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Motorised two-wheeler Rider Behaviour Questionnaire: State of the Art

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Abstract

Motorised Two-Wheeler (MTW) ownership has increased worldwide, especially in emerging countries. The growing usage of MTW vehicles has resulted in several issues, one of the most serious of which is an increase in fatality rates. Therefore, it is essential to understand the MTW rider behaviour for a safe operation and minimise crash likelihood. Motorised two-wheeler Rider Behaviour Questionnaire (MRBQ) is one such survey instrument used for this purpose. In previous decades, many researchers have attempted to examine numerous factors related to the MRBQ survey in various countries. This study aims to review research papers that have examined various factors used in MRBQ studies from various nations and highlight state-of-the-art conclusions. In addition, the study emphasises the research gaps that are critical for factors related to rider behaviour that can be incorporated in the MRBQ survey. This review will benefit the researchers working in the area of MTW safety and MRBQ studies, as well as be useful to decision makers for analysis and policy implementation.

Keywords: Motorised two-wheeler rider behaviour questionnaire, Rider safety, Rider behaviour, Motorised two-wheeler

1. Introduction

Motorised Two-Wheelers (MTWs) serve as a primary mode of transportation in most developing countries and are often used for leisure purposes (Vlahogianni, Yannis and Golias, 2012). Motorised two-wheeler includes both geared and non-geared vehicles. Examples are motorcycles (bikes), scooters, mopeds, and similar vehicles. MTWs possess several advantages over other modes of transportation, such as flexibility in usage, being economically sound, good manoeuvrability, convenience to use, parking space utilisation, and lower emissions rates. Sometimes, it has proven faster in dense urban areas than other modes of transportation (Das and Maurya, 2018). According to the study, heavy MTWs are more commonly used in the summer, whereas light MTWs are more commonly used in spring and fall. Heavy MTWs are favoured for leisure and travel, whereas light MTWs

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are utilised for work and day-to-day transportation (Bjornskau, Nævestad and Akhtar, 2012).

In recent years, the number of registered motorised two-wheelers has increased in emerging countries. Especially in nations like India, the growth was steadily increasing, where MTW vehicles registered are more than 70% of all registered vehicles (MoRTH, 2021). This increase in the growth rate of MTW vehicles may be due to ease in usage, cost-efficient and least parking space utilisation. Every day, thousands of individuals are killed or injured in traffic crashes. Millions of individuals are hospitalised every year following serious wrecks, and many people have never been able to work, play, or make a livelihood as they did before (Sreedharan et al., 2010). Nearly more than 50% of people killed in traffic crashes are young adults aged between 15 and 44, also many of these individuals are the family's primary source of income. MTWs are a susceptible type of road user with a higher crash risk (Bjornskau, Nævestad and Akhtar, 2012). The growing usage of MTW vehicles has resulted in several issues for the general traffic environment, one of the most serious of which is an increase in fatality rates (Damani and Vedagiri, 2021). Since they are vastly increasing in numbers and widely seen as being more aggressive on the road, it is critical to think about MTW riders as a separate category from other road users.

According to the findings, mostly MTW riders failed to accurately analyse information received from the traffic environment or the state of their vehicle (Otte, Jänsch and Haasper, 2012). The various MTW related crashes are linked to different rider characteristics (Bjornskau, Nævestad and Akhtar, 2012). The crash risk is influenced by the factors such as sex, rider's age, experience, MTW characteristics, exposure and road type. Interactions between these parameters as well as other factors, confound risk assessment (Sexton et al., 2004). However, variables like experience, age and exposure provide minimal insight into how to enhance rider safety. Understanding the relationship between rider behaviour and crash risk is possibly more effective because behaviour is subject to change via road safety initiatives (Elliott, Baughan and Sexton, 2007). As a result, precise monitoring of the MTW rider behaviour is essential. Therefore, the factors influencing MTW rider behaviour are of great concern when assessing the risk of being involved in the MTW crash in nearly all developing countries, where the percentage of MTW rider population and MTW related crashes are prevalent. Based on the author’s knowledge, this study is one of the few attempts to investigate the factors influencing MTW rider behaviour that is highly related to the likelihood of MTW being involved in a crash. This review highlights the various Motorised two-wheeler Rider Behaviour Questionnaire (MRBQ) instruments used in various countries, followed by shortlisting the various factors influencing MTW rider behaviour used in the previous studies.

