

Gender Differences in Travel Behavior in the Arab World: Comparison of Case Studies from Jordan and Israel

Wafa Elias

SCE, College of Engineering

כנס צדק סביבתי בחברה

28.11.2021

The objectives of the study

- to extend the research on gendered differences in travel patterns in the Arab world,

by studying similarities and differences in travel behaviour between Israeli Arab and Jordanian Arab communities

- to explore potential causes for these differences in travel behaviour between the two communities.

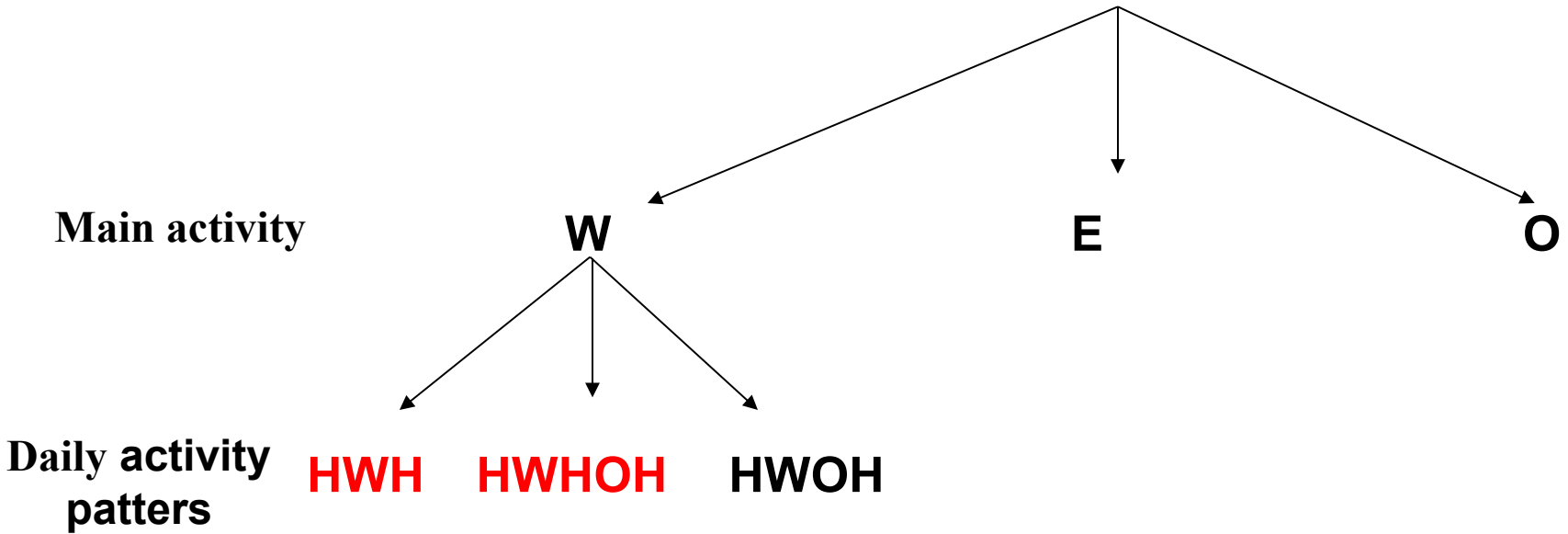
Methodology

- The study is based on a survey of **300** households in Israel and **200** households in Jordan.
- **The survey includes two parts:**
 - First part asked socio-economic and demographic characteristics.
 - Second part concerned travel behavior, including number of trips, their purpose, their mode, their destinations and time.

Two methods were employed:

- **A descriptive statistical analysis**
- **Develop a daily activity model , by using multinomial logit model.**

The model system



Case studies

The research focuses on two Arab communities, the Israeli Arab minority, and the general population of Jordan

- Three Israeli Arab towns were selected:
 - **Majd-Elcrum** (population size-12,700 residents)
 - **Shfaram** (population size-33,000 residents)
 - **Rami** (population size-8,000 residents)
- One Jordanian town:
 - **Al Husn** (population size-33,000 residents)

General socio - economic features

Feature	Jordan	Israeli Arabs
Population size	5,723,000	1,468,800
Population growth rate	2.8	Moslems=2.8 Christians=1.3
Household size	6.1	5.04
Percentage of Population under Age 18	47.0	44.4

Socio economic features (based on the survey

Demographic Characteristic	Gender	Jordan	Israel
N	Women	358	593
N	Men	394	571
Participants Age 18 and older	Women	263	418
	Men	272	408
Income			
Below the average		54.0%	30.6%
About the average		24%	13.4%
Over the average		22.0%	56.0%
Percentage of population with a driver's license (age 18 and older)	Women	20.9	50.4
	Men	59.6	90.0
Percentage of population with a university degree	Women	47.9	34.9
	Men	44.5	36.8

Socio economic features (based on the survey)

