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Preliminary Analysis of the Voting Figures in Iran's 2009 Presidential Election

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Executive Summary

Working from the province by province breakdowns of the 2009 and 2005 results, released by the Iranian Ministry of Interior, and from the 2006 census as published by the official Statistical Centre of Iran, the following observations about the official data and the debates surrounding it can be made.

- In two conservative provinces, Mazandaran and Yazd, a turnout of more than 100% was recorded.
- At a provincial level, there is no correlation between the increased turnout and the swing to Ahmadinejad. This challenges the notion that Ahmadinejad's victory was due to the massive participation of a previously silent conservative majority.
- In a third of all provinces, the official results would require that Ahmadinejad took not only all former conservative voters, all former centrist voters, and all new voters, but also up to 44% of former Reformist voters, despite a decade of conflict between these two groups.
- In 2005, as in 2001 and 1997, conservative candidates, and Ahmadinejad in particular, were markedly unpopular in rural areas. That the countryside always votes conservative is a myth. The claim that this year Ahmadinejad swept the board in more rural provinces flies in the face of these trends.

1. Irregularities in Voter Turnout

Two provinces show a turnout of over 100% and four more show a turnout of over 90%. Regional variations in participation have disappeared. There is no correlation between the increase in participation, and the swing to Ahmadinejad.

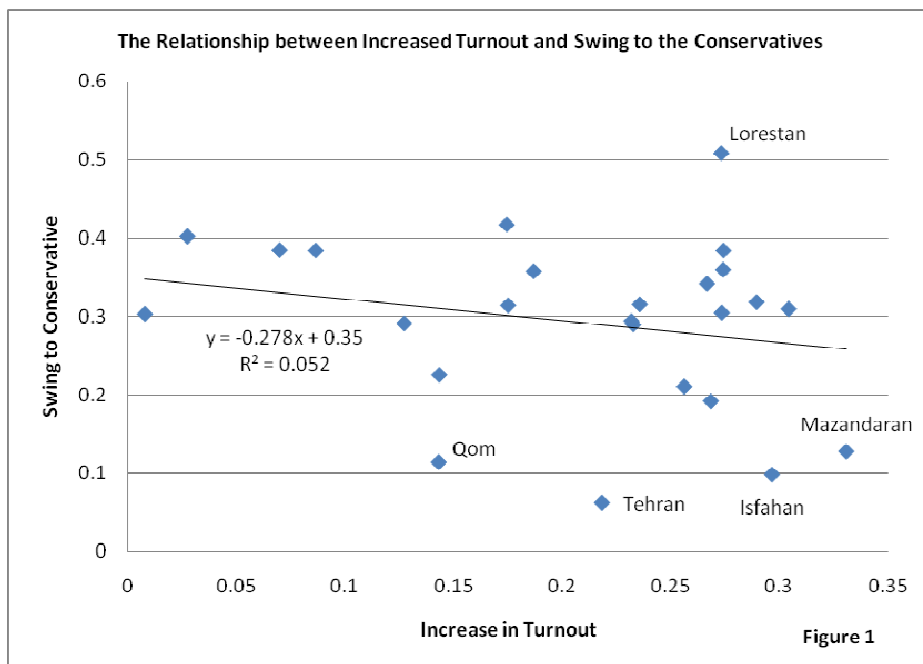
Firstly, across the board there is a massive increase in turnout, with several provinces increasing their participation rate by nearly 75%. This increase results in substantially less variation in turnout between provinces, with the standard deviation amongst provincial turnouts falling by just over 23% since 2005. The 2005 results show a substantial turnout gap, with seven provinces recording turnout below 60%, and ten above 70%. In 2009, only two were below 70% and 24 were above 80%. In fact, 21 out of 30 provinces had turnouts within 5% of 83%. The data seems to suggest that regional variations in participation have suddenly disappeared.

This makes the evident lack of any sort of correlation between the provinces that saw an increase in turnout and those that saw a swing to Ahmadinejad (Fig.1) all the more unusual. There is no significant correlation between the increase in participation for a given province and the swing to Ahmadinejad (Fig.1). This lack of correlation makes the argument that an increase in participation by a previously silent conservative majority won the election for Ahmadinejad somewhat problematic.

Furthermore, there are concerns about the numbers themselves. Two provinces, Mazandaran and Yazd, have results which indicate that more votes were cast on 12 June than there were eligible voters and that four more provinces had turnouts in the mid-nineties.

In a country where allegations of 'tombstone voting' – the practice of using the identity documents of the deceased to cast additional ballots – are both long-standing and widespread, this result is troubling but perhaps not unexpected. This problem did not start with Ahmadinejad; according to official statistics gathered by the International Institute for Democracy and Electoral Assistance in Stockholm, there were 12.9% more registered voters at the time of Mohammed Khatami's 2001 victory than there were citizens of voting age.