The first section describes the motorised two-wheeler rider behaviour questionnaire and approaches used in various countries. The next section discusses the numerous factors influencing MTW rider behaviour that have been explored in previous studies. The last section summarises the outcomes of the study.

2. Motorised two-wheeler Rider Behaviour Questionnaire

MRBQ is a self-reported survey instrument that asks respondents to evaluate how often they take part in different behaviours with a Likert scale varying from ‘never’ to ‘almost all the time’, while riding the MTW (Sexton et al., 2004). Many researchers used different Likert scales in the MRBQ studies, such as 4-point scale (Putranto and Anjaya (2014); Sunday and Akintola (2010)), 5-point scale (Babajanpour et al., (2021); Setoodehzadeh

et al., (2021)) and 6-point scale was widely adopted by Möller et al., (2020); Ospina-Mateus, Jiménez and López-Valdés (2021) and many others. The very first MRBQ is based on Manchester University's Driver Behaviour Questionnaire (DBQ) created by Reason et al. (1990). The questions (items) suitable to MTW riders were extracted from the actual 50 DBQ items developed for the car drivers by Reason et al. (1990), and in addition, some new items have been added. Finally, the MRBQ was created with 43 items to deliver different measures of MTW rider behaviour (Sexton et al., 2004). It was further modified by Elliott, Baughan and Sexton (2007) and was widely used. Various researchers altered the MRBQ based on geographical area, rider behaviour measures, sample size, focus group opinion, factor analysis type, and modelling technique. Studies carried out in Australia, China, Columbia, India, Indonesia, Iran, Malaysia, Nigeria, Thailand, Turkey, UK, and Vietnam are discussed in this paper.

3. Factors influencing MTW rider behaviour

Due to the diversity of rider-related factors, it is the most challenging component in studying MTW rider safety (Vlahogianni, Yannis and Golias, 2012). As rider behaviour requires a human response, it is extremely difficult to model rider behaviour (Bjornskau, Nævestad and Akhtar, 2012). As a result, designing policy implications for MTW rider safety becomes incredibly challenging. For developing the MRBQ survey, researchers have measured various factors to assess MTW rider behaviour. Based on the findings of previous studies, factors influencing MTW rider behaviour can be categorised into error factors, including traffic error and control error (e.g. Sexton et al., (2004); Elliott, Baughan and Sexton (2007); Özkan et al., (2012)), violation factors such as traffic violations, speed violations, and safety violations (e.g. Motevalian et al., (2011); Sumit et al., (2021); Setoodehzadeh et al., (2021)), stunt factor (e.g. Ospina-Mateus, Jiménez and López-Valdés (2021); Sunday and Akintola (2010)), safety equipment factor (e.g. Stephens et al., (2017); Trung Bui, Saadi and Cools (2020); Babajanpour et al., (2021)) and rider's attitude factor such as speed-related aggressive behaviour, external disturbance and selfish behaviour (e.g. Putranto and Anjaya (2014); Sunday and Akintola (2010)). Figure 1 represents the flowchart of categorisation of factors influencing MTW rider behaviour explored in past studies. A review of the works undertaken on the factors influencing MTW rider behaviour and key findings are discussed in this section. Table 1 summarises the factors used in previous studies, the number of items, sample size, analysis techniques and key findings of the existing studies.

