Comparison between Survey Modes in Egypt: Telephone and Face to Face Survey

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Abstract

The current study aims to investigate the differences between two methods of conducting surveys in Egypt, namely; Telephone surveys and Face to face surveys. The two surveys are compared according to Sample Representation, Survey mode, Survey Results and Data Quality. Two different weighting schemes are used for more investigation of differences to isolate the impact of survey mode on respondents' answers.

The study compares the results of two surveys about the same subject, at the same time period and the same implementing organization, one of them is via telephone while the other is via face-to-face interviewing. Methodologies used for comparing survey methods, includes: survey results, survey mode, non-response, and data quality, in addition to the Principle Component Analysis (PCA) and Multiple Regression.

The results of the study showed that respondents' characteristics were significantly different between the two surveys; and the characteristics of face to face sample are closer to population than telephone sample. Face to face respondents tended to be less educated and work in private sector, differences in gender-age distribution were not substantial. The results -about general perception towards corruption- showed that the two samples are significantly different. Using the new weighting scheme did not change the significance differences between telephone and face to face surveys. This confirms that the differences are attributed to the mode of interview, not only to variation in demographic characteristics. Data quality was assessed using "no-opinion" responses, the telephone survey got less "no-opinion" responses; this was due to high percentage of educated respondents in telephone survey.

Keywords: Compare Survey Modes, Data Quality, Face to Face Survey, Telephone Survey, Non response rate.

مقارنة طرق المسوح في مصر: المسوح الهاتفية ومسوح المقابلات الشخصية

مستخلص الدراسة

تهدف الدراسة الحالية إلى مقارنة طريقتين لإجراء المسوح في مصر ، وهما ؛ المسوح الهاتفية ومسوح المقابلات الشخصية. تتم مقارنة هاتين الطريقتين من خلال: تمثيل العينة ، تأثير الوسيلة، نتائج المسح وجودة البيانات. وتستخدم طريقتين لأوزان الترجيح لزيادة التحقق من الاختلافات وذلك لإلغاء تأثير طريقة المسح على إجابات المستجيبين.

يتم مقارنة الطريقتين باستخدام نفس الموضوع، باستخدام نفس الفترة الزمنية ونفس المنظمة المنفذة للمسحين.

تشمل المنهجيات المستخدمة لمقارنة طريقتي المسح: نتائج المسح، تأثير الوسيلة، عدم الاستجابة، وجودة البيانات. وقد استخدمت أساليب تحليل المكونات الرئيسي (PCA) والانحدار المتعدد. أظهرت نتائج الدراسة الى أن خصائص المبحوثين مختلفة بشكل ملحوظ بين طريقتي المسوح؛ وخصائص المستجيبين لعينة المقابلات الشخصية هي أقرب إلى المجتمع من الطريقة الأخرى (الهاتف). تميل خصائص المستجيبين في عينة المقابلات الشخصية الى أنهم: الأقل تعليما، والعمل في القطاع الخاص بالمقارنة بطريقة الهاتف، بينما كانت الاختلافات في التوزيع العمري بين الجنسين ليست جوهرية. وأظهرت نتائج المعرفة بالفساد الإداري الى أن الطريقتين يختلفان اختلافا معنوياً. استخدام أوزان الترجيح المعدلة لم يغير من الاختلافات بين طريقتي المسوح، مما يؤكد أن الاختلافات ترجع إلى طريقة المسح، وليس فقط لاختلاف في الخصائص الديموغرافية. وقد تم تقييم جودة البيانات باستخدام الإجابة "لا يوجد رأي"، وكانت هذه الإجابة أقل تكراراً فيما بين عينة الهاتف، وهذا يرجع إلى أن نسبة التعليم مرتفعة فيما بين المستجيبين في عينة الهاتف مقارنة بعينة المقابلات الشخصية.

الكلمات الدالة: مقارنة طرق المسوح، جودة البيانات، المسوح الهاتفية، مسوح المقابلات الشخصية ، نسبة عدم الاستجابة.