In conclusion, a number of aspects of the reported turnout figures are problematic. The massive increases from 2005, the collapse of regional variations, and the absence of any clear correlation between increases in turnout and increased support for any candidate on their own make the results problematic.



Source: Ministry of Interior Publications 2005 and 2009 (See appendix)

2. Where did Ahmadinejad's New Votes Come From?

According to the official Ministry of Interior voting data (see Appendix), Mahmud Ahmadinejad has increased the conservative vote by 113% compared to the 2005 election. There is little correlation in provincial level results between the increase in turnout and the swing to the President, challenging the notion that a previously silent conservative majority has come out to support him. Interestingly, in 10 out of 30 provinces, mainly former Mehdi Karrubi strongholds, the official data suggests that Ahmadinejad received not only the votes of all former non-voters and former Rafsanjani voters, but also took up to 44% of the vote from those who had previously voted Reformist.

According to the official data¹, Mahmud Ahmadinejad has received approximately 13m more votes in this election than the combined conservative vote in the 2005 Presidential election².

Assuming that Ahmadinejad retained all 11.5m Conservative votes from 2005, these additional 13m votes could have come from three sources, in descending order of likelihood:

- The approximately 10.6m citizens who did not vote in 2005, but chose to vote in this election
- The 6.2m citizens who voted for the centrist Rafsanjani in 2005
- The 10.4m citizens who voted for Reformist candidates in 2005

In order to examine in detail where Ahmadinejad's increased support came from, the table below (Fig.3) shows the composition of the 2009 vote by province, dividing it into those who voted Conservative, Rafsanjani, and Reformist in 2005, and those who did not vote at all in 2005. It assumes that 2005 voters will vote again.

The table demonstrates that in the 10 of Iran's 30 provinces highlighted red, in order for the official statistics to be correct Ahmadinejad would have needed to win over all new voters, all former Rafsanjani voters, and also up to 44% of former reformist voters.

¹ Serious complaints have been raised about both the 2005 elections and the 2009 elections. Government data is not perfectly reliable.

² In 2005 there were three Conservative candidates in the first round. Ahmadinejad can reasonably be expected to have received in 2009, all votes cast for Conservatives in 2005. Here, Ahmadinejad's 2009 performance is compared to the combined performance of all three Conservatives in 2005.

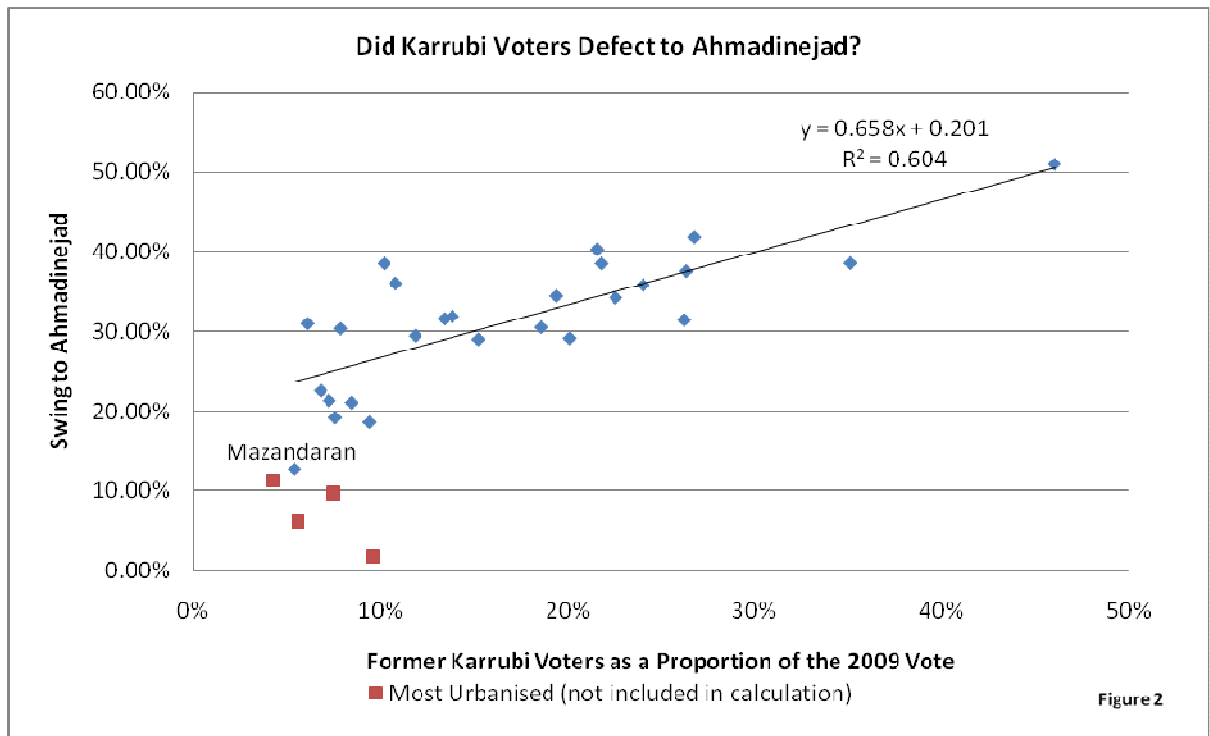
It is notable that many of these are provinces where the Reformist cleric Mehdi Karrubi polled highly in 2005, and the government's figures would appear to suggest that his former supporters have not voted tactically for the likely Reformist challenger Mir Hussein Musavi, as many had expected, but rather that they have defected to the hard-line conservative incumbent Ahmadinejad. This interpretation is to some extent supported by the relationship between the percentage of former Karrubi voters in a province, and its swing to Ahmadinejad (Fig.2).