Demographic Characteristic	Gender	Jordan	Israel
Work status (entire sample)		N=746	N=1164
Salaried		22.1	35.9
Self-employed		8.7	2.7
Unemployed		4.5	4.4
Pensioner		9.5	6.8
Housewife		18.6	17.9
Student		36.6	32.3
Work location (of those 18 and older) within the town	Men	32.2	47.9
	Women	60.3	57.1
Average number of cars in the household		0.82	1.12

Results descriptive analysis



SHAMOON COLLEGE OF ENGINEERING

Summary Comparisons of Trips Made

Variable	Gender	Jordan	Israel
Per Individual(Daily Mean)		N=529	N=1,043
Trips	Women	2.4	3.9
	Men	3.1	5.3
Tours	Women	1.2	1.6
	Men	1.3	2.0
Travel time (hours)	Women	01:11	00:53
	Men	01:47	01:31
Time Away from home (hours)	Women	05:23	05:22
	Men	06:40	07:54

Summary Comparisons of Trips Made

Variable	Gender	Jordan	Israel
Per Individual(Daily Mean)		N=529	N=1,043
Travel time by motorized means (minutes)	Women	55.6	43.1
	Men	97.4	79.3
Travel time on foot (minutes)	Women	16.3	9.8
	Men	11.0	8.4
Trips outside the town (minutes)	Women	30.9	21.3
	Men	39.4	24.7

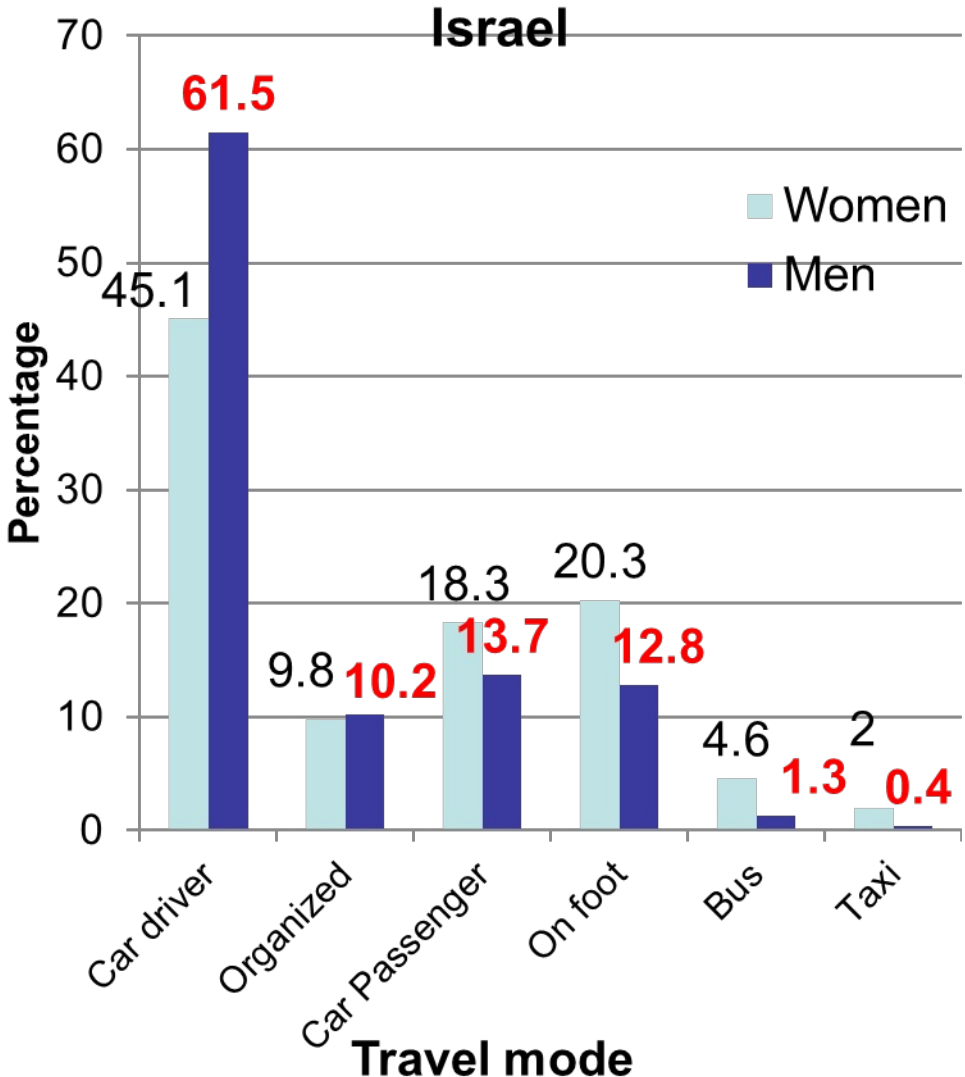
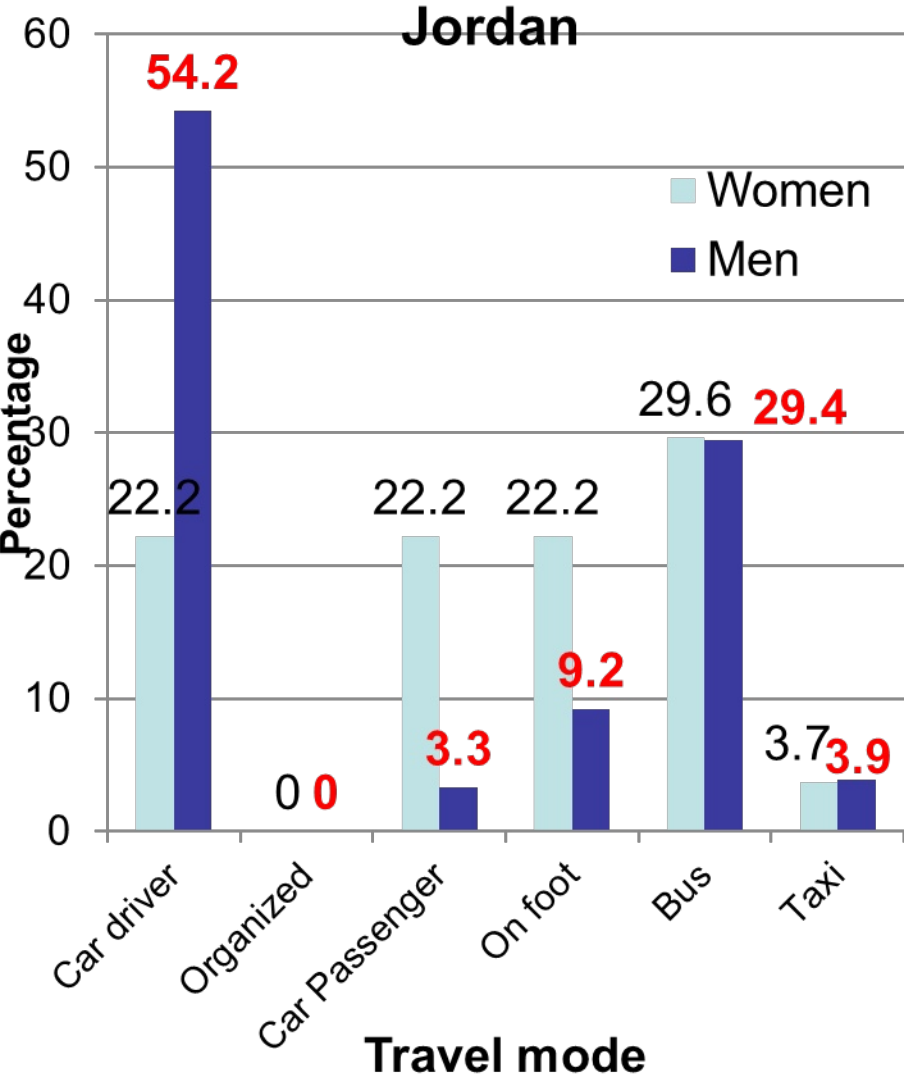
Distribution of the Main Daily Activity by gender and nationality (over age 18)

