Women Driving and Its Effect on Traffic safety

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ABSTRACT

Driving is one of the most natural and common activities of the 21st century, and some believe, a necessity. But, Saudi Arabia bans women from driving, even though, according to the World Health Organization, more than 77% of all traffic road deaths occur among men, specifically young males under the age of 25 years. There are not enough studies which tackle this point. Are men really better drivers than women? Who has the bigger negative effect on road traffic? Through the available data from traffic and insurance agencies, we will analyze the contribution of women drivers on traffic accidents.

The main objective of this research study is to find out the effect of women driving on traffic safety. A questionnaire survey was conducted to find out the publics’ opinion about this issue. This survey was prepared and distributed through the network and through social media to a sample of people worldwide. This survey concentrated on public opinion about acceptance or refusal of women driving and the main reason for that opinion. Also, it concentrates on the effect of women driving on traffic safety. In addition, this research study figured out through the available data from traffic agencies the contribution of women drivers on traffic accidents.

It was found that the majority of the public are with women driving. Also, it was found that women driving do not affect traffic safety. Women driving contribute the same level to traffic safety as men driving. There was no significant difference between women and men driving on traffic safety.

Women have the right to be equal with men in car driving. The time has come for Saudi Arabia to allow women driving with consideration to religious legitimacy controls.


1. INTRODUCTION

According to the World Health Organization, road traffic injuries caused an estimate of 1.24 million deaths worldwide. That is one person is killed every 25 seconds. Surprisingly, more than 77% of all traffic road deaths occur among men (WHO 2013).

In this research, we will be analyzing statistics of car accidents and prove that women’s driving has absolutely no negative impact on traffic safety.

Saudi Arabia’s reasons for banning women driving are: a) Religious and cultural reasons; protecting women from their own corruption b) Their desire to protect women from harm or harm of others.

But nowhere is it found in any religious text in the Quran or in the sayings of the prophet Muhammad that prohibits women from activities such as driving. Aisha and Khadija (peace be upon them) were two wives of the prophet Muhammad pbuh, and two of the greatest Muslim
role models for women. Both have been documented to be riding camels and horses as a means to complete their activities.

An OnIslam fatwa by Dr. Wael Shihab has stated: “In fact, there are no impermissible (haram) deeds in Islam except those which are prohibited by clear proofs either in the Qur'an or the Sunnah, or the ones that violate or contradict the rules and teachings of Shari'ah. Driving, for men and women, is generally permissible as long as one is capable to and has the driving license.”

This leaves us to tackle the second reason; banning women from driving for the general safety of them and other drivers.

Saudi Arabia is the only country in the world which bans women driving, so if women’s driving does cause a problem then it should have the lowest traffic accidents in the whole world. On the contrary, according to the World Health Organization, Saudi Arabia is considered to have the world's highest number of deaths from road accidents, which now is the main cause of death in adult males aged 16 to 36 (WHO 2013).

We conducted a survey to get an idea of Arab society’s views on women driving. It is important to mention that in the survey, we limited to the answers to Arab men and women mostly from Jordan, in order to attain the general Middle Eastern opinion on women’s driving. Jordan is considered as a moderate Middle Eastern country, which still has religious and cultural values.

It will be proposed that Saudi Arabia’s reasons for banning women’s driving are illegitimate. Based on the facts, women are actually less likely to get in a serious car accident, and women driving contribute the same level to traffic safety as men driving.

Women have the right to be equal with men in car driving. The time has come for Saudi Arabia to allow women driving with consideration to religious legitimacy controls.

1.1 Study Objectives
The main objectives of this research study are:

1- To find out the effect of women driving on traffic safety.

2- To figure out through the available data from traffic agencies the contribution of women drivers on traffic accidents.

3- To determine how Arab society feels about women driving

1.2 Study Significance
About 1.24 million people die each year as a result of traffic accidents, Road Traffic Injuries have become the leading cause of death among young people, aged 15-29 years. It is predicted that if no action is done, road traffic accidents will result in the death of around 1.9 million people by 2020. Therefore, it is very important to study traffic accidents to find their causes and in a result we can try to find ways to avoid them. Many people think that women’s driving causes problems on the road, and therefore it is banned in certain countries, it is important to see if that theory is true and the reasons behind it.
There are over 10 million females in Saudi Arabia who are of driving age or one day will be, and they are deprived of their rights to drive, based on flawed logic. Through this study, we hope to prove once and for all, that there is no legitimate reason to ban women from driving.