To many Reformists, this situation is extremely unlikely. Mehdi Karrubi is a well-known reformist, of polar opposite views to Ahmadinejad on issues of political and cultural freedoms, economic management, and foreign policy. They allege fraud, and it is likely that the provinces where Karrubi's vote has collapsed will provide the bulk of the 600+ complaints which the defeated candidates are lodging against the conduct of the election.

However, Karrubi, like Ahmadinejad, is seen as a 'man of the people', and Ahmadinejad is as much a re-incarnation of the Islamic Republic's early hard left as he is a leader of its current hard-right. Ahmadinejad's supporters thus claim that rural voters voted for Ahmadinejad in 2009 for precisely the same reasons that they voted for Karrubi in 2005.

The data offers no arbitration in this dispute, although Roukema's application of statistical fraud detection techniques to the 'by district' data has turned up some anomalies with respect to the figures for Karrubi's vote,³ which may suggest that they were created by a computer. These can be followed up should the fully disaggregated 'by polling station' data be released during the ongoing dispute.

³ B Roukema, 'Benford's Law Anomalies in the 2009 Iranian Presidential Election' (as yet unpublished article, 2009).



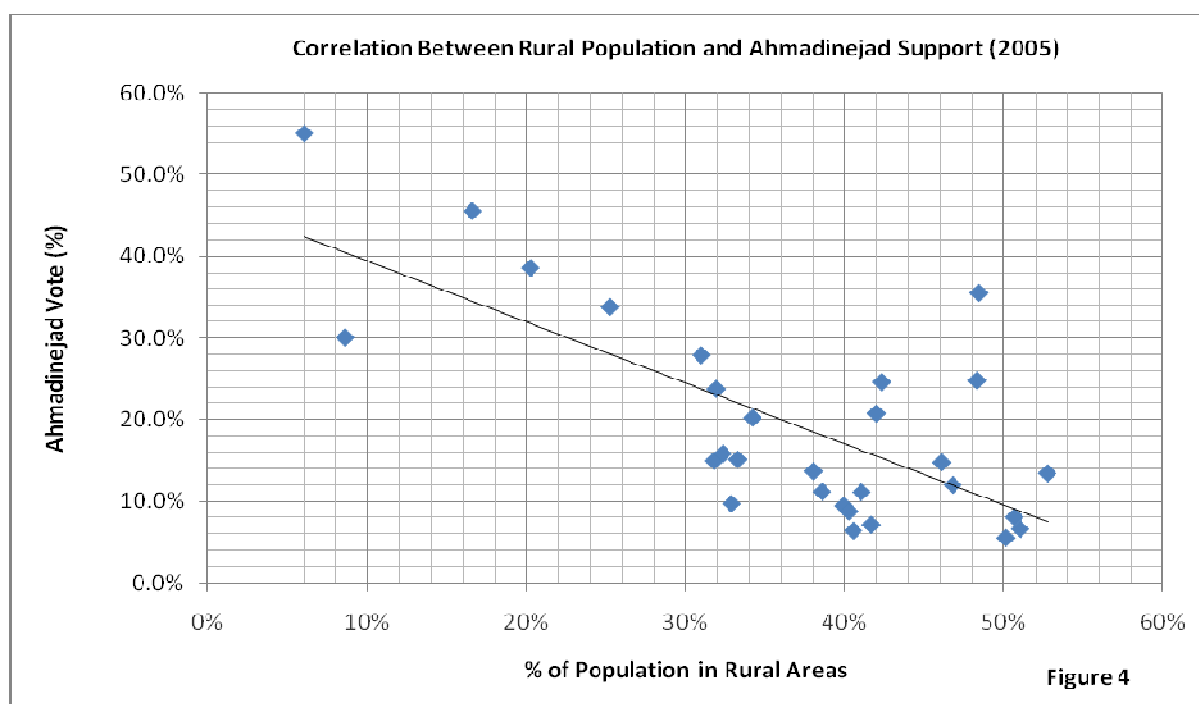
Source: Ministry of Interior Publications 2005 and 2009 (See appendix)