	Men		Women	
	Israel (%)	Jordan (%)	Israel (%)	Jordan (%)
Work	63.9	55.1	38.2	19.4
Shopping	4.7	8.8	6.7	4.2
study	6.4	10.3	7.6	12.5
Self-Arrangements	4.9	1.5	7.4	0.4
Social activities / Leisure	14.7	5.2	18.8	8.0
Home	5.4	19.1	21.2	55.5

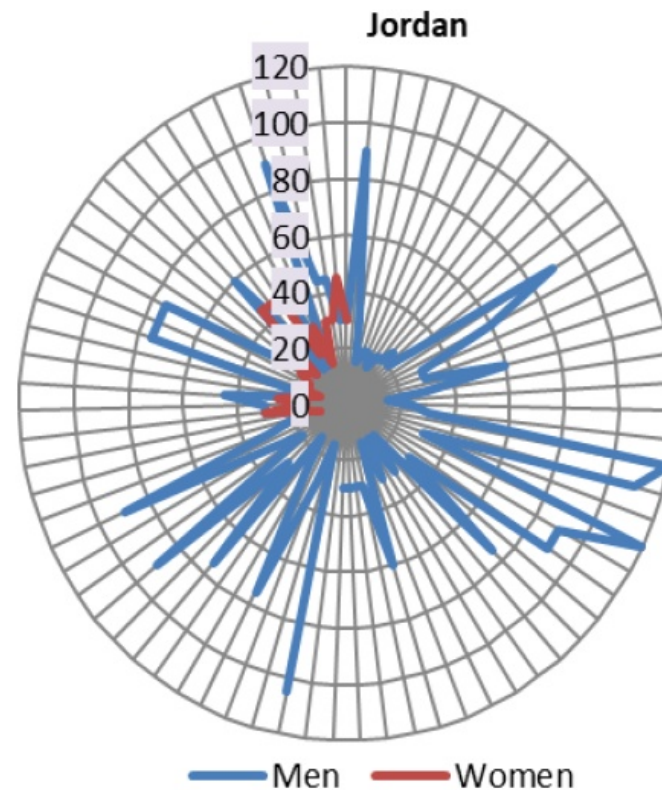
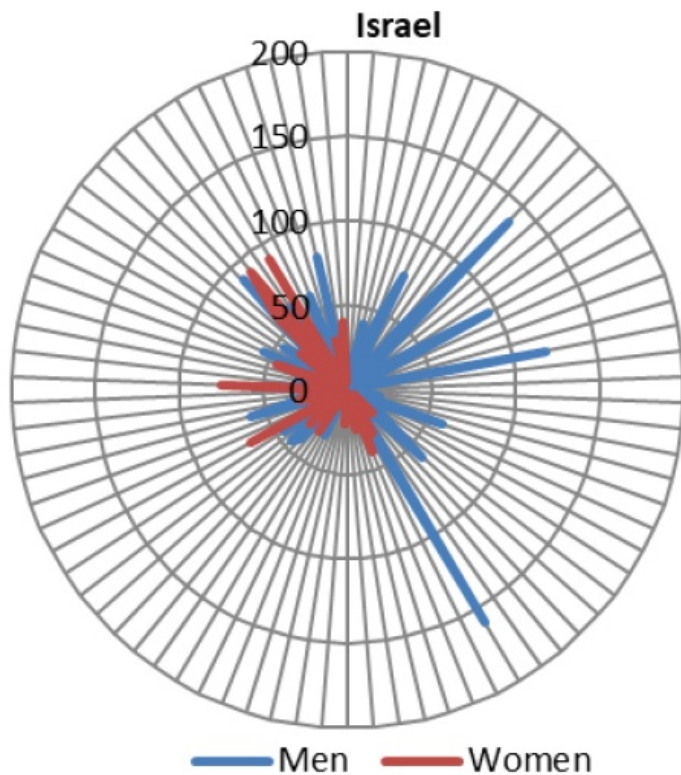