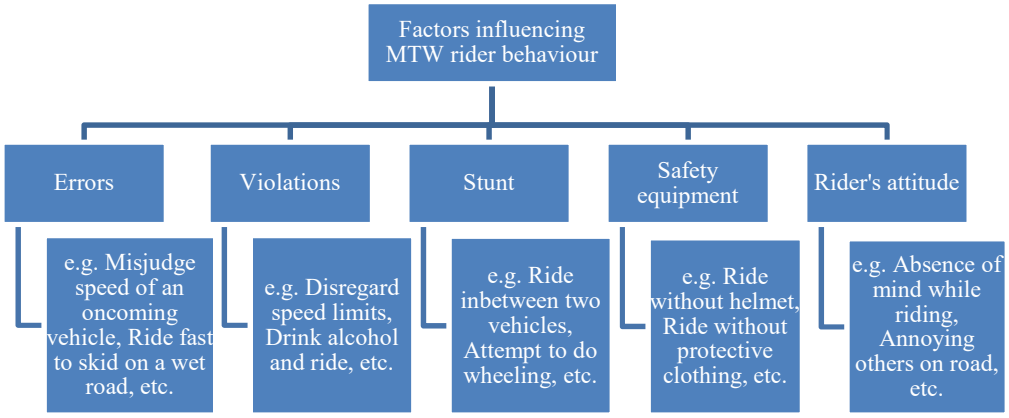

Figure 1: Categorisation of factors influencing MTW rider behaviour

3.1 Errors

The failure of scheduled actions to attain their anticipated outcomes was broadly described as an error. Errors were categorised into slips and lapses (unintentional behaviours), while mistakes are intentional behaviours (Reason et al., 1990). Errors may result in near-miss and minor crashes more frequently than stunts but do not result in serious crashes. There is also the counter argument that those who self-report (admit) speeding and errors are also more enough to admit their involvement in near-miss crashes and crashes. Errors among beginners who are still building their hazard perception skills may be especially vulnerable to change over time (Liu, Hosking and Lenné (2009); Hosking, Liu and Bayly (2010)). Errors were reported as the least common behaviour among Nigerian riders. Errors might not be an important contributor to crashes because the Nigerian chaotic driving culture, poor road conditions, and opportunities to speed were not always present (Sunday and Akintola, 2010). Sakashita et al. (2014) found that errors were one of the most important indicators of self-reported crashes and near-miss crashes among inexperienced MTW riders in Australia. The error factor is also compatible with Reason et al. (1990) model's basic dichotomy of aberrant driving behaviour.

3.1.1 Traffic error

Riding habits that include excessive speed, lack of attention and carelessness may be closely related to traffic errors. In many previous studies, traffic error was the most reliable predictor of crash probability and was closely linked with risk perception or observational skill failures. Traffic errors were one of the significant predictors of crash liability (under the consideration of annual mileage, rider age and rider experience) (Sexton et al., 2004). Elliott, Baughan and Sexton (2007) also reported that the GLM (Generalised Linear Modelling) approach which considered factors including experience, age and annual mileage, found that traffic errors were the best predictors of crash probability. Motevalian et al. (2011) adopted traffic error as one of the factors to study the Persian motorised two-wheeler rider behaviour, and it was loaded with most of the MRBQ items used in the study. The high score of the perceived barriers and cues to action components of the Health Belief Model (HBM) was linked to traffic errors (Özkan et al., 2012). When the trip purpose of riding was analysed, results suggested that compared to riders who used MTW for leisure, those who used for business or work or daily commuting reported more traffic errors. Riders without near-miss and crash experience reported fewer traffic violations than those who had experienced (Stephens et al., 2017). Traffic errors were the most common cause of blunders or poor decisions when riding the MTW (Uttra et al., 2020). Their offence rates, crash, and near-miss crash rates increase by more than 20% for every one-unit increase in traffic errors. It was also highlighted that traffic error was the most common aberrant riding behaviour among Vietnamese riders, and minimizing traffic error would greatly decrease traffic risks (Trung Bui, Saadi and Cools, 2020). Chouhan, Kathuria and Sekhar (2021) concluded that traffic error had the largest incidence rate ratio, indicating it as the most important predictor of crash risk probability for Indian MTW riders. Traffic error had high positive correlations with violations, control errors and stunts but was weaker and negatively associated with protective equipment. No significant relationship was discovered between near-miss crash experiences and severe crash injuries reported in the past three months (Sumit et al., 2021).

Table 1: Summary of previous studies on MRBQ

Sl.No.	*Country*	*Author (year)*	*MRBQ items*	*Sample size*	*Data analysis method*	*Errors*			*Violations*				*Stunt*	*Safety equipment*	*Rider's attitude*
						Error	*Traffic error*	*Control error*	*Violation*	*Traffic violation*	*Speed violation*	*Safety violation*			
1	UK	Sexton *et al.*, (2004)	43	11360	Hybrid approach (SEM, PCA with varimax & oblique rotation) and GLM		#	#			#		#	#	
2	UK	Elliott, Baughan and Sexton (2007)	43	8666	PCA with varimax rotation and GLM		#	#			#		#	#	
3	Iran	Motevalian *et al.*, (2011)	48	518	Pearson's correlation and PCA using varimax rotation		#	#		#	#	#	#		
4	Turkey	Özkan *et al.*, (2012)	38	451	PCA and Models of Hierarchical regression (i.e., AMOS and LISREL)		#	#			#		#	#	
5	Indonesia	Putranto and Anjaya (2014)	31	150	PCA rotated using varimax with Kaizer Normalization			#		#	#	#			#