Potential sources of new votes for Ahmadinejad (Fig.3)

Province	Ahmadinejad Voters '09	Ahmadinejad Voters '05	Other Conservative Voters '05	Non-Voters '05	Rafsanjani Voters '05	Reformist Voters '05	Assumed Take of Former Reformist Voters
East Azerbaijan	1,131,111	198,417	150,235	684,745	268,954	690,784	
West Azerbaijan	623,946	75,319	156,724	520,896	151,525	409,798	
Ardebil	325,911	34,090	114,038	161,510	95,490	232,505	
Isfahan	1,799,255	801,635	271,861	854,867	260,858	423,098	
Ilam	199,654	32,383	47,865	20,165	40,580	168,179	34.88%
Bushehr	299,357	82,376	55,169	81,202	97,412	171,637	
Tehran	3,819,495	1,500,829	860,548	2,424,653	1,274,276	1,345,533	
Chaharmahal & Bakhtiari	359,578	90,960	87,195	126,366	59,521	128,451	
Southern Khorasan	285,984	101,638	54,759	95,657	57,244	71,939	
Razavi Khorasan	2,214,801	377,732	956,641	638,925	527,707	656,736	
Northern Khorasan	341,104	22,954	116,991	115,487	70,407	135,090	11.30%
Khuzestan	1,303,129	232,874	206,798	543,802	319,921	707,428	
Zanjan	444,480	93,309	94,234	132,237	110,698	150,062	9.33%
Semnan	295,177	98,024	65,249	90,128	69,773	56,344	
Sistan & Baluchistan	450,269	47,743	93,559	117,432	155,147	563,454	6.46%
Fars	1,758,026	242,535	334,925	738,209	403,074	786,195	5.00%
Qazvin	498,061	118,414	102,048	188,868	108,928	168,013	
Qom	422,457	256,110	36,686	125,178	104,004	67,557	
Kordestan	315,689	22,353	59,174	251,014	54,004	211,918	
Kerman	1,160,446	129,284	333,275	337,502	480,271	215,357	
Kermanshah	573,568	70,117	137,472	251,113	137,010	374,100	
Kohgilouye & Boyerahmad	253,962	34,396	72,565	53,615	56,154	148,985	24.99%
Golestan	515,211	56,776	129,856	156,256	155,498	358,715	4.69%
Gilan	998,573	149,026	221,632	465,190	215,478	420,258	
Lorestan	677,829	69,710	101,394	162,848	121,130	500,859	44.47%
Mazandaran	1,289,257	159,291	581,654	581,269	311,949	270,104	
Markezi	572,988	161,669	89,086	200,024	143,118	184,172	
Hormozegan	482,990	81,054	103,487	136,459	75,601	340,740	25.35%
Hamedan	765,723	195,030	96,988	218,400	175,997	322,938	24.56%
Yazd	337,178	175,206	76,209	150,781	77,924	123,828	
Totals	24,515,209	5,711,254	5,808,317	10,624,798	6,179,653	10,404,777	

3. Do Rural Voters Support Ahmadinejad?

Many commentators have suggested, before and after the Presidential Election, that Ahmadinejad is very popular in rural areas and that this explains his high levels of support. However, the data from the 2005 Presidential election does not support this contention. Instead, it confirms that what support Ahmadinejad did gain in 2005 was mainly from urban and suburban areas. The graphs below show the levels of support for Ahmadinejad against the rural population of the province in question (Fig.4) and Conservatives as a group (Fig.5).