1.3 Methodology of Study

A questionnaire survey was conducted to find out the publics’ opinion about this issue. This survey was prepared and distributed through the network and through social media to a sample of people worldwide. This survey concentrated on public opinion about acceptance or refusal of women driving and the main reason for that opinion. Also, it concentrates on the effect of women driving on traffic safety. In addition, this research study figured out through the available data from traffic agencies the contribution of women drivers on traffic accidents.

2. LITERATURE REVIEW

Al-Balbissi (2003) in his valuable research study assessed the influence of driver sex on road accidents. Accident records for 3 years and for three different income regions were analyzed. Annual distance traveled, social and economic participation, and effect of public vehicle accidents were considered. Effects of environmental factors and driver age were also included. The driver faults analysis identified possible reasons for accident differences. Analysis of accident severity was used to assess the degree of harm. Statistical analysis at the 5% significance level was used to evaluate all differences. The results show that male accident rates are significantly higher. This trend is consistent through all the analysis. Accident differences are significant only in normal driving conditions. Drivers over age 50 had the lowest accident rates. Accident rate differences were caused by lack of attention and impatience among male drivers. Appropriate means of communication should alert concerned populations to these findings (Al-Balbissi 2003).

The analysis of the data reported in his study revealed a definite trend of significantly higher accident rates for male drivers compared with female drivers. In a search for possible reasons causing the differences in accident rates between the two sexes, particular driver faults were found to be responsible for the majority of the differences. These are: violation of a stop sign, using incorrect lanes, violating a yield sign, disregarding obligatory signs, and wrong overtaking. Reduced attention and driver impatience are believed to be the major contributors to the commitment of these faults. Furthermore, female drivers did not take risks to commit the serious lawbreaking faults. The study also revealed that males accidents were more harmful and dangerous with regard to their consequences. The findings of this study are compatible with the current literature. Several studies reached similar conclusions, whereas other studies had opposite or different conclusions. Some of the differences in results may be attributed to cultural and social variations (Al-Balbissi 2003).

The literature review for previous studies of Dr. Al-Balbissi in his research study “Role of Gender in Road Accidents” was very strong and comprehensive. The following literature reviews were taken from Al-Balbissi study in 2003.
Differences in driving behavior between male and female drivers have been the focus of several previous investigations. Most of the findings have supported the notion of different driving characteristics. In a study by Storie (1977), significant differences in driving characteristics were found between the two sexes with regard to speed, skill, and attitude. Females were more likely to drive at lower speeds and overtake more carefully. Males, on the other hand, were generally more skillful, able to perform difficult maneuvers, and more likely to risk driving under the influence of alcohol.

No significant difference, however, had previously been found between male and female drivers as related to being at fault in accidents. Earlier accident statistics presented by Grime (1987) showed that in general, female accident rates were lower than those for males. Local accident statistics (Public Security Directorate, 1997–1999) indicated that 77.2% of all traffic accident casualties and 72.3% of run-over casualties were males. These statistics bring attention to the serious role of gender in road accident frequencies, consequences, and probable causes.

Several other studies have focused on the issue of gender and its relation to accidents. In a study by Anderson et al. (1999), differences in behaviors and attitudes were found to be largely a function of age and gender. The study focused on pickup truck owners. The study revealed that pickup owners were primarily male, were characterized by lower restraint use, displayed more risky driving behaviors, and received more traffic citations. Jonah (1997) showed that the relationship between sensation seeking and risky behavior had a positive correlation and depended on three factors among which was gender.