1- Introduction

Different tools are implemented to gather information about population. Survey research is defined as: "the set of techniques for collecting data on human characteristics, attitudes, thoughts, and behavior by obtaining responses from individuals to a set of prepared questions" [7].

There are different methods of conducting surveys. The most common methods of conducting surveys are: face to face interviews, sending written questionnaires through the mail (mail surveys), and asking survey questions over the telephone (telephone surveys) [8]. Recent methods used include: web surveys, email surveys, and mobile surveys. Available resources and time constraints play a very important role in selecting the suitable survey method [8].

The current study aims to discuss differences between two major methods of working surveys in Egypt, namely; face to face and telephone surveys. It depends on surveys conducted by Information and Decision Support Center (IDSC) through its "Public Opinion Poll Center" and "Field Surveys Group". Face to face and telephone surveys are compared according to: Sample Representation, Survey Mode, Survey Results, and Data Quality. Two different weighting schemes are used for more investigation of differences.

This was done through an analytical study between results of two surveys about the same subject and at the same time period, one of them is via telephone and the other is via face-to-face interviewing.

2-   Data and Methods

Two datasets are used for the analysis in this study: the Egyptian Household Observatory (EHO), and the Administrative Corruption Perception (ACP) poll.

A.   The Egyptian Household Observatory (Round One - May 2008)

The **EHO survey** was established in 2008; to measure how the Egyptian households respond to continuous changes and challenges in their lives, especially, in increasing prices of different goods and services [19]. The EHO's questionnaire was designed to cover a variety of topics. A sample size of 10,000 households was selected to represent overall Egypt. The sample was representative by governorates and by urban/rural areas inside each governorate. The following formula (called nearest to optimum) was used to obtain the sample size [20]:

$$n_i = n(\frac{\sqrt{N_i}}{\sum_r \sqrt{N_r}})$$

Where;

n_i : Sample size (no. of households in each governorate)

n : Total targeted sample (10,000)

N_i : No. of households in each governorate

The minimum sample size in any governorate was set to 250 households to get certain accuracy level. The final targeted sample size was determined using response rates in different governorates.

Weights: The resulting sample was not self-weighted and weights were adapted to ensure accurate representation at national, governorate and their urban/rural distribution equivalent to the counterpart allocation of the population [20].

B.   The Administrative Corruption Perception Poll (May 2008)

The Administrative Corruption Perception poll was conducted in Egypt via "IDSC Poll Center" for the first time in 2007, and continued annually. The second round of the poll (May,

2008) was used during the analysis [14]. Poll data was gathered by telephone interviews during May to July 2008. The target population for the study is adults (18+ years) in households owning telephones. The frame is the poll center's Home Telephones Database, about 10.5 millions of numbers, in 2008 [14].

Targeted sample size was 400 observations in each governorate (including border governorates), summing up to 10,800 observation for the whole sample. Response rates in previous polls were taken into consideration in calculating planned sample size. After gathering data, weights were given to the sample to be identical to population geographic distribution: governorate, and urban/ rural [14].

> ### Selection of variables

Common questions were selected from both surveys; ACP and EHO to make surveys comparisons. There are twelve questions related to four dimensions of corruption, namely;

1. Accepting or demanding bribe, gifts, or gratuities   2. Courtesy of relatives
3. Public servant who exploits public funds
4. Theft of public funds

For each of these dimensions, *three questions* were asked:

A.   Does the dimension exist?   B. Is that dimension widespread?
C. Was the respondent witnessed or exposed to any form of that dimension?

In addition, there are three general questions about corruption. Questions have the same wording and were asked in the same order in both surveys. Additionally, 10 questions about household possessions were asked in both surveys. Finally, seven demographic questions were also included.

> ### Methods

Two Proportions, T, and Chi² Tests were used to measure the statistical significance of differences between the telephone and face to face samples.

Regression Analysis is used for assessing Data Quality. The measure used is called Respondent's Satisficing. Satisficing is defined as the respondent inability of giving the right and accurate answers, which is likely to be different between survey methods [17].

