

EV Trends 2016





Key Figures 2016

Country	EVs sold in 2016	Total sales 2016	EV Market Share 2016	Monetary Measures	Infra-structure	Traffic Regulation	Charging Stations total	Population in Mio	Chargers per one million population	Highway km	Stations per highway km	National Purchase Power	Daily Driving Distance	Range Anxiety (1=low; 6=high)
Australia	1.433	927.274	0,15%	0	0	0	60	24,642	2,43	1.700	0,04	103,9	28,70	3,06
Belgium	9.598	539.519	1,78%	6.500	1	0	1.715	11,444	149,86	1.763	0,97	85,9	34,60	3,65
Brazil	48	1.676.722	0,00%	500	0	0	60	211,243	0,28	11.000	0,01	36,2	42,98	1,52
Canada	10.842	661.088	1,64%	6.000	1	1	4.465	36,626	121,91	16.900	0,26	99,5	30,63	3,47
Switzerland	5.654	317.318	1,78%	5.000	0	0	3.828	8,454	452,80	1.361	2,81	105,9	32,85	3,96
China	350.578	24.376.902	1,44%	6.000	0	2	81.000	1388,233	58,35	97.355	0,83	23,5	30,73	3,49
Germany	28.079	3.351.607	0,84%	4.000	0	0,2	24.667	80,636	305,91	12.845	1,92	100,0	32,52	4,27
France	34.205	2.015.177	1,70%	7.000	1	0	16.000	64,939	246,39	11.392	1,40	80,3	33,08	4,20
Hongkong	1.367	41.600	3,29%	8.000	0	0	1.500	7,402	202,65	100	15,00	71,8	41,94	2,75
India	1.023	2.966.637	0,03%	3.000	0	0	328	1342,513	0,24	1.208	0,27	9,5	37,89	2,67
Italy	3.463	1.824.968	0,19%	5.000	1	0,5	2.205	59,798	36,87	6.661	0,33	69,7	31,48	1,93
Japan	23.438	4.146.459	0,57%	5.000	0	0	40.000	126,045	317,35	7.383	5,42	70,2	19,11	3,09
Korea	6.108	1.533.813	0,40%	5.000	0	0,5	1.270	50,705	25,05	4.044	0,31	56,5	27,31	3,57
Netherlands	23.129	382.825	6,04%	20.000	1	0	28.246	17,033	1658,31	2.808	10,06	97,6	32,00	3,64
Norway	45.685	154.603	29,55%	25.000	2	3	8.734	5,331	1638,40	664	13,15	138,7	18,54	4,03
Russia	416	1.239.680	0,03%	2.000	0	0	200	143,375	1,39	1.400	0,14	42,5	55,24	2,46
Taiwan	2	206.092	0,00%	2.000	0	0	360	23,405	15,38	1.335	0,27	60,0	23,07	2,88
Great Britain	39.351	2.692.786	1,46%	6.000	1	1	12.320	65,511	188,06	6.016	2,05	81,6	38,26	3,26
USA	158.212	6.872.729	2,30%	7.500	2	1	42.918	326,474	131,46	75.008	0,57	109,3	33,46	3,35
South Africa	159	361.289	0,04%	0	0	0	40	55,436	0,72	1.927	0,02	25,0	50,88	2,84



Norway

Tax incentives (WSDOT 2011/Bakker et al. 2012)

- EVs are exempt from non-recurring vehicle fees
- EVs are exempt from sales tax
- EVs are exempt from annual road tax. Tax free allowance given for this tax (calculated as NOK/km) i.e. for trips to/from working places and for business trips is considerable higher for EVs. Reduction for companies: 75 % for EV and 50 % for HEVs
- EVs are exempt from taxation for company car benefit tax from 1 January 2009
- Registration tax is calculated according to weight, motor power and CO₂ emissions. The vehicles are classified by groups per CO₂ 'tax. EVs are exempt from this tax
- Reduced tax for leasing EVs

Rebates/subsidies (Bakker et al. 2012)

- *Grants for individuals.* The Norwegian government grants subsidies (approximately €4.000) to individuals who buy an EV or HEV class N1 or M1
- *Grants for companies.* To purchase EVs, the funding is 50 % of vehicles price; up to 50 % are given to companies

Local benefits ('non-fiscal incentives') (WSDOT 2011/Bakker et al. 2012)

- *Domestic Ferries.* EVs have free use of domestic ferries
- *Free access.* EVs have free access to public areas
- *Free parking.* EVs can park for free in public parking places. This measure has been in place since the beginning of the 1990s
- *Toll roads.* EVs can use the toll roads for free
- *Use of Bus and Taxi lanes.* EVs are permitted in bus and taxi lanes. This measure has been in place since 2003