On the other hand, Hung et al. (1991) in his study in New Zealand demonstrated that information seeking across the life span was independent of gender for both study subjects: drivers involved in an automobile accident or study participants. Ore (1998) also observed gender effect on accident probability. However, in his study female accident rates were higher than those of male. Baker et al. (2000) using the Oklahoma Department of Public Safety crash file and the hospital in-patient data discharge file from the Oklahoma State Department of Health showed that nonusers of seat belts tended to be young and male. He also found that gender is a significant predictor of seat belt use. On the other hand, Boyce and Geller (2001) found that driver risk taking did not vary significantly as a function of gender. Contrary to that, Chang et al. (1996) in their study on alcohol-related traffic casualties and their relationships with sociodemographic characteristics found that single males showed a higher rate of conviction for driving under the influence of alcohol. Passman et al. (2001) in their study comparing seat belt use before and after motor vehicle trauma demonstrated that the frequency of seat belt use before and after crash involvement varied considerably as a function of gender. Male subjects showed one of the largest increases in the frequency of seat belt use after collision involvement (37%). Baker and Clarke (2001) in their analysis of factors contributing to hospital charges from injuries incurred in automobile crashes (particularly, charge variations related to drivers involved in crashes) showed that increasing hospital charges were associated with males in addition to age, urban settings, and lack of seat belt use. Contrary to that are the findings of Kufera et al. (2001) in their Maryland study in which they analyzed hospital costs and accident data. Their cost comparisons between groups defined according to age, gender, safety equipment, and impact direction...
indicated that costs did not differ by gender. Their multifactor ANOVA at the 10% significance level revealed significant effects for drivers who were older, unbelted, impaired, injured in a lateral crash, and had a deployed airbag.

In a study related to accident risk perception, Dejoy (1992) focused on younger drivers (age 18–24) to examine gender differences in this perception. He found that males and females had similar perceptions concerning the frequency and accident likelihood of the risky behaviors. Males perceived such behaviors to be less serious and less likely to result in accidents.

Stamatiadis and Deacon (1995) observed a difference in accident propensity due to gender effect. They showed that female drivers on average and at younger ages were significantly safer than their male counterparts. However, the observed trend was reversed for older drivers (older male drivers were significantly safer than older female drivers). Their analysis also revealed that middle-aged drivers were significantly safer than young drivers who were, in turn, safer than older drivers. Several other studies demonstrated significant differences in accident trends and behaviors between the two sexes (e.g., Jones, 1997; Kulanthayan et al., 2000; Lowenstein et al., 1997).

Differences in gender responses and attitudes were also demonstrated in Jones’s (1997) Oregon study in which he examined the effectiveness of advisory letters in reducing accidents. He found that accident-free survival for females receiving an advisory letter was slightly less (but not significantly) than females receiving no letter. On the other hand, these letters were more effective in reducing collisions for males. Gender-dependent differences were also demonstrated in Evans’s (2001) study, in which he examined fatality likelihood of males and females who were exposed to similar potentially lethal physical impacts when all other factors were equal. He found that female risk exceeded male risk by 28 +- 3% from about age 20 to 35. Males’ fatality risks were also lower than females from the teenage years to the fifties. This effect of gender on fatality risk did not change for all categories investigated (14 occupant categories).

Review of accident literature has also revealed several studies that indicated no differences between the two sexes. Among these are Lowenstein and Koziol-McLain (2001), Nadler et al. (2001), and Peterson et al., (1995). Lowenstein and Koziol-McLain (2001) attempted to determine the prevalence of recent drug use among drivers injured in traffic accidents and to investigate the role of drug use in accident responsibility. In their multivariate analysis, they concluded that gender did not predict crash responsibility. Nadler et al. (2001) in their study to characterize the pattern of consequences of driveway accidents indicated that there was no difference in gender between the investigated groups.
2.1 Men Driving Vs. Women Driving
In all the research studies done about this topic, men are always found to have a higher percentage of car accidents.

Waller et al (2001) notes that in addition to having a higher number of crashes, men acquire their first crash earlier in their driving career. Norris et al (2000) and others attribute this greater level of proneness to be in a car accident to higher driving speeds among men and less regard for traffic laws.

As a whole, men tend to display less cautious behavior than women, such as driving at higher speeds and closer to other cars, not wearing seat belts, and driving while intoxicated more often. They even make riskier turns.

Men are more likely than women to be involved in crashes that occur on bends and in the dark. Women, on the other hand, have a greater frequency of crashes occurring at junctions than men. (Waylen and McKenna 2002)

The psychological nature of women differs from men are some gender differences in driving behaviors and attitudes. These differences are explained in 5 main categories:

1. Skill
2. Experience of crashes
3. Driver Manners
4. Driver Distractions

2.1.1 Skill
According to Tom Vanderbilt, author of Traffic, some research suggests that men do show more technical proficiency in driving. They also have a much greater tendency to declare themselves the better drivers.

