



# The Relationship Between Children Education in the Family and Car Driving and Motorcycle Riding Behaviour in Indonesia

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**Abstract:** Children received their first-hand education from family environment. This paper is intended to evaluate whether children education in the family is related to car driver and motorcycle rider behaviour. Firstly, a long list of bad and good norms received from family revealed from ten respondents from various religions and ethnicities. 4 constructs (explanatory variables which are not directly observable) were found as Indonesian Family values (IFV), i.e. religious, disciplinary, ethical and politeness norms and law norms. Car driver behaviour was measured using Indonesian Driver Behaviour Questionnaire (IDBQ) consist of 4 constructs, i.e. aggressive behaviour, ordinary violation, errors, and lapses. Motorcycle rider behaviour was measured using Indonesian Motorcycle Behaviour Questionnaire (IMRBQ) consisted of 6 constructs, i.e. traffic/ control errors, speed/ safety/ traffic violations, and stunts. Pearson correlation analyses were conducted between means of each construct in IMRBQ, IDBQ and 4 constructs in IFV. Some of the constructs in IFV were significantly correlated with some constructs in MDBQ and IMRBQ.

**Keywords:** Car driver behaviour, children education, family, Indonesia, motorcycle rider behaviour

## 1. Introduction

Children received their first-hand education from family environment. Mainly messages regarding bad norms and good norms should be obeyed by the children were received from the parents. However, the development of a family is quite unique from one family to another. A family consisted of a single parent either a single mom or a single dad might involve other important figures in the nuclear family such as older siblings or from extended families such as grandfathers, grandmothers, uncles, aunts or older cousins. Children education in the family might not be related directly to car driver behaviour and/ or motorcycle rider behaviour. However certain values were nurtured through family education might somehow affect car driver and/ or motorcycle rider behaviour. This paper will discuss the relationship between children education in the family with car driving behaviour and motorcycle riding behaviour.

## 2. Children Education in a Family

Education is a process to change one's attitude and behaviour to improve the maturity of a human being through learning and training [1]. Parental behaviours vary around the world according to parents' socioeconomic environments, and according to their cultural models of parenting [2]. Cultural models or scripts [3]-[8] are interconnected ideologies,

values, and customs passed on through generations that guide parents' interpretations of phenomena and motivate their daily actions.

Values are defined as people's conceptions of goals that serve as guiding principles in their lives [7]. The first dimension is the openness to change (self-direction and stimulation) vs. conservation (conformity, tradition, and security). The second dimension is the self-enhancement (achievement, power) vs. self-transcendence (universalism, benevolence). Openness to change and self-enhancement is associated with individualism because their values primarily serve the interests of the individual; conservation and self-transcendence are associated with collectivism because these values primarily serve the interests of others. Through multiple, large-scale, cross-national studies, it has been confirmed that these universal values were existed and described cross-cultural variations [9]. According to Suizzo [10], self-direction can be expressed by independent thought and action, choosing, creating and exploring. Stimulation can be in the form of excitement, novelty, and challenge in life. Conformity can be expressed by restraint of actions, inclinations, and impulses likely to upset or harm others or violate social norms. Tradition might be in the form of respect, commitment acceptance of customs and ideas that traditional culture or religion provide. Whilst Security consists of safety, harmony stability of society, relationship, and self. Still according to Suizzo [11]. Hedonism can be expressed by pleasure, sensuous gratification for one's self. Power might be in the form of social status, prestige, control, dominance over people and resources. Achievement consists of personal success by demonstrating competence according to social standards. Universalism might be in the form of understanding, appreciation, tolerance for the welfare of all people and nature. Finally, benevolence can be expressed as preservation and enhancement of the welfare with whom one is in frequent personal contact.

Higher-educated parents spend more time with their children; for example, mothers with a college education or greater spend roughly 4.5 hours more per week in childcare than mothers with a high school degree or less [12]. Paternal warmth or closeness appeared beneficial, whereas paternal masculinity appeared to be irrelevant [13]-[15]. However, children (especially boys) growing up without fathers seemed to have problems in the areas of sex-role and gender-identity development, school performance, psychosocial adjustment, and perhaps in the control of aggression [16]. In the last decade, scholars have moved beyond unidimensional characterizations of fathers as breadwinners or as persons who are dichotomously absent or present to acknowledging the numerous roles that fathers play in their families [17]. Children who have secure, supportive, reciprocal, and sensitive relationships with their parents are much more likely to be well adjusted psychologically than are individuals whose relationships with their parents (mothers or fathers) are less satisfying [18]. Although many mothers are heavily overburdened by their responsibilities and would like their partners to do more, a substantial majority are quite satisfied with the status quo, with respect not only to the extent of paternal involvement but also to the ranges and types of activities in which fathers involve themselves [19].

