	14.3	14.3	14.3	14.3	35.7	7.1	3.08	3
Collisions between vehicle and other equipment	21.4	0.0	35.7	14.3	28.6	0.0	2.91	4
Crunched / run-over by highway vehicle	42.9	7.1	28.6	14.3	0.0	7.1	2.50	5
Crunched / run-over by manoeuvring vehicle	28.6	28.6	28.6	14.3	0.0	0.0	1.80	6
Worker struck by vehicle exiting work area	21.4	57.1	7.1	0.0	14.3	0.0	1.64	7
Worker struck by vehicle entering work area	21.4	57.1	14.3	0.0	7.1	0.0	1.45	8
Worker struck by vehicle inside work area	14.3	64.3	14.3	0.0	7.1	0.0	1.42	9
Crunched / run-over by vehicle entering the site	21.4	50.0	28.6	0.0	0.0	0.0	1.36	10

Table 4: Extent incidents eventuate due to MVAs in South African construction

# Conclusions (1)

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- **The respondent contractors use LDVs and flatbed trucks to transport workers to and from, and between construction sites**
- **A percentage of these contractors also simultaneously transport materials, plant and equipment, and workers**
- **Therefore, it can be concluded that workers are at risk and the incidence of MVAs in the course of construction is unlikely to reduce till such time that a strategy is evolved and appropriate interventions taken**
- **This conclusion is underscored by the finding that 26.7% of respondents' organisations had experienced such accidents**

## Conclusions (2)

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- **The implication of the literature reviewed (Emuze and Smallwood, 2012) and the preliminary empirical data is that MVAs and their attendant effects will continue to plague South African construction if suitable interventions are not implemented**
- **The significance of the study is that the minimisation of the direct and indirect costs of MVA related accidents has reached a 'tipping point', which requires a multi stakeholder solution**

## References

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- **Construction Industry Development Board (cidb) (2009) *Construction Health & Safety in South Africa Status & Recommendations*. Pretoria: cidb**
- **Emuze, F.A. and Smallwood, J.J. (2012) Construction Motor Vehicle Accidents in South Africa: Preliminary Findings. In: *Proceedings of CIB W099 International Conference 2012: Modelling and Building Health and Safety*, 10-11 September 2012, Singapore, 203-208**