Clusters regarding cultural indices

	Power Distance Index low vs. high	Collectivist (low) vs. Individualistic (high)	Uncertainty Avoidance low vs. high	Orientation, low = short term, high = long term
Australia	36,75	79,13	48,50	43,00
Canada				
USA				
Netherlands				
Norway				
Switzerland				
Great Britain				
South Africa				
Belgium	64,67	45,00	70,58	74,50
Brazil				
Taiwan				
China				
Germany				
Hongkong				
India				
Italy				
Japan				
Korea				
Russia				
France				



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South Africa	159	361.289	0,04%	0	0	0	40	55,436	0,72	1.927	0,02	25,0	50,88	2,84



Key Figures 2016

	Cluster 1	Cluster 2
EV Market Share 2016	5,37%	0,86%
Monetary Measures	7.437,50	4.500,00
Infrastructure	0,88	0,25
Traffic Regulation	0,75	0,27
Chargers per one million population	524,26	113,31



**Monetary
Measures**

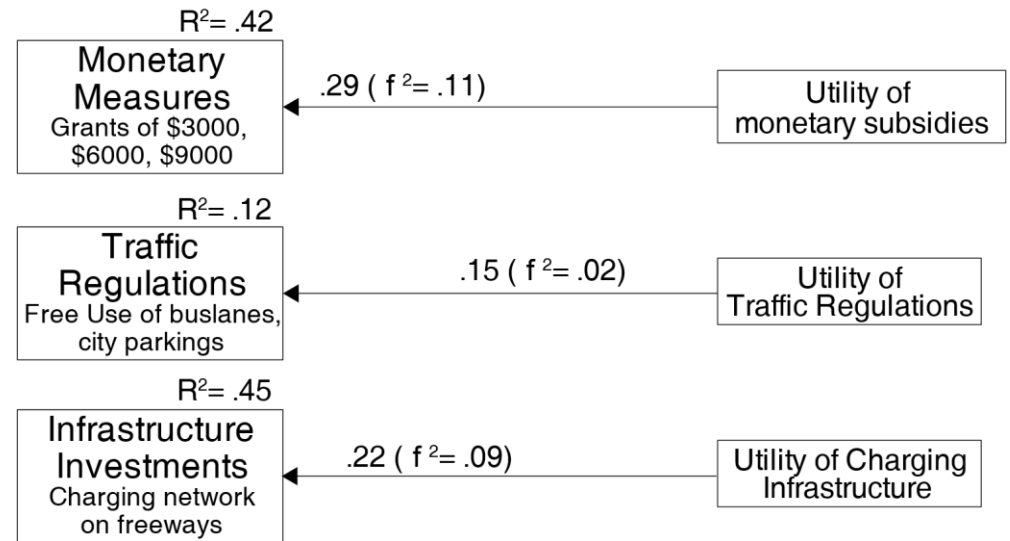
Grants of \$3000,
\$6000, \$9000

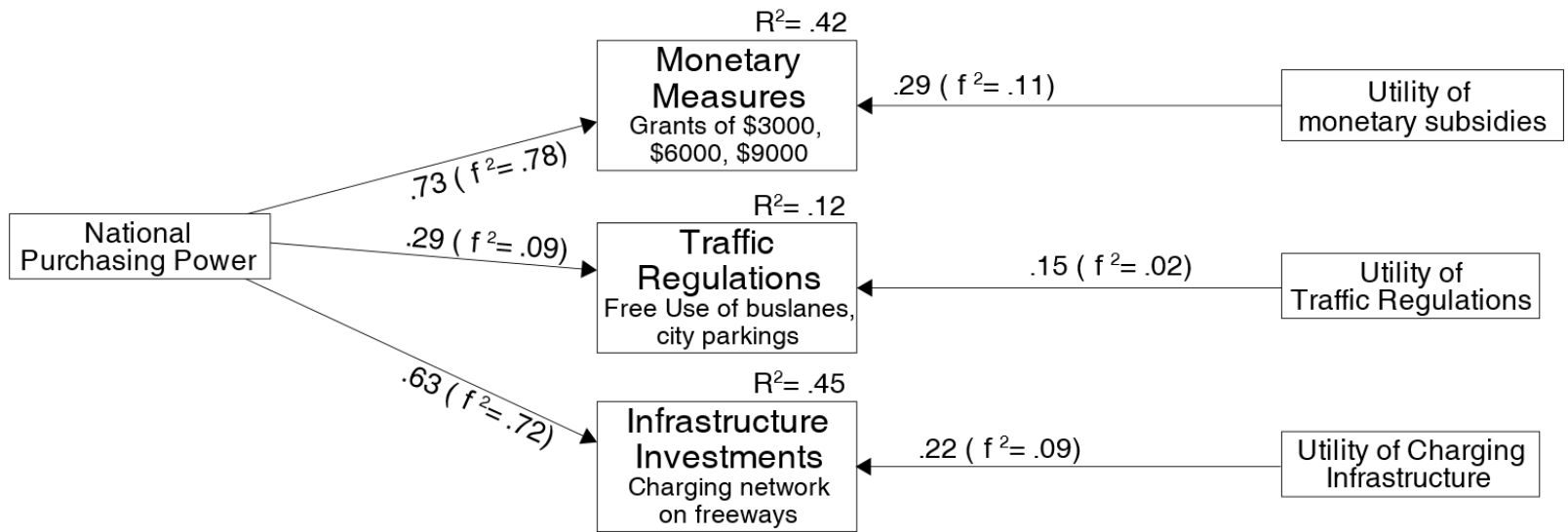
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Regulations**