### 3. Driver Behaviour Questionnaire

Behaviour questionnaires were sensitive to cultural difference. For example, Fergusson and Horwood [20] modified DBQ developed by Reason et al. [21] to reflect New Zealand condition. Xie and Parker [22] considered Chinese culture in developing Chinese DBQ. Similarly, Lajunen et al. [23] considered local culture when using Manchester DBQ for safety research in the Netherland and Finland.

The DBQ initially classified driver behaviour into three types: lapses, errors and violations [21]. Lapses involve behaviours reflecting problems with memory and attention. and are relatively harmless (e.g. forgetting where the car was parked). Lapses are more often reported by female and elderly drivers [21]. Unlike lapses, errors are potentially dangerous driving mistakes embracing failures of observation and misjudgements (e.g. underestimating the speed of the oncoming vehicle). According to previous studies, errors are not associated with any particular demographic group [21]. Violations. can be defined as deliberate deviations from safe driving practises. Violations include such behaviours as speeding. tailgating and violate red traffic lights. Violations are more often reported by young drivers and male drivers. The violations-scale was later divided into two scales: aggressive violations and ordinary violations [21]. Aggressive violations include an interpersonal aggressive component (e.g. honking to indicate annoyance) whereas ordinary violations are traffic code violations or risky driving behaviours without any aggressive content.

The data collection strategy seems to influence the trustworthiness of the self-reports to some degree. For example, responding anonymously to a postal survey leads to less socially desirable responses than a roadside survey conducted by the police [24]. Another possible cause of socially desirable responses is a uniform pattern of indicator (questionnaire items). Therefore, questionnaire items should be a proportional combination of favourable and unfavourable items.

Indonesian DBQ was an adaptation of Manchester DBQ. Manchester DBQ consists of 28 indicators. whilst Indonesian DBQ consists of 30 indicators (21 of them taken from Manchester DBQ) within 4 constructs (aggressive behaviour, ordinary violation, errors, and lapses). The additional 9 indicators in Indonesian DBQ were the last indicators in aggressive behaviours. the last two in ordinary violations. the last four in errors and the last two in lapses [25]. Tables 1 through 4 list aggressive behaviour, ordinary violation, error and lapse items respectively in Indonesian DBQ according to [25].

The Indonesian DBQ in [25] still had a considerable number of weaknesses. Some of the items were not easily understood by the respondents. Therefore, after Focus Group Discussions (FGD) with 5 transportation experts, the final Indonesian DBQ used in this paper is as presented in Table 5 to Table 8 [26].

**Table 1 – Aggressive behaviours in Indonesian DBQ according to [25].**

<b>Aggressive Behaviour Items</b>
Sound your horn to indicate your annoyance to another road user.
Become angered by another driver and give chase with the intention of giving him/her a piece of your mind.
Become angered by a certain type of a driver and indicate your hostility by whatever means you can.
Driving impatiently and frequently overtake other vehicles.

**Table 2 – Ordinary violations in Indonesian DBQ according to [25].**

<b>Ordinary Violations Items</b>
Pull out of a junction so far that the driver with the right of way has to stop and let you out.
Stay in a motorway lane that you know will be closed ahead until the last minute before forcing your way into the other lane.
Overtake a slow driver on the inside.
Race away from traffic lights with the intention of beating the driver next to you.
Drive so close to the car in front that it would be difficult to stop in an emergency.
Cross a junction knowing that the traffic lights have already turned against you.
Disregard the speed limit on a motorway.
Stopping in the shoulder in a non-emergency situation.
Using a mobile phone while driving
Driving on bus lane to avoid congestion.

**Table 3 – Errors in Indonesian DBQ according to [25].**

<b>Error Items</b>
Queuing to turn left onto the main road. you pay such close attention to the mainstream of traffic that you nearly hit the car in front of you.
Fail to notice that pedestrians are crossing when turning into a side street from the main road.
Fail to check your rear-view mirror before pulling out, changing lanes, etc.
Attempt to overtake someone that you had not noticed to be signaling a right turn.
Underestimate the speed of an oncoming vehicle when overtaking.
Driving before ready to drive.
Driving on an uncomfortable sitting position.
Skipping car routine maintenance.
Late recovery from glare.