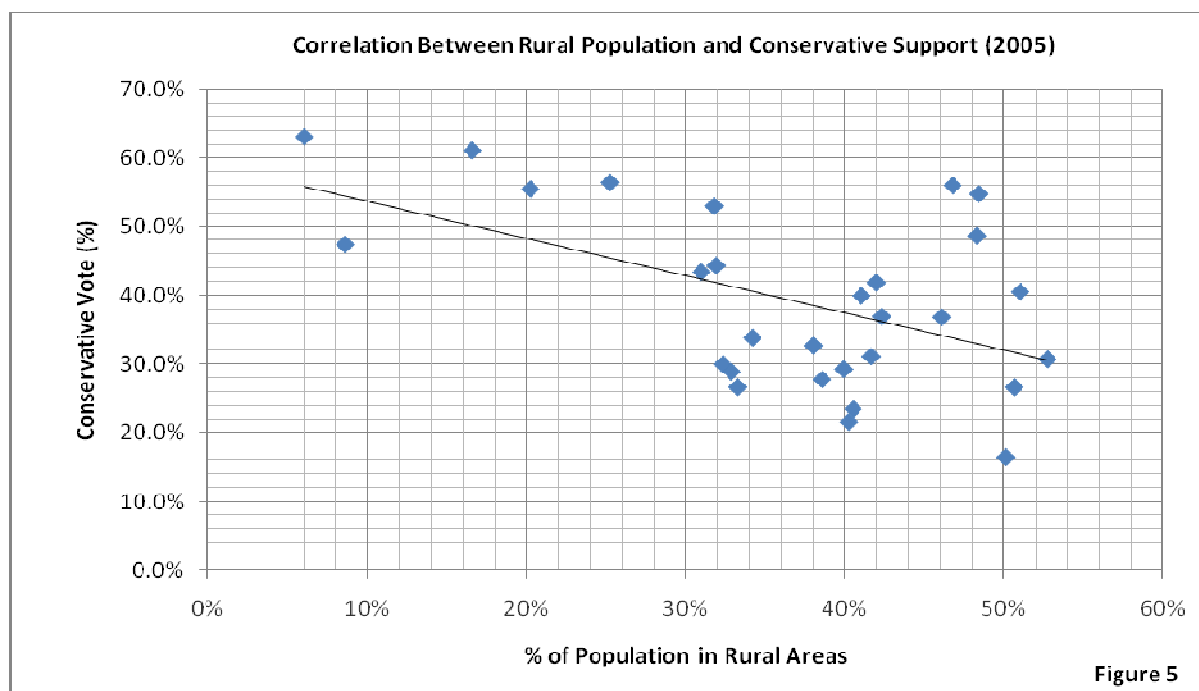


Figure 5

Source: Ministry of Interior Publications 2005 and 2009 and Iranian Census of 2006 (see appendix)

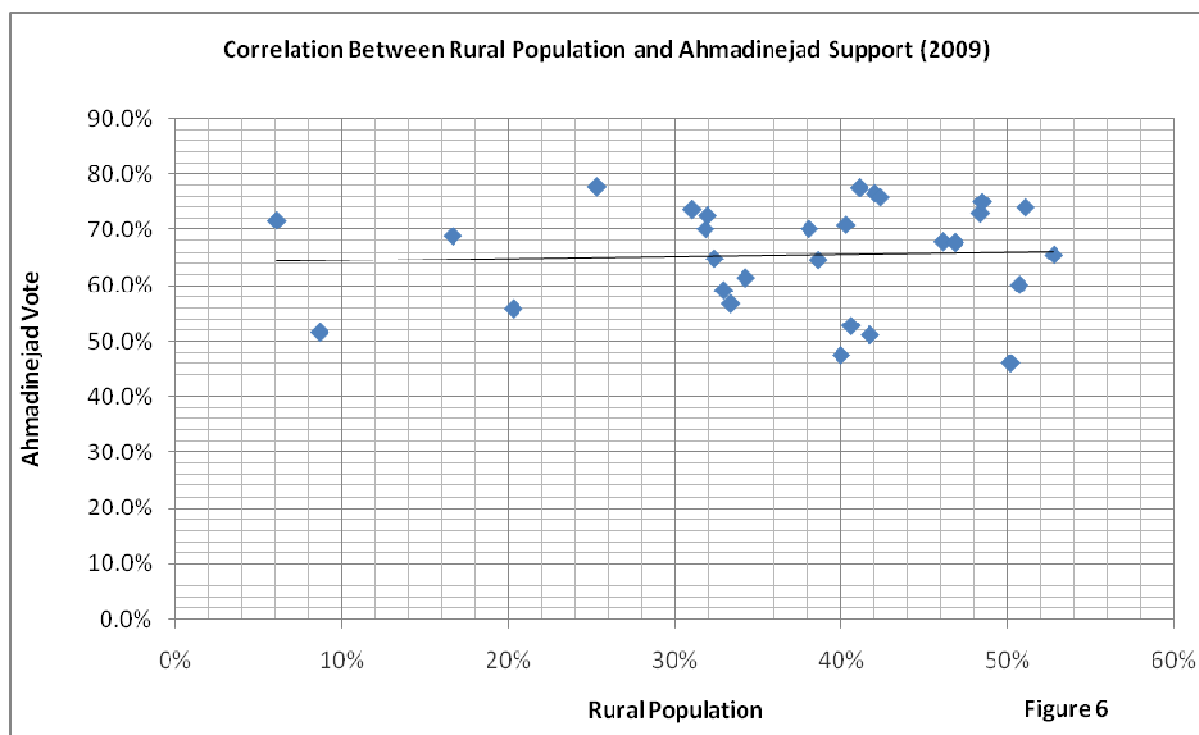
This data supports the contention of academic experts on rural Iranian politics⁴ that rural voters have not been the dedicated Ahmadinejad supporters occasionally described in western media. This is supported by the fact that much of Iran's rural population is comprised of ethnic minorities: Lors, Baluch, Kurdish, and Arab amongst others. These ethnic minorities have a history both of voting Reformist and of voting for members of their own ethnic group. For example, they were an important segment of Khatami's vote in 1997 and 2001 and voted largely for Karrubi and Mostafa Moin in 2005.