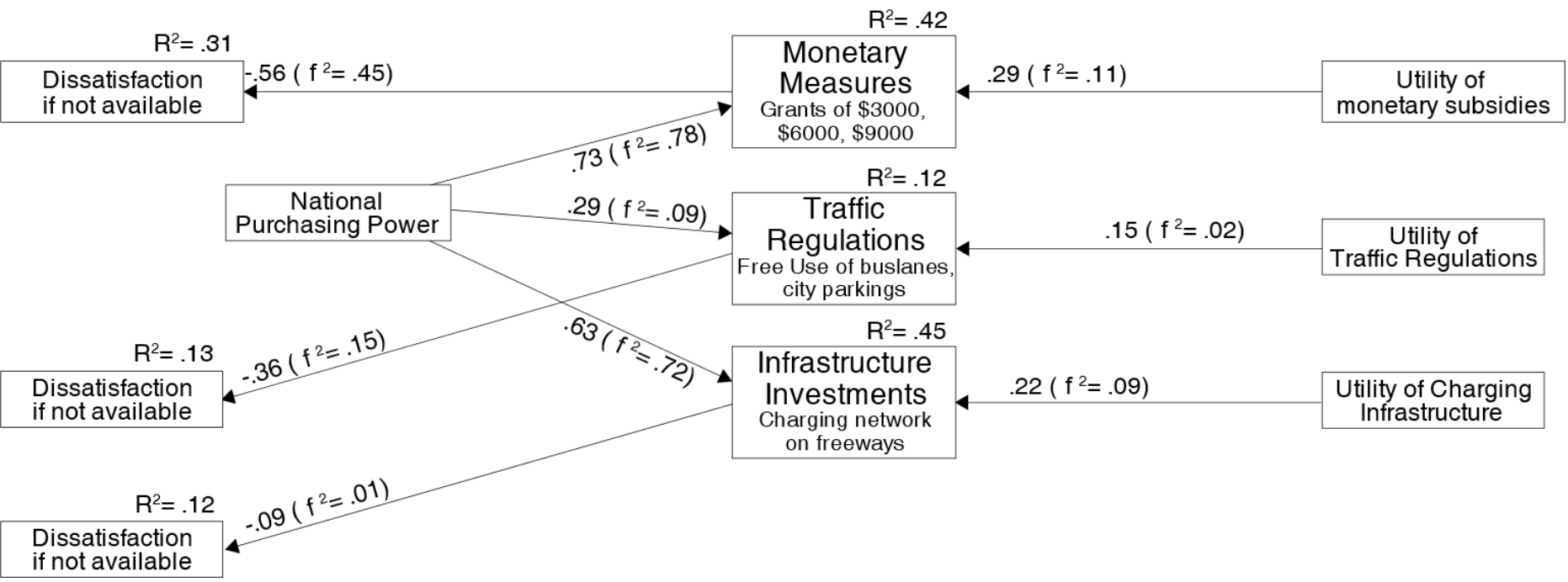
Free Use of buslanes,
city parkings

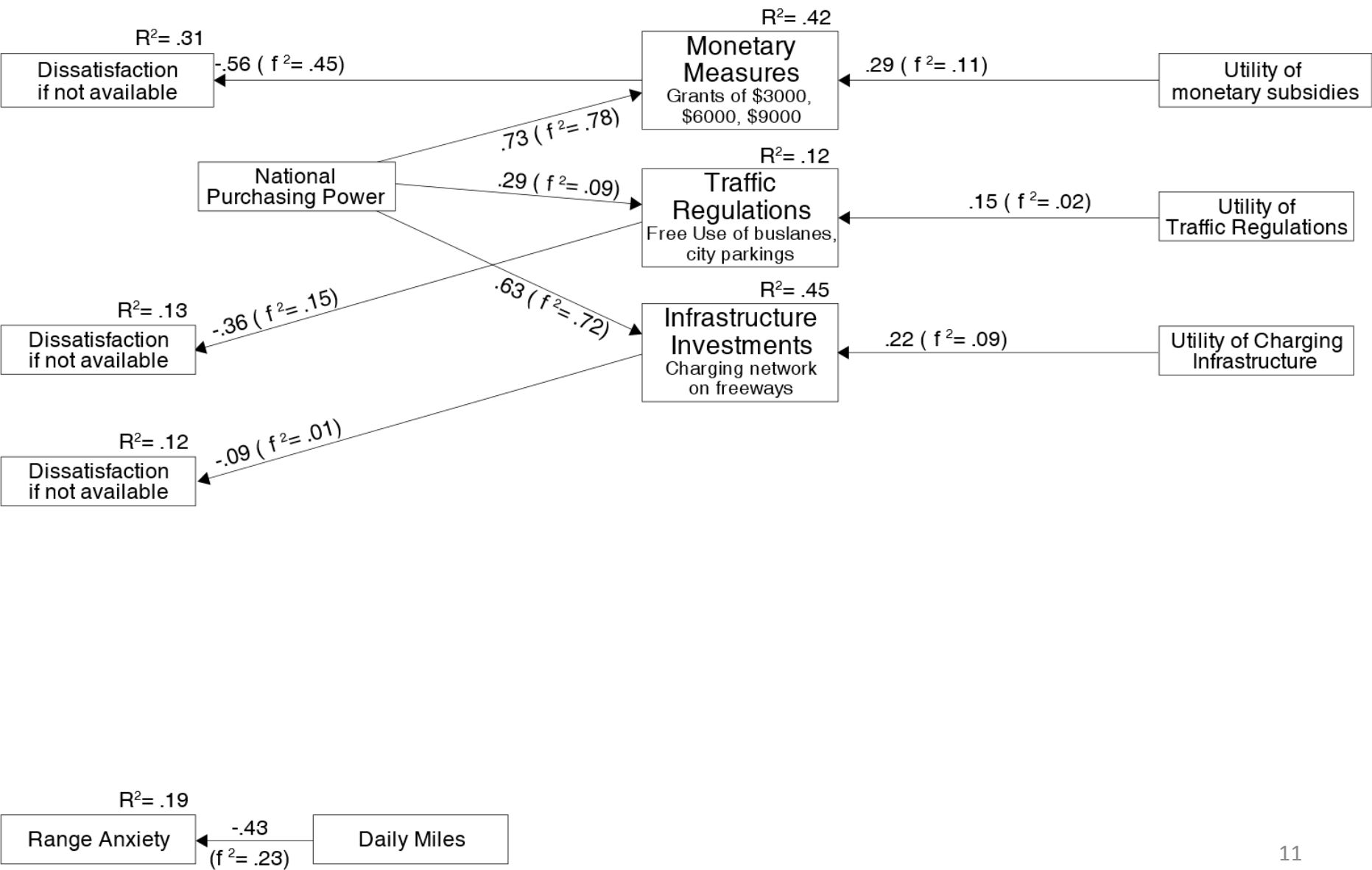
**Infrastructure
Investments**