**Table 4 – Lapses in Indonesian DBQ according to [25].**

<b>Lapse Items</b>
Hit something when reversing that you had not previously seen.
Intending to drive to destination A. you “wake up” to find yourself on the road to destination B.
Get into the wrong lane approaching a roundabout or a junction.
Switch one thing, such as the headlights, when you meant to switch on something else, such as the wipers.
Realize that you have no clear recollection of the road along which you have just been traveling.
Need to restart the engine frequently during driving due to limited driving experience.
Suddenly braking.

**Table 5 – Aggressive behaviours in Indonesian DBQ after FGD [26].**

<b>Aggressive Behaviour Items</b>
I drive a car out of control when angry. I horn to annoy other road users. I chase a driver who suddenly overtook my car.

**Table 6 – Ordinary violations in Indonesian DBQ after FGD [26].**

<b>Ordinary Violation Items</b>
I attempt to overtake someone that I had not noticed to be signaling a right turn. When riding at the same speed as other traffic, I find it difficult to stop in time when a traffic light has turned against you. My speed choice is too high at a curve and therefore I lose control. I violate speed limit in the rural road. I violate speed limit in the residential road. I keep accelerating the car although the traffic signal turns red. I drive between two high-speed traffic lanes I hit a parked vehicle and run from the crash scene. I drive a car without a safety belt. My passenger does not wear a safety belt.

**Table 7 – Errors in Indonesian DBQ after FGD [26].**

<b>Error Items</b>
I fail to notice that pedestrians are crossing when turning into a side street from a main road. I fail to see a pedestrian behind a parked vehicle crossing the road. I pull out in the main road in front of an unnoticeable vehicle and I fail to assess its speed correctly. Due to lack of concentration, I fail to react immediately when a vehicle in front reducing the speed and therefore should do a hard brake to avoid a crash I run wide when going round a corner I do not notice immediately the car in front of me when the user is opening the door suddenly and causing difficult control of my car.

**Table 8 – Lapses in Indonesian DBQ after FGD [26].**

<b>Lapse Items</b>
I get trouble to control my car at night. I communicate with a mobile phone while driving. I drive an impaired car.

#### 4. Motorcycle Rider Behaviour Questionnaire

Motorcycling is inherently much more demanding on control skills than car driving [29]. Therefore, they developed motorcycle rider behaviour questionnaire (MRBQ). They extracted 43 indicators in five factors, i.e. traffic violations (TV), speed violations (SV), stunts (S), traffic errors (TE) and safety equipment. In Persian MRBQ [28], the first four factors were the same with MRBQ developed by Elliot et al [27], i.e. traffic violations, speed violations, stunts and traffic errors. However, safety equipment factor was not in Persian MRBQ as the use of motorcycle rider protective clothing was not common in Iran. As substitutes, Persian MRBQ added two other factors, i.e. safety violations (SV) and traffic violations (TV). In Australian MRBQ [29], there were four factors, i.e. errors (without distinction between traffic errors and control errors), speed violations, stunts and protective clothing (similar to safety equipment).

Instead of developing Chinese MRBQ, Cheng and Ng [30] developed CMRDV (Chinese Motorcycle Rider Driving Violation). This questionnaire only consists of two factors, i.e. aggressive violations and ordinary violations. Putranto and Rostiana [31] developed Indonesian MRBQ with 38 item statements. The followings are tables contain a list of 38

statement items classified into traffic errors, control errors, speed violations, safety violations, traffic violations and stunts.

**Table 9 – Traffic errors in Indonesian MRBQ.**

<b>Traffic Error Items</b>
Fail to notice that pedestrians are crossing when turning into a side street from a main road.
Not notice someone stepping out from behind a parked vehicle until it is nearly too late.
Pull out on to a main road in front of a vehicle that you had not noticed, or whose speed you have misjudged.
Fail to notice or anticipate that another vehicle might pull out in front of you and have difficulty stopping.
Queuing to turn left on a main road, you pay such close attention to the main traffic that you nearly hit the vehicle in front.
Distracted or pre-occupied, you belatedly realise that the vehicle in front has slowed and you have to brake hard to avoid a collision.
Attempt to overtake someone that you had not noticed to be signalling a left turn.
When riding at the same speed as other traffic, you find it difficult to stop in time when a traffic light has turned against you
Ride so close to the vehicle in front that it would be difficult to stop in an emergency
Run wide when going round a corner

**Table 10 – Control errors in Indonesian MRBQ.**

<b>Control Error Items</b>
Find that you have difficulty controlling the bike when riding at speed.
Skid on a wet road or manhole cover.
The driver deliberately annoys you or puts you at risk.
Carry a large carriage with motorcycle.
Delay in noticing the car in front of you when opening door suddenly and causing difficult of the motorcycle.