The lifestyle of the Arab women in !!!Israel



Main Daily Activity by Mode (commuting) adults



Duration of journey to work



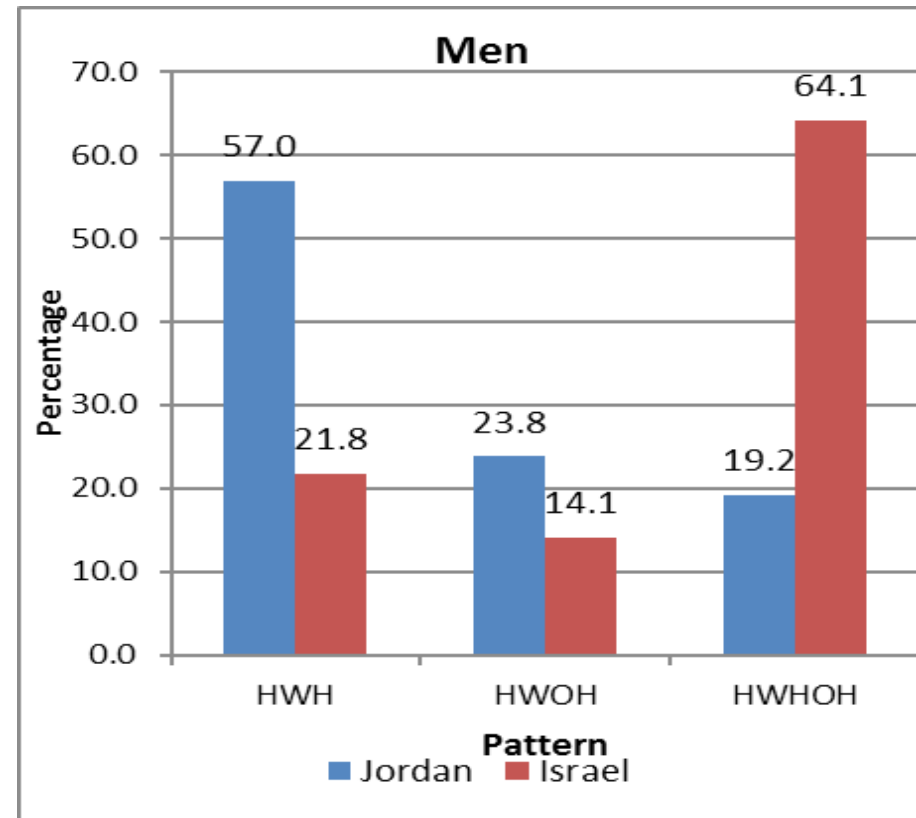
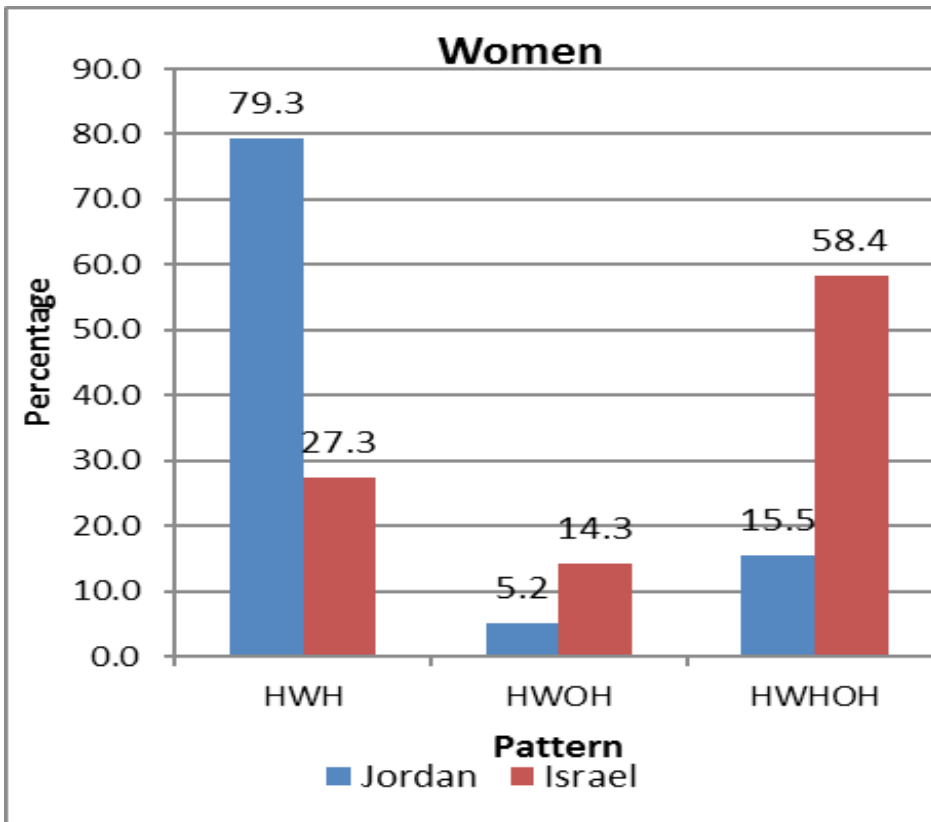
The average number of all activities participation by purpose for Israeli and Jordanian men and women.