- In a study of male and female drivers of varying experience levels attempting to park in a closed-off parking garage, men parked more quickly and more accurately.
- When young drivers take the in-car portion of the driving test in the UK, young males do statistically better than young females.

This does not mean that it is a rule that men are more skillful as drivers. This study would have to be applied on a wider range for sure results.

2.1.2 Experience of crashes
- Women tend to have fewer crashes and their car accident claims tend to cost less than men’s (source: 2007 AAMI claims data)
- Men are more likely than women to be involved in serious accidents – that is, men experience more head-on collisions, roll-overs, loss-of-control crashes and collisions
involving pedestrians, cyclists or animals whereas women are more likely than men to collide with stationary objects or reverse into other cars (source: 2007 AAMI claims data)

- Men are more likely than women to have experienced a crash – 82% versus 77% (source: 2007 AAMI Crash Index)
- Men are more likely than women to have hit an animal while driving – 60% versus 41% (source: 2007 AAMI Crash Index)
- As drivers, men are more likely than women to have had a close call with a pedestrian/cyclist – 46% versus 35% (source: 2007 AAMI Crash Index)

Figure 1: Road deaths, 2001

Taken from a study in the UK, Figure 1 shows the contrast between men and women fatalities when it comes to car accidents. The men fatalities especially peak at the 20-29 age group. The more the age progresses, the less the difference between men and women fatalities becomes. This is consistent with the findings of Maycock et al (1991) that the greatest difference between males and females is in the 16-20 and 21-24 age groups.

This isn’t limited to the UK. This is, in fact, the general state in the world. In Kampala, Uganda, for example, males outnumbered females by between 2 and 7 to 1 among injured vehicle drivers, passengers and pedestrians. In the United States male drivers are much more likely than females to be injured or killed in road accidents – they account for 71% of all driver fatalities. (SIRC)
2.1.3 Driver Manners

- Women are more likely than men to think drivers are becoming more aggressive – 94 % versus 88 % (source: 2007 AAMI Crash Index)
- One in five men (20 %) admits to being an impatient driver versus one in six women or 16 % (source: 2007 AAMI Crash Index)
- Men are more likely than women to rudely gesture at another driver – 59 % versus 55 % (source: 2007 AAMI Crash Index)
- Men are more likely than women to verbally abuse another driver – 60 % versus 57 % (source: 2007 AAMI Crash Index)
- Men are more likely than women to have been a passenger in a car being driven dangerously – 66% versus 57% (source: 2007 AAMI Crash Index)
- Men honked their horns three times more quickly than women when drivers in front did not move on a green light. (source: 2007 AAMI Crash Index)
- Nearly twice as many men as women admit to speeding most of the time – 10 % versus six % (source: 2007 AAMI Crash Index)
- Men are more likely than women to agree they speed to get home or work sooner – 36 % versus 30 % (source: 2007 AAMI Crash Index)
- One in eight men (13 %) admits they often ignore restricted speed limits versus six % of women (source: 2007 AAMI Crash Index)

The WHO (2002) report noted the gender differences when it came to the driving manner. Men are more inclined to reckless actions, including greater propensity towards risk-taking, alcohol use, anti-social behavior etc.

“Masculinity’ may be hazardous to health. Gender role socialization and the association of masculinity with risk-taking behavior, acceptance of risk and a disregard of pain and injury may be factors leading to the hazardous actions on the part of men. These include, for example, excessive consumption of alcohol, drug use, aggressive behavior, to be in control of situations, and risky driving.”(WHO 2002)

It is in men’s biological nature to take more risks. The higher levels of testosterone found in men compared with women have been correlated with risk-taking, sensation-seeking as well as aggression and conflict (SIRC)

Peter Marsh and Peter Collett, authors of Driving Passion: The Psychology of the Car consider territorial imperative and aggressive defensive behavior associated with why men are more aggressive in driving. They suggest that the car is often the first symbol of independent ownership for a young man – his turf- and when ‘invaded’ by tailgating or perceived aggressive behaviors, he responds aggressively with territorial defense seen. This behavior was seen cross-culturally and in some animal species.
2.1.4 Driver Distractions
The most commonly performed potentially distracting behaviors while driving are talking to
other passengers in the vehicle (80%) and adjusting the car radio (65%). Other common
behaviors include eating/drinking (45%), making/accepting phone calls (40%), interacting with
children in the back seat (27%), and using a portable music player (30%). (NHTSA 2011)