**Table 11 – Speed violations in Indonesian MRBQ.**

<b>Speed Violation Items</b>
Ride so fast into a corner that you feel like you might lose control.
Exceed the speed limit on a country/rural road.
Disregard the speed limit late at night or in the early hours of the morning.
Exceed the speed limit on a motorway.
Exceed the speed limit on a residential road.
Race away from traffic lights with the intention of beating the driver/rider next to you.
Get involved in unofficial 'races' with other riders or drivers.
Ride so fast into a corner that you scare yourself.

**Table 12 – Safety violations in Indonesian MRBQ.**

<b>Safety Violation Items</b>
Ride when taking drugs or medications which might have effects on your riding.
Using helmet without chin straps or not fastening it.
Carry more than one passenger with your motorcycle.
Riding with an impaired motorcycle.
Riding without a helmet.
Carry a passenger who has not worn a helmet

**Table 13 – Traffic violations in Indonesian MRBQ.**

Traffic Violation Items
Cross junction when the traffic light is red. Riding in the opposite direction of the roadway. Riding in sidewalk Call with a mobile phone while riding. Smoking while riding.

**Table 14 – Stunts in Indonesian MRBQ.**

Stunt Items
Attempt to do, or actually do, a wheelie. Intentionally do a wheel spin. Have a crash with a parked vehicle and make damage to it but escape from the crash scene.

**5. Development of Instrument to Measure Values Nurtured in the Family**

In the beginning, the authors conduct a preliminary survey with 10 respondents to create a long list of values nurtured in the family both regarding things to do and not to do. These respondents were chosen from various cultural, religious and socio-economic background to avoid bias. There were 5 constructs of values identified in this step, i.e. religious, discipline, ethics, law and courtesy. The long list is presented in Table 15 to Table19.

**Table 15 – Long list of religious values.**

Long List of Religious Values	
To Do	Not To Do
Worship God. Be honest to parents Give charity Recite the holy book	Worship rarely Not pray before work

**Table 16 – Long list of discipline values.**

Long List of Religious Values	
To Do	Not To Do
Try to be on time. Conducted assigned duties. Keep things in place. Beware to strangers.	Carelessly cross the road Not executing the plan. Messy home appliances Lazy. Wake up late.

**Table 17(a) – Long list of ethic values.**

Long List of Ethic Values	
To Do	Not To Do
Not talking while eating. Not mumbling while eating. Taken care of family’s gifts. Keeping parents and family reputation. Apologize when guilty Asking permission when going out. Get home before 9 p.m. Asking for an explanation when someone guilty. Show your gratitude for any favour.	Eating and drinking while standing. Gossiping Visiting somebody’s home until very late at night. Reading when lying down. Consumptive behaviour.

**Table 17(b) – Long list of ethic values.**

<b>Long List of Ethic Values</b>	
<b>To Do</b>	<b>Not To Do</b>
Knock the door before entering a room. Asking permission before borrowing a thing. Reluctant to stand in a queue.	

**Table 18 – Long list of law values.**

<b>Long List of Law Values</b>	
<b>To Do</b>	<b>Not To Do</b>
Not littering. Not speeding on the road. Driving only with a valid license. Smoking.	Retaliate any unrighteous-ness to your family. Consuming drugs. Violate animal welfare principles.

**Table 19 – Long list of courtesy values.**

<b>Long List of Courtesy Values</b>	
<b>To Do</b>	<b>Not To Do</b>
Respect the parents. Not speaking rudely. Follow the family's advice. Helping each other. Sharing food with neighbours. Respect people with disabilities. Respect older people Not interrupt someone's talk.	Disobeying parent's order Shouting when asking for something. Forcing others to provide your needs. Asking other to respect you. Hoping someone's bad luck. Degrading others. Annoying your family. Provide advice in an inappropriate way. Mingle with limited people. Not helping parents.