Sl.No.	*Country*	*Author (year)*	*MRBQ items*	*Sample size*	*Data analysis method*	*Errors*			*Violations*				*Stunt*	*Safety equipment*	*Rider's attitude*
						Error	*Traffic error*	*Control error*	*Violation*	*Traffic violation*	*Speed violation*	*Safety violation*			
6	Australia	Sakashita *et al.*, (2014)	43	1305	CFA, Principal axis factoring, Zero-inflated Poisson and Models of logistic regression	#					#		#	#	
7	Australia	Stephens *et al.*, (2017)	29	506	Models of logistic regression and Method of Principal axis factoring		#	#			#		#	#	
8	Nigeria	Sunday and Akintola (2010)	40	500	PCA with varimax rotation and GLM	#					#	#	#	#	
9	Australia	Möller et al., (2020)	33	2102	Descriptive statistics, Univariable and Multivariable logistic regression models	#					#		#	#	
10	Thailand	Uttra et al., (2020)	26	1516	EFA, Second-order CFA and SEM		#	#					#	#	
11	Vietnam	Trung Bui, Saadi and Cools (2020)	36	2254	Method of Principal axis factoring, CFA, and Negative binomial regression		#	#			#			#	

Sl.No.	*Country*	*Author (year)*	*MRBQ items*	*Sample size*	*Data analysis method*	*Errors*			*Violations*				*Stunt*	*Safety equipment*	*Rider's attitude*
						Error	*Traffic error*	*Control error*	*Violation*	*Traffic violation*	*Speed violation*	*Safety violation*			
12	India	Chouhan, Kathuria and Sekhar (2021)	32	392	EFA with the method of principal axis factoring and method of direct oblimin rotation, Negative binomial regression analysis		#	#			#		#		
13	Columbia	Ospina-Mateus, Jiménez and López-Valdés (2021)	45	438	EFA with the method of the extraction of principal components and method of varimax rotation, Logistic regression model		#	#			#		#	#	
14	India	Sumit *et al.*, (2021)	43	300	Method of principal axis factoring and method of direct oblimin rotation		#	#	#				#	#	
15	Iran	Babajanpour *et al.*, (2021)	48	311	GLM, Beta Regression model									#	

Factors considered in the previous studies

3.1.2 Control error

Control errors are errors that occur during handling or controlling the MTW. Control errors are peculiar to MTW handling and can be unintentional or intentional. These errors are primarily related to challenges of control linked with high speeds or errors in selecting speed. They are also related to errors and skill deficits when a motorbike is ridden enthusiastically (Sexton et al., 2004). The likelihood of reporting control errors was higher among riders who preferred speed and/or rode with rapid riding style and confidence (Sexton et al., 2004). Control errors were also found to be a major predictor of crashes in which respondents acknowledged some degree of guilt (Elliott, Baughan and Sexton, 2007). Studies like Motevalian et al. (2011); Putranto and Anjaya (2014) adopted control error as one of the factors to assess MTW rider behaviours. Özkan et al. (2012) found that the high score of the environment and vehicle component of the T-LOC (Multi-dimensional Traffic Locus of Control) model was linked to control errors. Stephens et al. (2017) revealed that control errors elevated the risk of being involved in a near-miss crash among Australian riders. Uttra et al. (2020) examined that control errors were identified as one of the crucial variables in the EFA (Exploratory Factor Analysis) method of variable grouping, which revealed that the behaviours of Thai people might be described by studying control errors as one of the critical factors. According to Trung Bui, Saadi and Cools (2020), control errors were found to be significantly and strongly related to the overall number of MTW crashes and offences among Vietnamese riders. Chouhan, Kathuria and Sekhar (2021) observed that a rider's age has a major impact on control error behaviour; MTW riders aged above 40 years execute this activity more frequently than MTW riders aged below 40 years, and older male MTW riders may commit control errors more often than teenage or female MTW riders. The probability of riders committing control errors was found to be significantly higher for those who had previously paid fines for traffic violations compared to those who had not. This was found to be adversely associated with involvement in self-reported traffic crashes. Sumit et al. (2021) found that control errors are strongly correlated with near-miss crash scenarios and traffic fines paid among Indian riders.