The 2009 data suggests a sudden shift in political support with precisely these rural provinces, which had not previously supported Ahmadinejad or any other conservative (Fig.5) showing substantial swings to Ahmadinejad (Fig.6). At the same time, the official data suggests that the vote for Mehdi Karrubi, who was extremely popular in these rural, ethnic minority areas in 2005, has collapsed entirely even in his home province of Lorestan, where his vote has gone from 440,247 (55.5%) in 2005 to just 44,036 (4.6%) in 2009. This is paralleled by an overall swing of 50.9% to Ahmadinejad, with official results suggesting that he has captured the support of 47.5% of those who cast their ballots for

⁴ Cf. Hooglund 'Iran's Rural Vote and Election Fraud' *Agence Global*, 17 June 2009. <http://www.agenceglobal.com/Article.asp?Id=2034>

Reformist candidates in 2005. This, more than any other result, is highly implausible, and has been the subject of much debate in Iran.

This increase in support for Ahmadinejad amongst rural and ethnic minority voters is out of step with previous trends, extremely large in scale, and central to the question of why (or indeed whether) he won in June 2009.



Source: Ministry of Interior Publications 2005 and 2009 and Iranian Census of 2006 (see appendix)

Appendix

By Province Results for the 2009 Iranian Presidential Election

Source: Iranian Ministry of Interior 2009

Available at:

<http://www.moi.ir/Portal/Home/ShowPage.aspx?Object=News&ID=e3dfc8f-9d5a-4a54-bbcd-74ce90361c62&LayoutID=b05ef124-0db1-4d33-b0b6-90f50139044b&CategoryID=832a711b-95fe-4505-8aa3-38f5e17309c9>

	Province	Ahmadinejad	Rezai	Karrubi	Musavi	Invalid	Total Votes Cast	Total Valid Votes
	East							
1	Azerbaijan	1,131,111	16,920	7,246	837,858	17205	2,010,340	1,993,135
	West							
2	Azerbaijan	623,946	12,199	21,609	656,508	20094	1,334,356	1,314,262
3	Ardebil	325,911	6,578	2,319	302,825	4372	642,005	637,633
4	Isfahan	1,799,255	51,788	14,579	746,697	25162	2,637,481	2,612,319
5	Ilam	199,654	5,221	7,471	96,826	3495	312,667	309,172
6	Bushehr	299,357	7,608	3,563	177,268	6193	493,989	487,796
7	Tehran	3,819,495	147,487	67,334	3,371,523	115701	7,521,540	7,405,839
8	Chaharmahal & Bakhtiari	359,578	22,689	4,127	106,099	2953	495,446	492,493
9	Southern Khorasan	285,984	3,962	928	90,363	1920	383,157	381,237
10	Razavi Khorasan	2,214,801	44,809	13,561	884,570	24240	3,181,981	3,157,741
11	Northern Khorasan	341,104	4,129	2,478	113,218	3072	464,001	460,929
12	Khuzestan	1,303,129	139,124	15,934	552,636	28022	2,038,845	2,010,823
13	Zanjan	444,480	7,276	2,223	126,561	5,181	585,721	580,540
14	Semnan	295,177	4,440	2,147	77,754	3790	383,308	379,518
15	Sistan & Baluchistan	450,269	6,616	12,504	507,946	5585	982,920	977,335
16	Fars	1,758,026	23,871	16,277	706,764	18359	2,523,297	2,504,938
17	Qazvin	498,061	7,978	2,690	177,542	6084	692,355	686,271
18	Qom	422,457	16,297	2,314	148,467	9505	599,040	589,535
19	Kordestan	315,689	7,140	13,862	261,772	12293	610,756	598,463
20	Kerman	1,160,446	12,016	4,977	318,250	10125	1,505,814	1,495,689

Preliminary Analysis of Voting Figures in Iran's 2009 Presidential Election

21	Kermanshah Kohgilouye &	573,568	11,258	10,798	374,188	13610	983,422	969,812
22	Boyerahmad	253962	8542	4274	98937	2311	368,026	365,715
23	Golestan	515,211	5,987	10,097	325,806	14266	871,367	857,101
24	Gilan	998,573	12,022	7,183	453,806	11674	1,483,258	1,471,584
25	Lorestan	677,829	14,920	44,036	219,156	8329	964,270	955,941
26	Mazandaran	1,289,257	19,587	10,050	585,373	15571	1,919,838	1,904,267
27	Markezi	572,988	10,057	4,675	190,349	7889	785,958	778,069
28	Hormozegan	482,990	7,237	5,126	241,988	5683	743,024	737,341
29	Hamedan	765,723	13,117	12,032	218,481	9816	1,019,169	1,009,353
30	Yazd	337,178	8,406	2,565	255,799	5908	609,856	603,948
Totals		24,515,209	659,281	328,979	13,225,330	418,408	39,147,207	38,728,799