After conducting a focus group discussion (FGD) with five experts, there were finally only four constructs of values, i.e. religious, discipline, ethics and courtesy (combined) and law. Some items in the long list are deleted and modified (including combining the to do and not to do items). The final items are presented in Tables 20 to Table 23.

**Table 20 – Final religious items in IFV.**

<b>Final Religious Items</b>
Worship God. Be honest with parents. Give charity. Pray prior to an activity.

**Table 21(a) – Final discipline items in IFV.**

<b>Final Discipline Items</b>
Managing time effectively. Try to be on time. Conducted assigned duties. Keep things on the designated place. Wash the dishes after a meal.

**Table 21(b) – Final discipline items in IFV.**

<b>Final Discipline Items</b>
Look at both sides when crossing the road. Executing the plan. Leave home appliances messy. Tidying up messy things Wake up early

**Table 22 – Final ethic and courtesy items in IFV.**

<b>Final Ethic and Courtesy Items</b>
Not talking while eating. Taken care of someone’s gifts. Keeping parents and family reputation. Apologize when guilty. Asking permission when going out Get home before too late at night. Asking for an explanation when someone guilty. Show your gratitude for any favour. Knock the door before entering a room/ home. Only purchase something needed. Asking permission before borrowing a thing. Reluctant to stand in a queue. Avoid eating and drinking while standing. Gossiping. Leaving somebody’s home before very late at night. Respect the parents. Speaking kindly. Follow the family's advice Sharing food with others Respect people with disabilities Respect older people Pay attention to someone’s talk Obeying parent’s order Shouting when asking for something Not forcing others to provide your needs Not asking others to respect you Not retaliate when someone treats you badly Respect others Avoid making your family them angry Provide advice in an appropriate way Mingle with unlimited people Helping parents at home

**Table 23 – Final law items in IFV.**

<b>Final Law Items</b>
Not littering Not speeding on the road Driving only with a valid license Not smoking Not drinking an alcoholic beverage Forgive any unrighteousness to your family Not consuming drugs Respect animal welfare principles

## 6. Method of Data Collection and Analysis

Respondents were from Greater Jakarta. There were 50 respondents who drive the private car daily and 66 respondents who ride the private motorcycle daily. They were asked to fill two different set of questionnaires, i.e. Indonesian Family Values Questionnaire (IFVQ), Indonesian Driver Behaviour Questionnaire (IDBQ) or Indonesian Motorcycle Rider Behaviour Questionnaire (IMRBQ). Actually, the number of respondents were not 116. Respondents who claimed that they use motorcycle and car in daily life in similar frequency might fill both IDBQ and IMRBQ. All questionnaires using 1 to 4 scale. For the family values questionnaire 1 means strongly disagree, 2 disagree, 3 agree and 4 strongly agree. For the rest questionnaires 1 means never, 2 seldom, 3 often and 4 always. For all unfavourable questions, respondents' answers were recorded in the opposite manner (1 became 4, 2 became 3, 3 became 2 and 4 became 1) before analysis.

After inputting data to SPSS 22, several procedures were conducted. Firstly, mean values of each construct were calculated (4, 6 and 4 mean values respectively for IFV, IDBQ, and IMRBQ) for 116 respondents. Secondly, Pearson correlation analyses were conducted both for IFV versus IDBQ (50 respondents) and IFV versus IMRBQ (66 respondents). A significant level of 0.05 is used to decide statistically significant Pearson correlation).

## 7. Data Summary

Most of the car driving respondents (72%) and most of the motorcycle riding respondents (67%) were male. Most of the car driving respondents (52%) spent US\$137-US\$341 per month, whilst most of the motorcycle riding respondents (50.1%) spent less than US\$ 137 per month. This was using currency rate of US\$1=Rp.14,643.- on 26 August [32]. Most of the respondents were university students with a mean age of 24. Therefore, the education attainment of most of car driving respondents (52%) and most of the motorcycle riding respondents (68%) were high school.