- Men are more likely than women to use navigation systems (55% of men, 46% of women),
  use smartphones for driving directions (30% men, 21% women), and use portable music
  players with headphones (4% men, 1% women). (NHTSA 2011)
- As drivers, men are more likely than women to have lost concentration while changing their
car stereo – 42% versus 38% (source: 2007 AAMI Crash Index)
- Women are more likely than men to interact with children in the back seat (23% men, 31%
  women) and do personal grooming (3% men, 8% women). (NHTSA 2011)
- Men and women are equally likely to make or accept phone calls (42% men, 39% women),
  read incoming e-mail or text messages (10% men, 9% women), and send messages (both
  6%).(NHTSA 2011)

3. Questionnaire: Arab Society’s view on women driving
In order to attain a clear picture of what Arabs in the Middle East truly think about women driving, we
created this survey consisting of 10 questions. More than 500 men and woman living in the Middle East
were questioned, with a wide age range from 18 to 75 and older. We focused on comparing the views of
men and women, as well as the effect of educational level on the surveyor’s opinions. The questionnaire
is included in the appendix.

The results were analyzed based on 3 factors:

1-Gender: we wanted to compare between the views of men and women

2-Educational level: We wanted to see whether there was a correlation between a higher educational level
and more tolerance towards woman driving. We compared between: High school level, College level,
Bachelor degree, Masters level and Ph.D. level.

3-Age: We wanted to see if age had anything to do with a person’s opinion regarding women driving.
3.1 Questionnaire Results

Q: Do you support woman driving?

General Result: 89% answered yes, while 11% answered no.

Gender Comparison:

75% of men answered yes, while 25% answered no to women driving.

On the other hand, 99% of women said they support woman driving.

Educational Comparison:

High school degree: 100% answered yes.
College degree: 100% answered yes.
Bachelor’s degree: 85% answered yes.
Master’s degree: 93% answered yes.
PHD degree: 90% answered yes.

Age comparison:

18 to 24: 87% answered yes.
25 to 34: 91% answered yes
35-44: 75% answered yes
44-55: 90% answered yes.
Q: Are you with some countries such as Saudi Arabia that prevent women from driving?

General result: 90% answered no while 10% answered yes.

Gender Comparison:

94% of women answered no, a slightly higher percentage than the 86% of men who answered they were against Saudi Arabia driving restrictions.

Educational level comparison:

High school degree: 14% answered they were in support of Saudi Arabia against women driving.
College degree: 0% answered yes.
Bachelors degree: 10% answered yes.
Master’s degree: 10% answered yes.
PHD degree: 0% answered yes.

Age comparison:

18 to 24: 5% answered yes.
25 to 34: 14% answered yes
35-44: 25% answered yes
44-55: 0% answered yes.
Q: Do you think that woman driving has bad effect on traffic safety?

General results: 66% answered no, while 34% answered yes.

Gender Comparison:

Gender comparison: 54% of men answered that they did believe women have a bad effect on traffic, while 22% of women believed this.

Analysis Results: More than half of the men believe women add to traffic. More surprisingly a percentage of women think this as well.

Educational level comparison:

High school degree: 0% answered yes.
College degree: 0% answered yes.
Bachelor degree: 39% answered yes.
Master degree: 41% answered yes.
PHD degree: 40% answered yes.

Age comparison:

18 to 24: 30% answered yes.
25 to 34: 44% answered yes
35-44: 75% answered yes
44-55: 25% answered yes.
Q: Do you think that men drivers are better than women drivers or the same?

General results: 56% answered men were the better drivers, 40% answered that both men and women were equally good drivers, while 4% answered that women were better drivers.

Gender Comparison:

81% of men believe they are the better drivers, 19% believe women and men are equal in driving skills, 0% believe women are better.

On the other hand, women were less gender biased; with 53% believing women and men are equal in driving, 40% believe men are the better drivers, and 7% believe women are better.