By Province Electoral Results for 2005

Source: Ministry of Interior 2005

Available at: <http://psephos.adam-carr.net/countries/i/iran/iran20052.txt>

Province	Ahmadinejad	Karrubi	Larjani	Mehralizadeh	Moin	Qalibaf	Rafsajani	Totals
Azarbaijan-e Sharqi	198,417	121,969	28,075	378,604	190,211	122,160	268,954	1,308,390
Azarbaijan-e Gharbi	75,319	99,766	15,435	163,091	146,941	141,289	151,525	793,366
Ardabil	34,090	53,906	7,766	111,465	67,134	106,272	95,490	476,123
Esfahan	801,635	196,512	73,452	30,325	196,261	198,409	260,858	1,757,452
Ilam	32,383	108,627	6,783	3,026	56,526	41,082	40,580	289,007
Bushehr	82,376	98,148	8,207	4,942	68,547	46,962	97,412	406,594
Tehran	1,500,829	415,187	246,167	281,748	648,598	614,381	1,274,276	4,981,186
Chahar Mahal va Bakhtiari	90,960	75,044	23,127	5,051	48,356	64,068	59,521	366,127
Khorasan-e Janubi	101,638	27,705	5,716	4,958	39,276	49,043	57,244	285,580
Khorasan-e Razavi	377,732	297,967	78,976	33,488	325,281	877,665	527,707	2,518,816
Khorasan-e Shomali	22,954	89,551	16,900	8,209	37,330	100,091	70,407	345,442
Khuzestan	232,874	538,735	58,564	20,164	148,529	148,234	319,921	1,467,021
Zanjan	93,309	62,845	22,869	18,568	68,649	71,365	110,698	448,303
Semnan	98,024	25,899	28,190	3,873	26,572	37,059	69,773	289,390
Sistan va Baluchestan	47,743	77,017	24,954	7,312	479,125	68,605	155,147	859,903
Fars	242,535	546,633	61,383	22,440	217,122	273,542	403,074	1,766,729
Qazvin	118,414	81,569	24,649	18,078	68,366	77,399	108,928	497,403
Qom	256,110	25,282	10,894	14,451	27,824	25,792	104,004	464,357
Kurdestan	22,353	111,249	10,261	7,785	92,884	48,913	54,004	347,449
Kerman	129,284	152,764	221,219	9,697	52,896	112,056	480,271	1,158,187
Kermanshah	70,117	254,780	22,033	12,516	106,804	115,439	137,010	718,699
Kohgiluyeh va Buyer Ahmad	34,396	96,459	20,306	1,572	50,954	52,259	56,154	312,100

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Golestan	56,776	193,570	42,334	8,283	156,862	87,522	155,498	700,845
Gilan	149,026	203,941	50,070	33,996	182,321	171,562	215,478	1,006,394
Lorestan	69,710	440,247	31,169	6,865	53,747	70,225	121,130	793,093
Mazandaran	159,291	103,229	464,891	18,467	148,408	116,763	311,949	1,322,998
Markazi	161,669	104,522	17,258	14,058	65,592	71,828	143,118	578,045
Hormozegan	81,054	177,413	78,161	9,679	153,648	25,326	75,601	600,882
Hamadan	195,030	218,018	24,002	20,496	84,424	72,986	175,997	790,953
Yazd	175,206	58,132	9,317	5,186	60,510	66,892	77,924	453,167
Totals	5,711,254	5,056,686	1,733,128	1,278,393	4,069,698	4,075,189	6,179,653	28,104,001

Urban and Rural Populations by Province

Source: Iranian Census of 2006, Statistical Centre of Iran.