In general, the car driving respondents were safe road users. None of the mean values of any constructs were less than 2.5 (the departure from unsafe road users to safe road users). The mean values of Aggressive Behaviour construct were between 3.34 (I do not chase a driver who suddenly overtook my car) and 3.58 (I do not horn to annoy other road users). Both mean values were quite high as chasing and horning other road users are considered very impolite in Indonesian culture. The mean values of Ordinary Violation were between 2.64 (my passenger does not wear safety belt) and 3.84 (I hit a parked vehicle and run from the crash scene). The question of passenger seat belt use compliance might be rather confusing whether it was about front or rear passengers. A substantial percentage of respondents might interpret the question as about rear passenger seat belt use compliance. In Greater Jakarta, since safety belt use for rear passenger is not compulsory, most rear passengers were not using safety belt [33]. Mean values of Errors construct were between 2.98 (I successfully react immediately when a vehicle in front reducing the speed and only need to conduct ordinary break) and 3.70 (I notice the car in front of me when the user is opening door suddenly and I manage to control my car). Mean values of Lapses construct were between 2.80 (I do not communicate with a mobile phone while driving) and 3.70 (I do not drive an impaired car). The minimum mean value was only marginally beyond 2.50 since the use of mobile phone while driving seems still quite common.

In general, the motorcycle riding respondents were safe road users. None of the man values of any constructs were less than 2.5 (the departure from unsafe road users to safe road users). The mean values of speed violation construct were between 2.53 (low speed at curve) and 3.50 (obey speed limit at night). The minimum mean values in this construct were marginally approaching 2.50 meaning the respondents, in general, tried to operate ride the motorcycle within a safe speed range although not very low. The mean values of safety violation construct were between 2.88 (not consuming drugs or medication) and 3.76 (passenger helmet use). Although mean values of passenger helmet use were quite high, it did not mean that they always fasten the chin strap (even the mean values for "fasten the chin strip" for the rider was only 3.02). Most of the motorcycle riders were not wearing helmet at the time of injury [34]. The mean values of control error constructs were between 3.03 (not skid on a wet road or manhole cover) and 3.61 (not carry large carriage). The study was regarding daily riding in Jakarta or Greater Jakarta. The violation on carrying large carriage usually happen in intercity motorcycle transport during the long holiday. For example, in 2017 during the holiday related to 'Idul Fitri there were about 6.4 million motorcycles used for long distance travel [35] and many of them carried oversize luggage. The mean values of traffic error construct were between 2.94 (fail to notice or anticipate that another vehicle might pull out in front of you and have difficulty stopping) and 3.39 (fail to notice that pedestrians are crossing when turning into a side street from a main road). The mean values of traffic violation construct were between 2.77 (smoking while riding) and 3.55 (stop on red). The mean values for stunts construct were between 3.91 (not conduct hit and run) and 3.97 (not conduct wheel spin). These high mean values were very common (including in other countries) because conducting stunts on road is very irresponsible behaviour.

In general, the respondents absorb positive values nurtured in the family education. None of the man values of any constructs were less than 2.5 (the departure from unsafe road users to safe road users). The mean values of the religious construct were between 3.21 (give charity) and 3.65 (worship The God). This was quite logical, as religious values are essential in Indonesia. Even the first principle of the nation is believing in the one and only god. The mean values of discipline construct were between 2.70 (wake up early) and 3.49 (look both sides before crossing the road). As about half of the respondents were university students who just leave home for living by themselves in rented rooms surrounding

the campus, they might begin to leave good values of wake up early. The mean values of ethic and courtesy construct were between 2.71 (obey parents order) and 3.61 (keep parents and family reputation). Again, as most of the respondents were just leaving home, their obedience to the parents might be decreasing, but they will keep the reputation of their family, especially their parents. The mean values of law construct were between 2.66 (forgive any unrighteousness to your family) and 3.35 (not consuming drugs). The general public understands the damaging effect of drugs.

## 8. Results and Discussion

Tables 24 to Table 27 show the Pearson correlation between the religious, discipline, ethic and courtesy and law constructs respectively and every construct in Indonesian driver behaviour questionnaire.

**Table 24 – Pearson correlation between the religious construct and every construct in Indonesian driver behaviour questionnaire (n=50).**

Constructs	Pearson Correlation Coefficient (R)	$\alpha$	Significant? (Yes/ No)
Aggressive Behaviours	-0.023	0.438	No
Ordinary Violations	0.137	0.171	No
Errors	0.258	0.035	Yes
Lapses	0.261	0.034	Yes

It seems that religious construct positively affected driver behaviour in terms of errors and lapses. Involving the god in daily activity such as driving through for example pray before driving might improve concentration and therefore potentially minimize errors and lapses. Surprisingly it has no significant correlation with reducing aggressive behaviours.