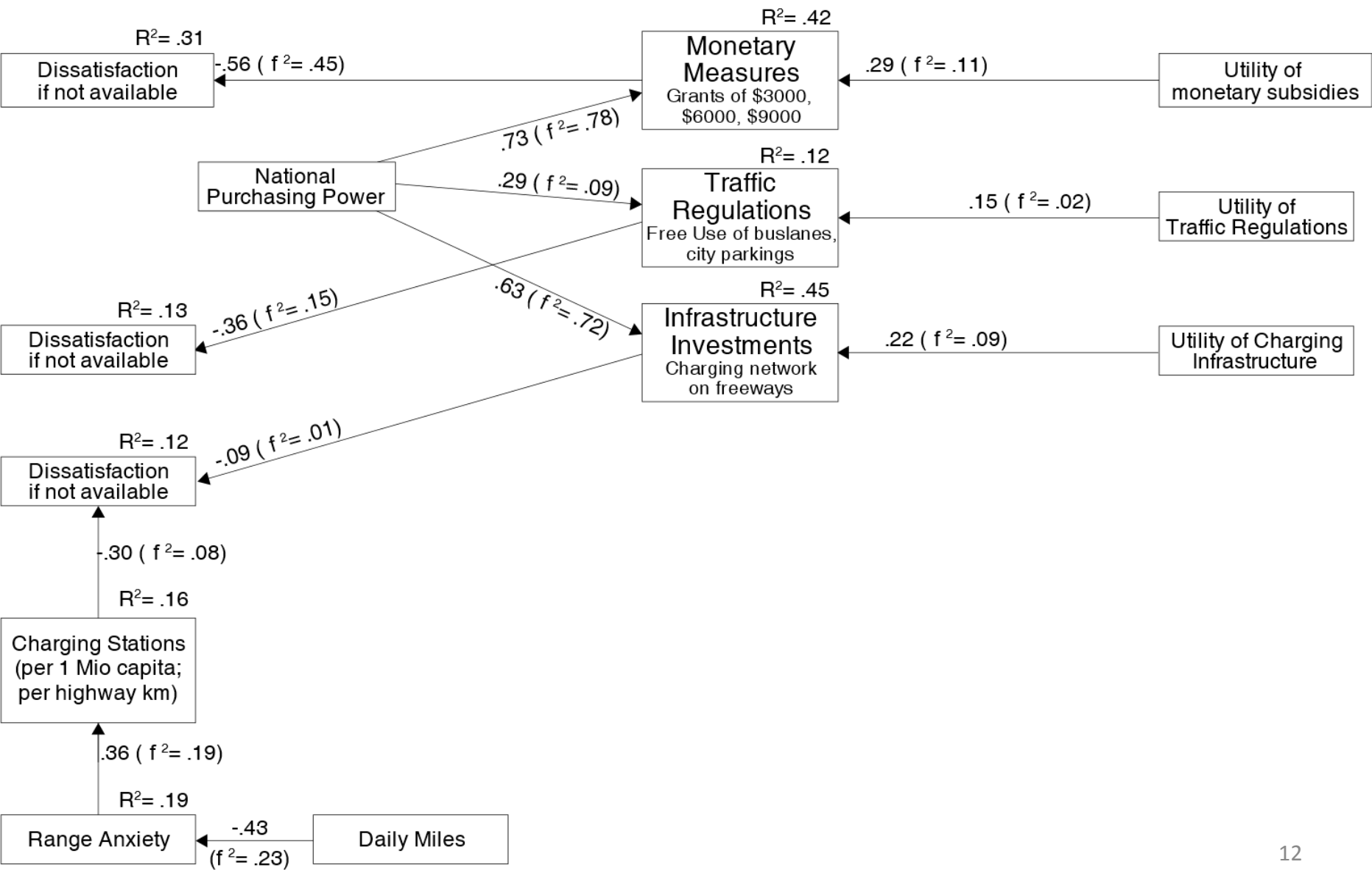
Charging network
on freeways

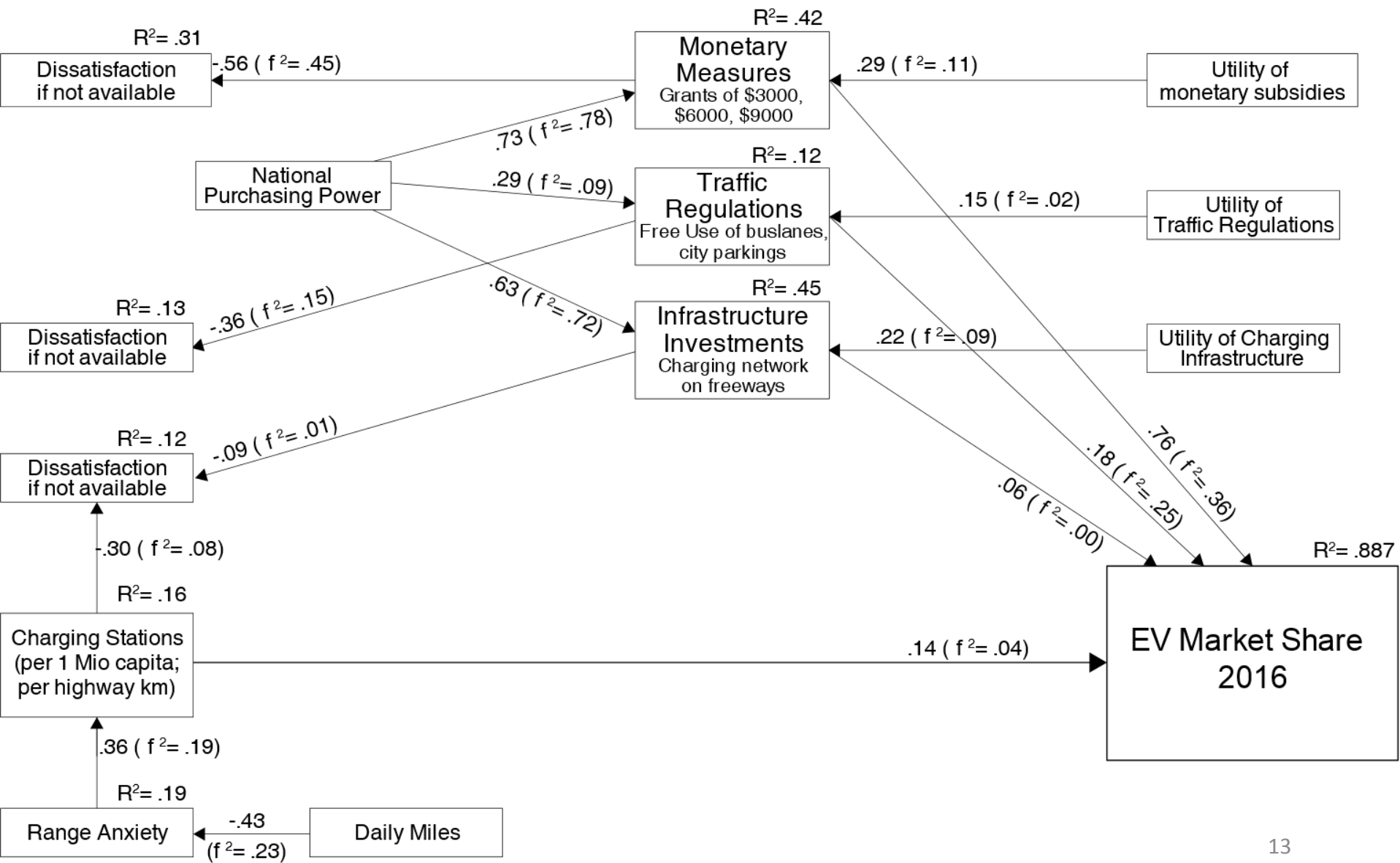


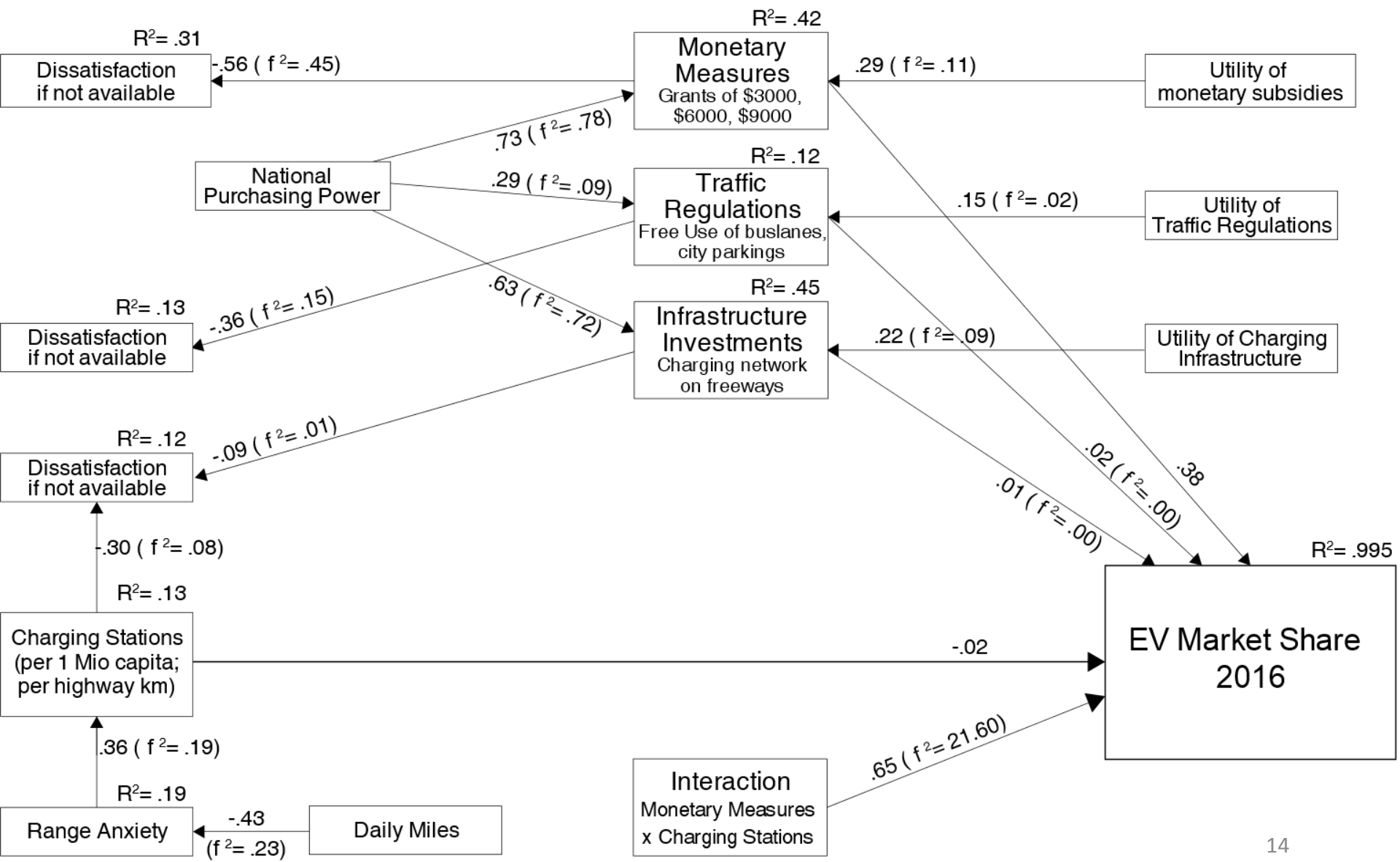














Conclusion:

Attractive monetary incentives increase the acceptance of EVs, however, investments in charging infrastructure increases acceptance overproportionally.

Possible reason:

Effectiveness of monetary incentives is linear (dollars per car), whereas effectiveness of charging infrastructure is more efficient (dollars for more than one car).