Trip Purpose	Gender	Country	
		Jordan	Israel
Commuting to Work	Men	0.63	0.91
	Women	0.14	0.35
Shopping	Men	0.12	0.14
	Women	0.04	0.18
Drop Off / Pick Up	Men	0.05	0.28
	Women	0.01	0.21
School / Study	Men	0.07	0.04
	Women	0.07	0.05
Social Activities / Leisure	Men	0.13	0.82
	Women	0.09	0.50

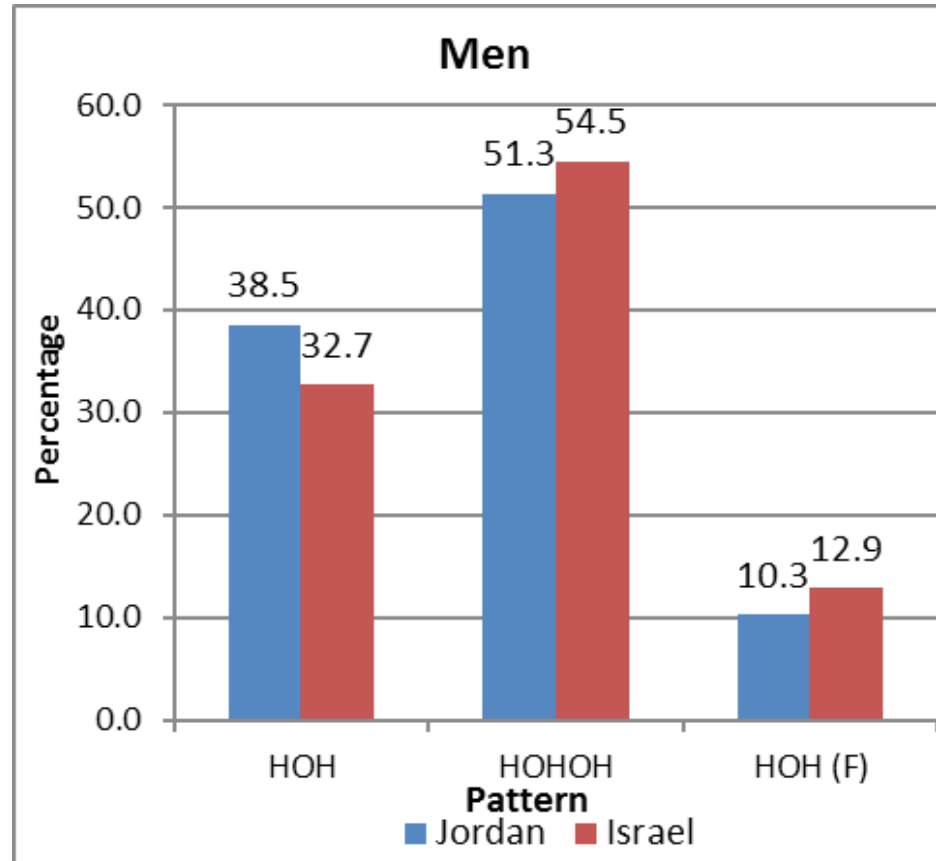
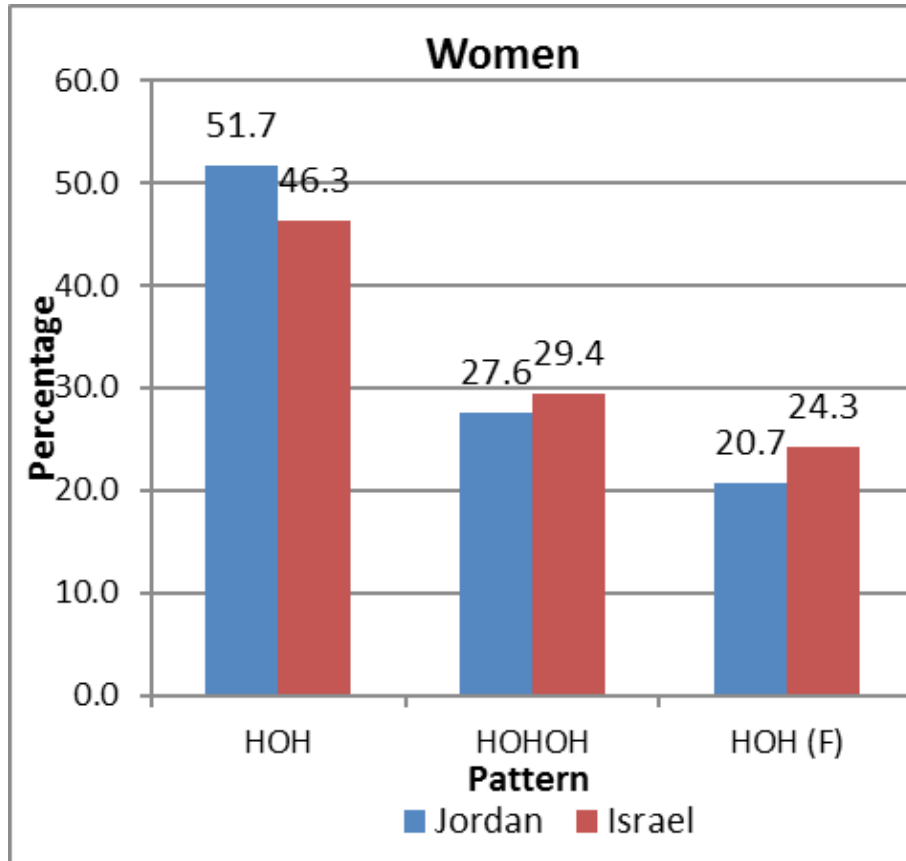
Distribution the trips by Mode

Variable (Daily Mean)	Age	Gender	Geography	
			Jordan	Israel
Car driver	Adults	Women	18.2	40.1
		Men	53.2	68.9
Organized	Adults	Women	0	3.2
		Men	0	2.7
Car Passenger	Adults	Women	23.2	24.8
		Men	6.3	9.1
On Foot	Adults	Women	27.1	27.4
		Men	15.3	17.3
Bus	Adults	Women	22.1	3.5
		Men	22.3	1.7
Taxi	Adults	Women	9.3	1.0
		Men	2.9	3.

The complexity of the daily activity pattern, by gender and community when the main purpose is work



Complexity of the daily activity pattern, by gender and country, when the main purpose is other than work



Estimation Results of the Main Daily Activity Pattern Model

- This model estimates the probabilities of the main activity being one of three: work, education, or other.

Who tend more to stay at home or participate in one activity by foot?

- Jordanian women,
- Aged less than 36,
- Hasn't driving license,
- More children under 18 at home more tendency to stay at home

Summary of the main results of the daily activity model

- People older than 65 are less likely to work than are younger people.
- People older than 35 are less likely to study.
- Men are more likely than women to work.
- Women are more likely than men to study.
- Married people are more likely to work and less likely to study.

- People with an academic degree are much more likely to work than are people without an academic degree, **an effect that is stronger in Jordan.**
- People that holding a driver's license are more likely to work.
- Number of cars in the household is an important factor for work participation in Israel, **but not in Jordan.**

The main results of the complexity of daily activity patterns model, when the main trip is for work

- People aged 36 to 55 are more likely to have a complex daily activity pattern.
- Male gender and having a driving license both increase the likelihood of a complex activity pattern.
- People who work outside of their city of residence are less likely to have a complex daily activity pattern.
- The more cars in a household and a higher income increase the more likelihood to have a complex pattern of travel.
- Israelis are more likely to have a complex pattern of travel than Jordanians.

SUMMARY AND CONCLUSIONS

- Men in both Israel and Jordan are more mobile than women.
- A significant difference in travel behavior is existed between the Israeli and Jordanian Arab communities.
- Israeli Arab women are more mobile than Jordanian women.

SUMMARY AND CONCLUSIONS

- Among all the Israeli Arab communities transit provision is very low and had a correspondingly low mode share, while for Jordanian communities transit is one of the major modes.
- Demographic and socio-economic factors have a significant effect on the diversity of participation in various activities.