**Table 25 – Pearson correlation between discipline construct and every construct in Indonesian driver behaviour questionnaire (n=50).**

Constructs	Pearson Correlation Coefficient (R)	$\alpha$	Significant? (Yes/ No)
Aggressive Behaviours	0.103	0.238	No
Ordinary Violations	0.305	0.016	Yes
Errors	0.366	0.005	Yes
Lapses	0.097	0.252	No

It can be seen that discipline significantly correlated with the reduction of ordinary violations and errors as discipline improve obedience and alertness. By improved obedience, the driver by their own choice obey the speed limit, comply with safety belt regulation, do not run the red light, etc. By improved alertness, the driver will reduce the possibility of hitting other vehicles, pedestrians, street furniture etc. Discipline also improve responsibility. For example, people with high discipline tend to avoid hit and run action.

**Table 26 – Pearson correlation between ethic and courtesy construct and every construct in Indonesian Driver behaviour questionnaire (n=50).**

Constructs	Pearson Correlation Coefficient (R)	$\alpha$	Significant? (Yes/ No)
Aggressive Behaviours	0.203	0.079	No
Ordinary Violations	0.402	0.002	Yes
Errors	0.516	<0.001	Yes
Lapses	0.387	0.003	Yes

It can be seen that ethic and courtesy was significantly correlated with ordinary violations, errors, and lapses. This implies that respondents who uphold ethics and courtesy values tend to consider these values when driving in the road (avoid reckless behaviour such as driving between two high-speed traffic lanes).

It can be seen that the only family values that can control aggressive behaviour such as driving out of control, chasing another driver, annoying other driver was law. Respondents who uphold law values tend to be calmer on road. Table 28

shows the Pearson correlation between the religious construct and every construct in Indonesian motorcycle rider behaviour questionnaire.

**Table 27 – Pearson correlation between law construct and every construct in Indonesian driver behaviour questionnaire (n=50).**

Constructs	Pearson Correlation Coefficient (R)	$\alpha$	Significant? (Yes/ No)
Aggressive Behaviours	0.307	0.015	Yes
Ordinary Violations	0.302	0.017	Yes
Errors	0.328	0.010	Yes
Lapses	0.169	0.120	No

**Table 28 – Pearson correlation between the religious construct and every construct in Indonesian motorcycle rider behaviour questionnaire.**

Constructs	Pearson Correlation Coefficient (R)	$\alpha$	Significant? (Yes/ No)
Traffic Errors	0.182	0.072	No
Control Errors	0.199	0.054	No
Speed Violations	0.096	0.221	No
Safety Violations	-0.202	0.052	No
Traffic Violations	0.098	0.216	No
Stunts	0.214	0.042	Yes

It can be seen that the only constructs in IMRBQ that correlates significantly with the religious construct in IFV was stunts. Stunts reflect the extraordinary acrobatic use of motorcycle (such as wheelie and wheel spin) and sometimes irresponsible unlawful behaviour such as hit and run. Therefore, respondents living up religious value will avoid conducting stunts.

Table 29 shows the Pearson correlation between discipline construct and every construct in Indonesian motorcycle rider behaviour questionnaire. Table 30 shows the Pearson correlation between ethic and courtesy construct and every construct in Indonesian motorcycle rider behaviour questionnaire. Table 31 shows the Pearson correlation between law construct and every construct in Indonesian motorcycle rider behaviour questionnaire (n=66).

**Table 29 – Pearson correlation between discipline construct and every construct in Indonesian motorcycle rider behaviour questionnaire (n=66).**

Constructs	Pearson Correlation Coefficient (R)	$\alpha$	Significant? (Yes/ No)
Traffic Errors	0.245	0.024	Yes
Control Errors	0.118	0.172	No
Speed Violations	0.396	<0.001	Yes
Safety Violations	0.020	0.438	No
Traffic Violations	0.128	0.154	No
Stunts	0.294	0.008	Yes

The discipline constructs in IFV correlate significantly with speed violations, traffic errors, and stunts. This implies that respondents with high discipline tend to obey regulation regarding speeds (speed limit in various location and time, avoid unofficial road race, etc), to minimize error in traffic situation judgment and to avoid stunts.

It can be seen that ethic and courtesy constructs in IFV correlated significantly with speed violations, control errors, and stunts. This implies that respondents who uphold ethics and courtesy values tend to behave in order and consequently tend to obey regulation regarding speeds (speed limit in various location and time, avoid unofficial road race, etc), to minimize control error in traffic situation judgment and to avoid stunts.