Educational level

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<thead>
<tr>
<th></th>
<th>The same</th>
<th>Men Drivers are better</th>
<th>Women drivers are better</th>
<th>Total</th>
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<tr>
<td>Q4: High school (A)</td>
<td>57.14%</td>
<td>28.57%</td>
<td>14.29%</td>
<td>7.22%</td>
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<td>Q4: College degree (B)</td>
<td>66.67%</td>
<td>22.22%</td>
<td>11.11%</td>
<td>9.28%</td>
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<tr>
<td>Q4: Bachelor degree (C)</td>
<td>42.86%</td>
<td>54.76%</td>
<td>2.38%</td>
<td>43.30%</td>
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<tr>
<td>Q4: Master degree (D)</td>
<td>34.48%</td>
<td>62.07%</td>
<td>3.45%</td>
<td>25.96%</td>
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<tr>
<td>Q4: PhD degree (E)</td>
<td>10.00%</td>
<td>90.00%</td>
<td>0.00%</td>
<td>10.31%</td>
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<tr>
<td>Total Respondents</td>
<td>39</td>
<td>54</td>
<td>4</td>
<td>97</td>
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From the chart we can see that those with a High School degree and College degree tend to more fair to both sexes, more than half of them choosing that men and women are the same in their driving.

The higher the level becomes, the more there is a bias towards men’s drawing, with 90% of those holding a PHD answering that men were the better drivers.

**Age comparison:**

<table>
<thead>
<tr>
<th>Q2: 18 to 24 (A)</th>
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<th>Women drivers are better</th>
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<td></td>
<td>50.00%</td>
<td>47.60%</td>
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<td>25.71%</td>
<td>71.43%</td>
<td>2.86%</td>
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<td>25.00%</td>
<td>75.00%</td>
<td>0.00%</td>
<td>4.40%</td>
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<td>3</td>
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<tr>
<th>Q2: 45 to 54 (D)</th>
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<td>33.33%</td>
<td>66.67%</td>
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| Total Respondents | 34       | 56                     | 2                        | 91    |

The age group 18 to 24 is the most fair in terms of women and men driving, with 50% answering that men and women’s driving are the same.

0% of both age groups 35-44 and 45-54 believe women drivers are better.
Q: Do you think that preventing women from driving will improve traffic safety?

General results: 83% answered no, while 17% answered yes.

Gender comparison:

65% of men answered no, while 99% of women answered no.

Educational level comparison:

High school degree: 0% answered yes.
College degree: 0% answered yes.
Bachelors degree: 22% answered yes.
Master’s degree: 13% answered yes.
PHD degree: 30% answered yes

Age comparison:
18 to 24: 15% answered yes.
25 to 34: 23% answered yes
35-44: 25% answered yes
44-55: 16% answered yes.
Q: Do you think that preventing women from driving will solve traffic congestion?

General results: 83% said no, while 17% yes.

Gender comparison:

28% of men answered yes, while 11% of women answered yes.

Educational level comparison:

High school degree: 14% answered yes.
College degree: 22% answered yes.
Bachelors degree: 15% answered yes.
Master’s degree: 14% answered yes.
PHD degree: 40% answered yes

Age comparison:

18 to 24: 10% answered yes.
25 to 34: 27% answered yes
35-44: 50% answered yes
44-55: 25% answered yes.
3.2 Questionnaire Analysis of Results

1-Gender comparison: While 75% of men support women driving, and 86% are against Saudia Arabia’s restrictions, more than 54% of them believe women have a bad effect on traffic, and 81% believe they are the better drivers.

So while most men support the right of women to drive, they believe women have a bad effect on traffic, and that women driving is less skilled than men driving.

While 91% of women support women driving, 22% of them believe women have a bad effect on traffic. 53% believe men and women are equal in driving, and 40% believe men are better drivers.

These surprising results show that although women are for the choice of women driving, they have an idea that men are the better drivers, and a percentage of them believe women lessen traffic safety.

Other statistics:

Of those men and women who support women driving:

26% believe women have a bad effect on traffic safety.

45% believe men and women are the same as drivers, 50% believe men are better, and only 5% believe women are better.

The danger of stereotypes

While statistically considered “safer” drivers, women have often been socially stereotyped as “bad drivers.” Some psychologists have wondered if women buy into this belief and succumb to the “stereotype threat” in a way that actually affects their driving and confidence.