3.2 Violations

Violations may only be stated in the context of a social setting where behaviour is controlled by operational procedures, codes of conduct, rules, regulations and the like. Violations are deliberate (though not culpable) diversions from practices that are essential to ensure the safe functioning of the traffic system. It is not always necessary for such practices to be publicly expressed (Reason et al., 1990). Violations may be intentional or non-intentional behaviours. Sumit et al. (2021) found that violations committed were positively correlated with more penalties paid and self-reported near-miss crash events in the previous three months.

3.2.1 Traffic violation

Traffic violations mean deviations from the standard codes of safe practice in traffic situations. Studies like Motevalian et al. (2011); Putranto and Anjaya (2014) used traffic violation as one of the factors to study MTW rider behaviours. It was found that even

though traffic violations were the least frequently reported behaviour, it's of some importance when the violations become predominant factors in the region.

3.2.2 Speed violation

Speed violation is the most common and frequently reported riding behaviour in most of the existing studies. Most of the studies considered speed violations as one of the prime factors for assessing rider behaviours and involvement in crash risk (e.g. Sunday and Akintola (2010); Motevalian et al. (2011); Putranto and Anjaya (2014)). Sexton et al. (2004) found that the speed violation factor was responsible for 9.4% of the overall variance in the MRBQ survey. Speed violations are also an important predictor of crash accountability in blame crashes. Lowering speed violations were expected to keep MTW riders from putting themselves in the circumstances requiring advanced abilities to avoid a crash (Elliott, Baughan and Sexton, 2007). Özkan et al. (2012) found that speeding violations forecasted offences and were linked to the fate factor of the T-LOC (Traffic Locus of Control) model, as well as the attitudes, intention, and subjective norms components of TPB (Theory of Planned Behaviour) model, and perceived severity and cues to action components of HBM (Health Belief Model). Sakashita et al. (2014) found that speeding violations were related to MTW riders who were involved in helmet offences compared to those who did not. Speed violation was an important predictor of self-reported crashes and relatively close crashes. Despite being uncommon behaviour, speed violations enhanced the risk of being involved in a near-miss crash among Australian MTW riders (Stephens et al., 2017). Chouhan, Kathuria and Sekhar (2021) concluded that speed violation had the highest mean score among the four categories (control error, traffic error, stunt and speed violation), indicating frequent erratic riding behaviours among Indian MTW riders.

3.2.3 Safety violation

Motevalian et al. (2011) found that safety violation was the most frequently observed behaviour among Persian MTW riders. Some studies used safety violation as one of the factors to assess MTW rider behaviours (e.g. Putranto and Anjaya (2014); Motevalian et al. (2011)). This factor was the least reported riding behaviour and less widely used in the studies.

3.3 Stunt factor

The MTW dynamics allow for greater stunts than other modes of transportation. As a result, it might be claimed that a tool that evaluates MTW rider behaviour generally should include information relevant to violations and control errors contributed to performing stunts (Elliott, Baughan and Sexton, 2007). Concentrating on the stunts component, it was clear that this factor encompassed both non-intentional behaviours (e.g., unintentionally perform a wheel spin) and intended behaviours (e.g. try to or really do a wheelie). However, it may be claimed that the unintended behaviours affecting the stunt component are errors when the MTW rider violates the rules. An effort to accelerate too quickly, for example, could result in an unintended wheel spin. It's worth noting that violations related to stunt behaviour were assigned to this factor instead of the speed violation factor. This shows that violations related to stunts are distinct from other

speeding violations. Sexton et al. (2004) reported that younger riders who like speed or have a negligent, unsafe riding style were more likely to report stunt behaviour. Stunt behaviour had become an important predictor of crashes, excluding experience and age in modelling crashes. People who reported frequent stunt behaviour were more likely to be involved in all crashes and blame crashes. Motevalian et al. (2011) found that although the stunts subscale included both violation-type (intentionally doing a wheel spine) and error-type (unintentionally doing a wheel spin) items, doing an unintentional wheel spin implied an intention to speed, which should be considered as violation. Özkan et al. (2012) found that stunts were the significant predictor of active crashes and traffic offences among Turkish MTW riders. Many studies used stunts as one of the prime factors, especially to assess novice rider behaviours (e.g. Sakashita et al., (2014); Uttra et al., (2020)). Stephens et al. (2017) found that stunt behaviour was linked to a higher risk of being involved in a crash. Chouhan, Kathuria and Sekhar (2021) explained that stunts had the lowest mean score out of the four categories assessed, implying stunt was the uncommon deviant riding behaviours found among Indian riders. Sumit et al. (2021) reported that stunts were significantly linked to self-reported near-miss crash incidents and traffic fines paid in the previous three months.