SUMMARY AND CONCLUSIONS

- Demographic and socio-economic characteristics **cannot solely explain gendered disparities.**
- Further research is needed:
 - (1) to better understand cause for gender differences such as: culture, merging cultures, norms, urban design, land-use patterns, transport system.
 - (1) To suggest an effective design and implementation of transportation policies

Thank you for your attention

Wafa Elias

Institute address: SCE, College of Engineering, Ashdod, Israel

Email wafael@sce.ac.il

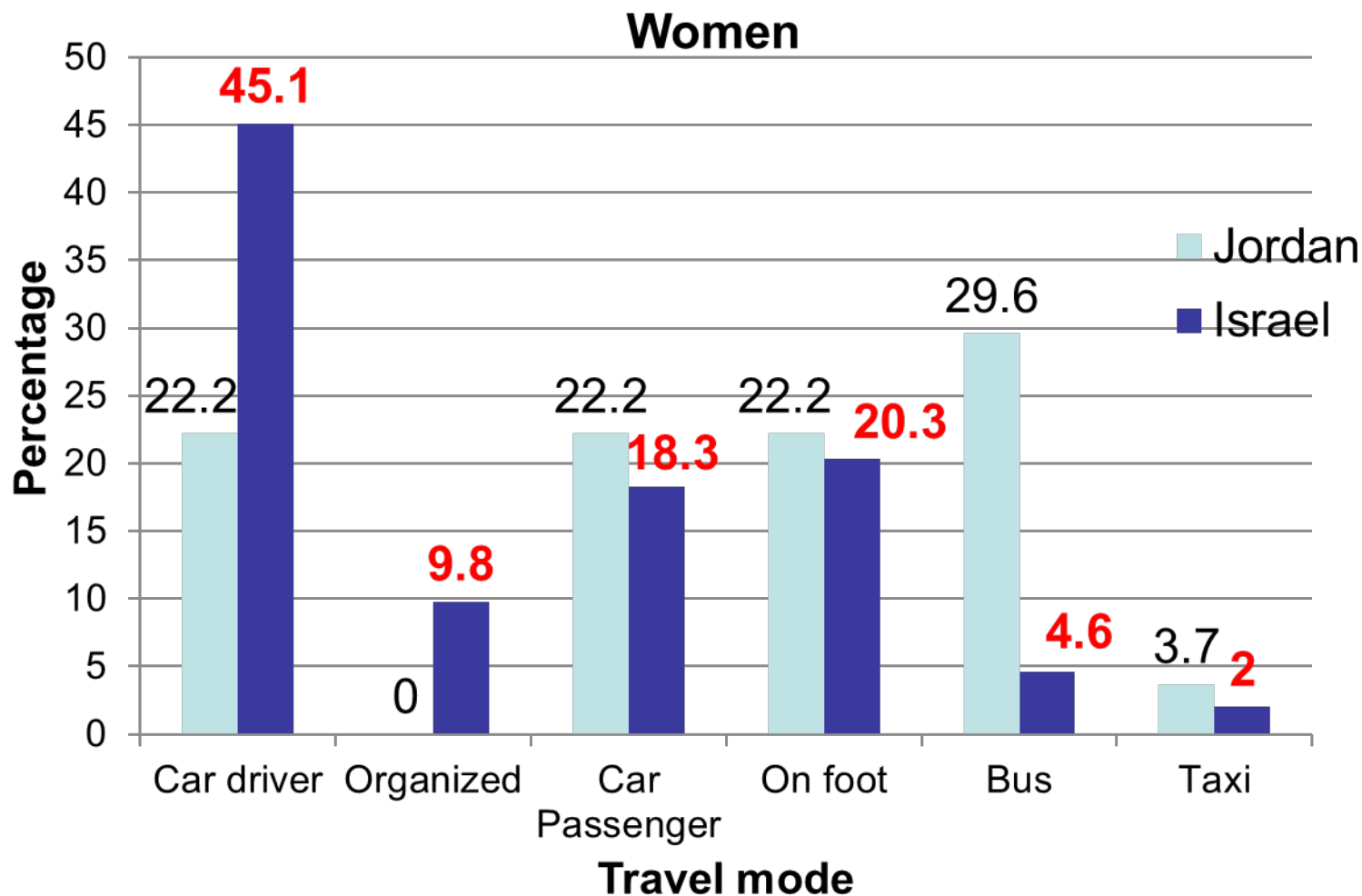
Comparisons for those who made trips,
for participants who were over 18 years old.