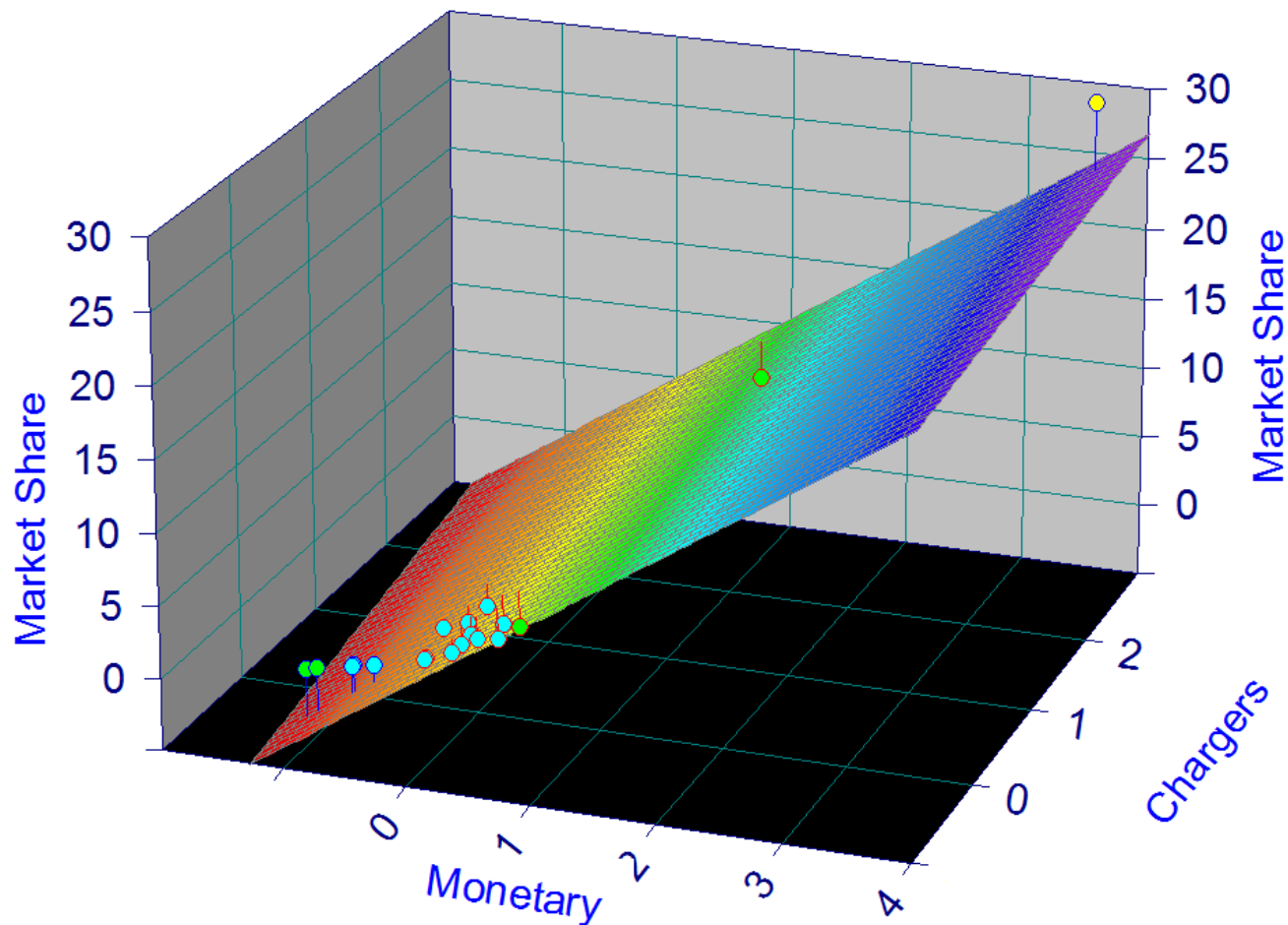
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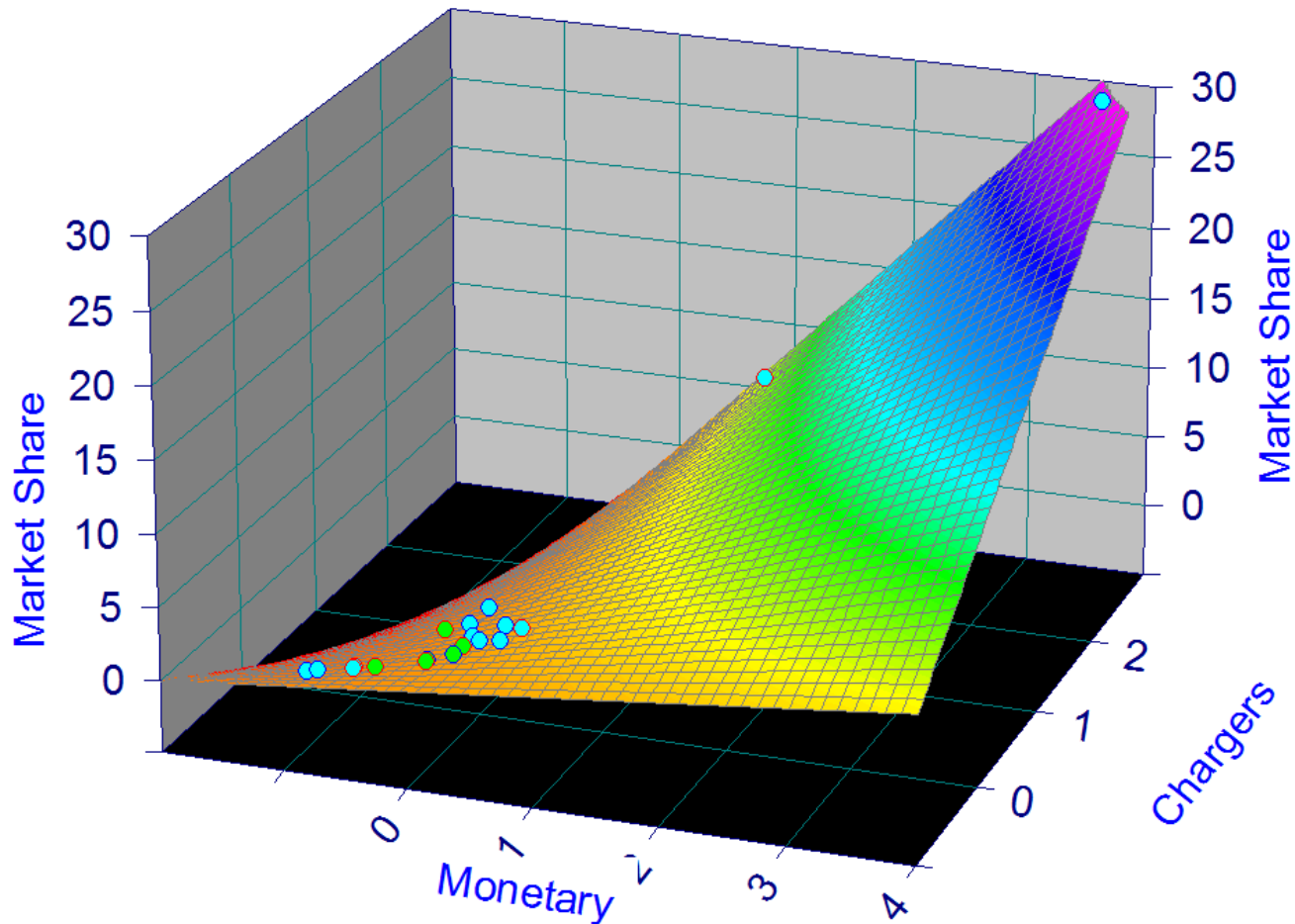
evpercent.xls : (1)Tabelle1, Monetary, Chargers, Market Share

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Thank you!