3.4 Safety equipment

Using safety equipment indicates wearing protective gear, helmet, gloves, riding boots, body armour, and protective clothes (e.g. wearing a helmet, using low beam headlight on the MTW). It is to note that failure to employ safety equipment might be taken as a violation. However, the fact that the safety equipment component emerged alongside the other violation components shows that it is another factor significant to MTW riders, which is critical for reducing rider injuries. Özkan et al. (2012) revealed that the TPB's high degree of intention and perceived behavioural control components, the HBM's low score of perceived barriers component, and the T-LOC's low fate factor were all linked to the usage of safety equipment. Sakashita et al. (2014) suggested that the usage of protective gear is an important construct for assessing underlying concerns about safety and/or adherence to traffic regulations. Stephens et al. (2017) found that the use of protective gear was the frequently reported riding behaviour among Australian MTW riders. Uttra et al. (2020) revealed that when investigating factors, it was discovered that usage of safety equipment had the greatest loading factor value. Trung Bui, Saadi and Cools (2020) found that each unit increase in the usage of safety equipment resulted in 1.092 times more crashes, indicating that the occurrence of crash risks for Vietnamese riders increased by 9.2% for each unit increase in the usage of safety equipment. Sumit et al. (2021) revealed that no significant connections between wearing protective equipment and near-miss crash events were discovered over the past 3 months, but there were significant univariate correlations with involvement in near-crash.

3.5 Rider's attitude

A rider's attitude includes risky behaviours, selfish behaviours, and external disturbances. One of the major causes of greater crash rates is the disparity in attitudes between MTW riders and car drivers (Damani and Vedagiri, 2021). The MTW riders are supposed to behave in a unique way that was so strange to car drivers (Ragot-Court,

Mundutéguy and Fournier, 2012). The size effect is also at action since it has been proven that people tend to miscalculate the speed of MTWs when compared to cars. This could be attributed to the fact that people frequently rely on their decisions on the pace of optical expansion (Lee and Sheppard, 2017). Putranto and Anjaya (2014) explored that selfish behaviours and external disturbances also influenced MTW rider behaviours. The findings show that road user attitudes toward MTWs and cars differ, resulting in differing treatment for the two classes of vehicle. The vulnerability of MTWs on roads was escalated due to these findings.

4. Concluding remarks and research directions

Motorised two-wheelers have rapidly evolved as an easy mode of transport in many countries, and transportation experts are showing great interest in understanding the riding behaviours for the safe operation of MTWs. This study reviewed the significant factors influencing MTW rider behaviours used in the previous motorised two-wheeler rider behaviour questionnaires. The factors to be considered in the MRBQ depend on rider behaviour measures, the number of MRBQ items, sample size, target group, geographical location, and modelling techniques. Traffic errors and control errors are considered as widely used factors under the error category in the relevant literature. Traffic violations, speed violations, and safety violations are reported in the violation category, with speed violations being the most significant. Youngsters and soon-to-be riders could be given extra care because they are the most sensation-seeking and excited riders, which enhances their crash risk involvement. Helmets and other types of safety equipment are designed to improve the MTW user's safety, and thus, the safety equipment component is also important. It was presumed that personality traits played a significant role in traffic crashes and that the majority of those engaged in traffic crashes shared particular personality characteristics. Therefore, the rider’s attitude should be considered as one of the significant factors in understanding the actual riding behaviour of MTW riders, which needs to be dealt with in future works. Table 2 gives the summary of various items/questions under each factor used in the previous MRBQ studies. This could be useful for the researchers in developing the customised MRBQ for their studies.