**Table 30 – Pearson correlation between ethic and courtesy construct and every construct in Indonesian motorcycle rider behaviour questionnaire (n=66).**

Constructs	Pearson Correlation Coefficient (R)	$\alpha$	Significant? (Yes/ No)
Traffic Errors	0.184	0.069	No
Control Errors	0.226	0.034	Yes
Speed Violations	0.243	0.025	Yes
Safety Violations	-0.030	0.404	No
Traffic Violations	0.185	0.068	No
Stunts	0.374	0.001	Yes

**Table 31 – Pearson correlation between law construct and every construct in Indonesian motorcycle rider behaviour questionnaire.**

Constructs	Pearson Correlation Coefficient (R)	$\alpha$	Significant? (Yes/ No)
Traffic Errors	-0.041	0.372	No
Control Errors	0.142	0.128	No
Speed Violations	0.123	0.163	No
Safety Violations	0.011	0.466	No
Traffic Violations	0.191	0.062	No
Stunts	0.151	0.113	No

Interestingly law construct was the only construct in IFV which did not correlate significantly with any constructs in IMRBQ including with stunts which consistently correlate significantly with other constructs in IFV, i.e. religious, discipline, ethics and courtesy. There is no logical explanation regarding this almost all of the constructs were related to violations (speed violations, safety violations, traffic violations and especially stunts).

Before concluding, it might be interesting to investigate whether, within each instrument, i.e. IDBQ, IMRBQ, IFV, the constructs were correlated each other significantly. Tables 32 to Table 34 show the summary. In Table 32 it is interesting that except between aggressive behaviours and lapses, all other pairs of constructs were correlated significantly. Possibly because aggressive behaviours are concerning the interaction between different road users whilst lapses are not. In Table 9, traffic error was the only construct which correlated significantly with at least one constructs (and actually correlated significantly with three other constructs, i.e. speed violations, safety violations and control errors). There is no logical explanation regarding these findings. In Table 10 it is interesting that except between law and religious values, all other pairs of constructs were correlated significantly. Possibly because religious values are concerning more in the vertical relationship with God whilst law values are concerning more in the horizontal relationship with the human being.

**Table 32 – Pearson correlation between constructs within IDBQ (n=50).**

Constructs	Aggressive Behaviours	Ordinary Violations	Errors	Lapses
<b>Aggressive Behaviours</b>		0.250 (0.040)	0.269 (0.030)	0.104 (0.237)
<b>Ordinary Violations</b>			0.522 ( $<0.001$ )	0.423 (0.001)
<b>Errors</b>				0.536 ( $<0.001$ )

\* Numbers in brackets were  $\alpha$ .

\*\* Significant correlations are printed in bold and italic.

**Table 33 – Pearson correlation between constructs within IMRBQ (n=66).**

Constructs	Speed Violations	Safety Violations	Control Errors	Traffic Errors	Traffic Violations	Stunts
<b>Speed Violations</b>		0.145 (0.122)	0.002 (0.492)	0.355 (0.002)	0.164 (0.094)	0.141 (0.129)
<b>Safety Violations</b>			-0.014 (0.456)	0.222 (0.036)	-0.055 (0.331)	-0.019 (0.438)
<b>Control Errors</b>				0.364 (0.001)	0.138 (0.134)	0.129 (0.151)
<b>Traffic Errors</b>					0.122 (0.164)	0.029 (0.407)
<b>Traffic Violations</b>						0.050 (0.344)

\* Numbers in brackets were  $\alpha$ .

\*\* Significant correlations are printed in bold and italic.

**Table 34 – Pearson correlation between constructs within IFV (n=116).**

Constructs	Religious	Discipline	Ethic and Courtesy	Law
<b>Religious</b>		0.523 ( $<0.001$ )	0.455 ( $<0.01$ )	0.082 (0.191)
<b>Diiscipline</b>			0.654 ( $<0.001$ )	0.177 (0.029)
<b>Ethic and Courtesy</b>				0.418 ( $<0.001$ )

\* Numbers in brackets were  $\alpha$ .

\*\* Significant correlations are printed in bold and italic.

## 9. Conclusion

From the analyses, some of the constructs in IFV were significantly correlated with some constructs in IDBQ and IMRBQ. Therefore, the role of the family to educate and nurture certain values is important to improve drivers and motorcycle riders' behaviours on road. Although in Greater Jakarta motorcycle use was higher compared to car use, surprisingly, IFV had more constructs significantly correlated with IDBQ compare to IMRBQ.

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