Available at:

http://www.sci.org.ir/content/userfiles/sci_en/sci_en/sel/year85/f2/CS_02_6.H
TM

Province	Urban		Rural		Unsettled		Total
	Absolute	%	Absolute	%	Absolute	%	
East Azerbaijan	2,402,539	66.67%	1,200,820	33.32%	97	0.00%	3,603,456
West Azerbaijan	1,724,954	60.03%	1,148,505	39.97%	0	0.00%	2,873,459
Ardebil	715,597	58.27%	512,195	41.70%	363	0.03%	1,228,155
Isfahan	3,798,728	83.32%	758,890	16.65%	1,638	0.04%	4,559,256
Ilam	331,231	60.69%	210,703	38.61%	3,853	0.71%	545,787
Bushehr	577,465	65.16%	303,409	34.23%	5,393	0.61%	886,267
Tehran	12,260,431	91.34%	1,161,889	8.66%	46	0.00%	13,422,366
Chaharmahal & Bakhtiari	442,298	51.56%	414,624	48.33%	988	0.12%	857,910
Southern Khorasan	326,695	51.33%	308,305	48.44%	1,420	0.22%	636,420
Razavi Khorasan	3,811,900	68.15%	1,779,980	31.82%	1,199	0.02%	5,593,079
Northern Khorasan	392,458	48.36%	414,365	51.06%	4,749	0.59%	811,572
Khuzestan	2,873,564	67.22%	1,383,946	32.37%	17,469	0.41%	4,274,979
Zanjan	559,340	57.99%	405,261	42.01%	0	0.00%	964,601
Semnan	440,559	74.70%	149,183	25.30%	0	0.00%	589,742
Sistan & Baluchistan	1,193,198	49.60%	1,206,547	50.15%	5,997	0.25%	2,405,742
Fars	2,652,947	61.17%	1,650,614	38.06%	33,317	0.77%	4,336,878
Qazvin	777,975	68.05%	365,203	31.95%	22	0.00%	1,143,200
Qom	983,094	93.92%	63,639	6.08%	4	0.00%	1,046,737
Kordestan	855,819	59.43%	584,337	40.57%	0	0.00%	1,440,156
Kerman	1,552,519	58.53%	1,089,748	41.09%	10,146	0.38%	2,652,413

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Kermanshah	1,255,319	66.79%	618,718	32.92%	5,348	0.28%	1,879,385
Kohgiluyeh & Boyerahmad	302,192	47.64%	329,849	52.00%	2,258	0.36%	634,299
Golestan	795,126	49.17%	819,584	50.68%	2,377	0.15%	1,617,087
Gilan	1,295,751	53.88%	1,109,104	46.12%	6	0.00%	2,404,861
Lorestan	1,020,150	59.43%	691,448	40.28%	4,929	0.29%	1,716,527
Mazandaran	1,554,143	53.18%	1,368,233	46.82%	56	0.00%	2,922,432
Markezi	932,073	68.98%	419,184	31.02%	0	0.00%	1,351,257
Hormozegan	661,325	47.11%	740,605	52.76%	1,744	0.12%	1,403,674
Hamedan	980,771	57.58%	721,225	42.34%	1,271	0.07%	1,703,267
Yazd	789,803	79.71%	200,988	20.29%	27	0.00%	990,818
Totals	48,259,964	68%	22,131,101	31%	104,717	0.15%	70,495,782

Official Turnout Figures for I. R. Iran Elections (Fig. 7)

Year	Type	Turnout
1980	Majlis	52%
1980	Presidential	70%
1981	Presidential	68%
1981	Presidential	79%
1982	Assembly of Experts	78%
1984	Majlis	65%
1985	Presidential	60%
1988	Majlis	59%
1989	Presidential	60%
1990	Assembly of Experts	38%
1992	Majlis	59%
1993	Presidential	52%
1996	Majlis	71%
1997	Presidential	76%
1998	Assembly of Experts	45%
1999	Municipal	60%
2000	Majlis	69%
2001	Presidential	68%
2003	Municipal	48%
2004	Majlis	60%
2005	Presidential	63%
2005	Presidential	60%
2006	Municipal	Not available
2006	Assembly of Experts	Not available
2008	Majlis	54%
2009	Presidential	84%

Changes in Voter Turnout by Province (Fig.8)

Province	Turnout 2009	Turnout 2005	Participation Swing
East Azerbaijan	82%	51%	30%
West Azerbaijan	71%	44%	27%
Ardebil	80%	54%	26%
Isfahan	88%	59%	30%
Ilam	87%	80%	7%
Bushehr	85%	72%	13%
Tehran	86%	64%	22%
Chaharmahal & Bakhtiari	88%	65%	23%
Combined Khorasans	86%	71%	15%
Khuzestan	73%	55%	17%
Zanjan	93%	65%	27%
Semnan	88%	73%	14%
Sistan & Baluchistan	75%	74%	1%
Fars	89%	61%	27%
Qazvin	92%	69%	23%
Qom	91%	77%	14%
Kordestan	65%	37%	27%
Kerman	87%	78%	9%
Kermanshah	80%	62%	18%
Golestan	82%	55%	27%
Gilan	94%	65%	29%
Lorestan	86%	58%	27%
Mazandaran	100%	67%	33%
Markezi	89%	65%	24%
Hormozegan	81%	62%	19%
Hamedan	81%	78%	3%
Yazd	100%	76%	24%