It is mentioned that the validity and reliability of MRBQ have been doubted since a subject's stated behaviour can differ from his actual actions. An individual can also choose not to acknowledge or even forget the faults and lapses he or she has made. The socially desirable aspects and biased responses have weakened the self-reported approach. It is to note that using statistical power, the biases can be adjusted. The present study emphasises the research gaps that are critical for factors related to rider behaviour that can be incorporated into the MRBQ survey. This review will benefit the researchers working in MTW rider safety, and MRBQ studies also will be helpful for policy implementation and analysis.

Table 2: Summary of MRBQ items under each factor

Sl.No.	*Errors*	*Violations*	*Stunt*	*Safety equipment*	*Rider's attitude*
1	"Brake hard suddenly to avoid a collision"	"Drink alcohol and ride"	"Attempt to race with other drivers when they overtake you"	"Ride without a crash helmet"	"Conversation with pillion rider while riding"
2	"Ride so close to the vehicle and find it difficult to stop in an emergency"	"Use mobile phone while riding"	"Participating in unofficial street racing"	"Not wearing a helmet on short trips"	"Absence of mind during riding"
3	"Fail to notice another vehicle pulling out in front of you, and you had difficulty in stopping"	"Perform triple share riding"	"Follow emergency vehicles like ambulances, fire trucks, etc., to skip the existing traffic"	"Ride with a helmet but not wear it appropriately"	"Continue to ride even when feeling sleepy (drowsy)"
4	"Ride fast into a corner or bend and feel like you might lose control and scare yourself"	"Ride on the pedestrian walkway/footpath"	"Ride between two lanes of fast-moving traffic"	"Ride without protective clothing"	"Riding continuously without taking breaks"
5	"Run wide / off the road when going around a corner"	"Ride without lifting the side stand properly"	"Attempt to do wheeling or ride with the front wheel off the ground"		"Ride with a high beam headlight"
6	"Suddenly change lanes to overtake and come out in front of a vehicle running parallel or against the traffic"	"Exceed the posted speed limits on all roads"	"Attempt to do a back wheel spin"		"You deliberately annoy other drivers by tailgating, putting them at risk, not giving way, etc."
7	"Fail to notice the side mirrors to check the behind vehicles before lane-changing / turning"	"Disregard the speed limits late at night or in the early mornings, or when there is no surveillance"	"Pull away too quickly / brake hard, and your front wheel lifted off the road"		"Attempt to allow amateurs to ride your vehicle and put others at risk"
8	"Attempt to overtake a vehicle which is giving a right turning indicator"	"Violate traffic rules / Disrespect road signs"	"Attempt to ride with one or both hands off the steering handle"		"Speeding to become first in the line"
9	"Attempt to overtake a vehicle from the left side of traffic"	"Made an illegal U-turn"	"Attempt to ride with one or both legs off the foot pedal/peg"		"Imitated the posture and movement used in a race while riding"
10	"Overtaking without giving any warnings/indications"	"Overtaking while turning"			"Riding without wearing prescription eyeglasses"

Sl.No.	*Errors*	*Violations*	*Stunt*	*Safety equipment*	*Rider's attitude*
11	“Attempt to overtake a leading vehicle even if riding at the speed limit”	“Drove through amber light when it was about to turn red”			“Listen to music through a headset while riding”
12	“Fail to notice a pedestrian waiting to cross the road or some stray cattle crossing the road”	“Drove above the speed limit or violate traffic rules in order not to be late for an appointment”			“Eat or drink (food items) while riding”
13	“Queuing to turn left on a major road and nearly hit the vehicle in front in the main traffic queue”	“Smoking while riding”			
14	“Ride fast to skid on a wet road, manhole cover or road marking”	“Carry large luggage while riding”			
15	“Difficulty in controlling the vehicle at high speeds”	“Riding with an impaired motorcycle”			
16	“Ride in tandem with your leg on another vehicle or vice versa”	“Carry a passenger who has not worn a helmet”			
17	“Difficult to stop at a red traffic light when riding at the same speed as other traffic”	“Riding on a dedicated bus lane to skip traffic”			
18	“Riding in the wrong direction”	“Deliberately riding on a one-way street”			
19	“Move abruptly from one end of the lane to another end to take turns”				
20	“Delay in noticing when the front car opens the door suddenly, and you find it difficult to control your motorcycle”				
21	“Forget to turn off your indicators”				
22	"Misjudge speed of the oncoming vehicle when overtaking”				

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