In an article for AAA, an Australian study found that women in a driving simulator who were given negative stereotypes about women drivers were twice as likely to collide with a jaywalking pedestrian.

2- Educational level comparison:

Surprisingly, those with a lesser education level seemed more sympathetic to women’s driving, with 0% of those with high school or college degree believing women had a bad effect on driving, compared to 40% of those with PHD levels who believe they do.

More than half of those with high school or college degree believe women and men are the same as drivers, while 90% of those with PHD believe men are the better drivers.

3- Age comparison:

The age group 34-45 yrs seemed to be the least sympathetic to women driving, with 25% of them who agree with Saudi Arabia laws against women driving. 75% of them believe women have a bad effect on traffic, and 50% believe preventing women from driving will solve traffic.

The age group 18-24 is the least gender biased when it comes to women driving vs men driving, with more than half believing that men and women driving was equal.

4- Other Statistics:
In a similar survey conducted, we asked what is the biggest reason you support women driving. 22% chose Equality, 58% chose to fulfill daily needs, and 20% chose to give her maximum freedom.

This correlates with the development of the Jordanian society and Arab society in general. Women are a vital, interactive part of our community; they are mothers, employees, bosses and leaders. Having a car is a necessity in order to keep up with life’s fast and hectic pace.

4. CONCLUSIONS

The following conclusions can be concluded from this research study:

1. It was concluded that the majority of the public are with women driving, but they think that men are better drivers. This is a social misconception which must be fixed, because it has no basis. Though men have more natural skill for driving, this does not mean they are safer or better drivers. This stereotype actually affects the way women think of themselves and even effects their driving.

2- After looking at the statistics, it is obvious that men are responsible for most of the traffic accidents which happen across the globe, specifically the most serious ones. Therefore, it is concluded that women driving has no negative effect on traffic safety, where according to the study women are more cautious than men.

3- There is absolutely no reason to ban women from driving, rather a solution must be found to address men’s aggressive and reckless behaviors when it comes to driving.

5. RECOMMENDATIONS

The following recommendations are needed to improve traffic safety:

1. Women have the right to be equal with men in driving everywhere.

2. The time has come for Saudi Arabia to allow women driving with consideration to religious legitimacy controls.

3. Widen the study sample to include most areas inside Saudi Arabia and Gulf area.

4. Train all the traffic personnel to deal with the statistics programs such as SPSS software and keep them updated with the recent studies and researches regarding traffic safety issues.

5. Set up training workshops for aggressive drivers, especially young men around the age of 25.

6. Update the traffic police personnel with the most common mistakes drivers make, and to give them monthly classes on dealing with traffic safety and congested traffic.
7. Create more collaboration and coordination between all traffic and transportation agencies to improve traffic safety and achieve the goal of reducing traffic accidents frequency and severity.

8. The urgent need to adopt and implement a practical traffic safety strategy that has clear targets, objectives, action plans, time frame, and legislations.

9. The time has come to establish the Arab National Traffic Safety Council to take its role in handling all the traffic safety issues in Arab countries.

10. Banishing the stereotype among men and especially among women that men are better drivers.

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REFERENCES


Storie, V. J. (1977) Male and Female Drivers: Differences Observed in Accidents, Transport and Road Research Laboratory Digest LR 761, London, UK
Appendix
1. Are you male or female?
   - Male
   - Female

2. What is your age?
   - 18 to 24
   - 25 to 34
   - 35 to 44
   - 45 to 54
   - 55 to 64
   - 65 to 74
   - 75 or older

3. Are you now married, widowed, divorced, separated, or never married?
   - Single
   - Married
   - Widowed
   - Divorced
   - Separated

4. What is your education level?
   - Less than High school
   - High school
   - College degree
   - Bachelor degree
   - Master degree
   - PhD. degree

5. Do you support woman driving?
   - Yes
   - No

6. Are you with some countries such as Saudi Arabia that prevent women from driving?
   - Yes
   - No
7. Do you think that woman driving has bad effect on traffic safety?
   - Yes
   - No

8. Do you think that men drivers are better than women drivers or the same?
   - The same
   - Men drivers are better
   - Women drivers are better

9. Do you think that preventing women from driving will improve traffic safety?
   - Yes
   - No

10. Do you think that preventing women from driving will solve traffic congestion?
    - Yes
    - No