Variable	Age	Gender	Jordan	Israel
Daily Mean (per individual)			N=529	N=1043
Trips	Adults	Women	2.4	3.9
		Men	3.1	5.3
Tours	Adults	Women	1.2	1.6
		Men	1.3	2.0
Travel Time (Hours)	Adults	Women	01:11	00:53
		Men	01:47	01:31
Travel Time by foot (Minutes)	Adults	Women	16.3	9.8
		Men	11.0	8.4

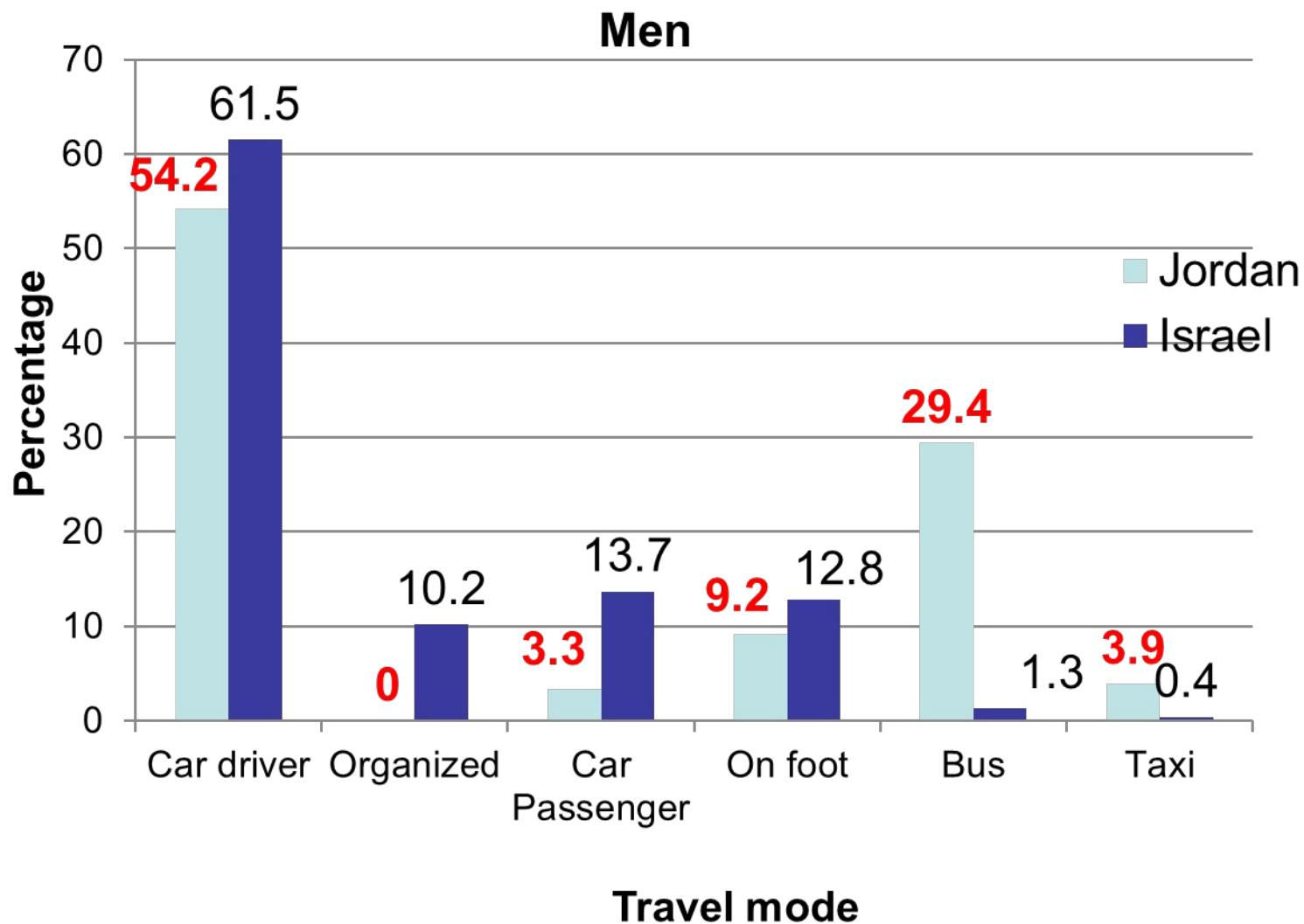
Comparisons for those who made trips

Variable	Age	Gender	Jordan	Israel
Daily Mean (per individual)			N=529	N=1043
Travel Time by motorized means (Minutes)	Adults	Women	55.6	43.1
		Men	97.4	79.3
Time Away from home (Hours)	Adults	Women	05:23	05:22
		Men	06:40	07:54
Trips outside the town	Adults	Women	30.9	21.3
		Men	39.4	24.7

Commuting Mode for Women in Jordan and Israel



Commuting Mode for Men in Jordan and Israel



Estimation Results of the Daily Activity Pattern When the Main Trip Is for Work

	Complex Pattern	
Variable description	β	t-statistics
Constant	2.35	6.32
Age 36-55	0.79	3.57
Status (married)	-	-
Gender (male)	0.57	2.45
Under18 (study)	-	-
Driver's License	0.96	2.10
Work place (outside the town)	-0.7	-3.25
Number of cars in household	0.54	3.20
Income	0.149	1.86
Nationality (Israeli Arabs)	2.27	8.88
Likelihood with constants only = -538.237 Final value of Likelihood = -364.170 $\rho^2=0.301$ N=		