Factor Analysis is adopted in formulating an index for households' standard of living, to be used in comparing socio-economic levels between telephone and face to face surveys.

DHS Wealth Index: Egypt Demographic and Health Survey (EDHS) 2008 report uses an indicator called "wealth index"; which is considered a good proxy for households' standard of living [10]. Cut points of DHS-Egypt 2008 will be used to differentiate between different socio-economic levels of households in both telephone and face to face samples.

> ### Weighting Schemes

Two weighting schemes were used throughout the analysis in this study. The first scheme is the normal weights of the data files; which are based on the distribution of households on different governorates and their urban / rural areas.

Additionally, a new modified weighting scheme was used. The new scheme is used to get the same picture of characteristics for both telephone and face to face samples. The purpose of using such weighting scheme is to isolate the impact of survey mode (face to face or telephone) on respondents' answers. This is done through neutralizing other factors (demographic characteristics) through making both samples looks like population they were drawn from.

To do so, the joint population distribution of three main characteristics: gender, age, and education were obtained (from the final results of the 2006 Census), and weights were calculated for each sample separately to obtain both samples' distribution identical to the population

distribution of the three characteristics. The following formula was used to estimate the weights for cases in a certain governorate:

$$\pi_{ijk} = \frac{N_{ijk}/N}{n_{ijk}/n}$$

Where:

i=1,2 (for gender categories), j=1,2,…5 (for 5 age categories), k= 1,2,…7 (for 7 education levels).

π_{ijk}: is the weight for the ijk subsample,

N_{ijk}: is the population size equivalent to such criteria in a given governorate,

n_{ijk}: is the sample size in the ijk sub-sample,

N : is the population size (people aged 20+, according to the 2006 Census).

n : is the sample size (9773 for face to face sample, 13824 for telephone sample).

New weights were used in conducting comparisons of questions about administrative corruption and its prevalence, and about household possession of appliances. Results of such comparison reflect differences between survey modes (telephone versus face to face) rather than differences due to respondents' characteristics.

3. Results

The sample design in both surveys is not identical, where the main differences[1] are:

● The targeted population of face to face survey is the Egyptian households, while the targeted population of telephone survey is individuals aged 18 years and more.

● Face to face survey sample was designed as a multistage cluster sample, while the telephone survey was designed as a stratified sample.

● Weights in face to face survey are pre-calculated, while they are post-calculated in telephone survey.

A chief contribution on conducting comparison between the underlying two datasets was introduced by Aly, H. M., [1] in 2010. The objective of such study was to examine how the respondents' answers were influenced by the method of collecting data. This study compares telephone and face to face surveys with sample representation, which conducted through three types of comparisons: the whole face to face sample against the telephone sample, splitting the face to face sample into two groups (with and without home telephones) and then comparing the two groups, and finally face to face households owning home telephones against telephone sample. Comparisons with the population data were conducted where available.

3.1 Comparison of Sample Representativeness in Telephone and Face-to-Face Surveys

Sample representation is expressed in seven demographic variables, six represents the characteristics of respondents (aged 18+), in addition to the monthly household income. Chi-square Test is used for testing differences across these variables in both samples. Variable categories are tested using confidence intervals of proportions, taking into account the Design Effect.

➢ *Comparison between telephone and face to face samples:*

Comparisons showed the significant differences (using Chi² Test) between respondents in "face to face" survey and respondents in "telephone" survey through different demographic variables, as shown in Table (1).

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[1] More information about sample frames and response rates is presented in sub-section 3.4.1.

Table 1: Demographic Differences between Respondents in Face to Face Survey and Telephone Survey

Variables / Categories	Face to face Survey		Telephone Survey		Population (%)	Sig.
	%	Confidence Interval	%	Confidence Interval		
Gender						
Male	40.2	38.8 41.7	45.0	43.6 46.5	50.9	*
Female	59.8	58.3 61.2	55.0	53.5 56.4	49.1	*
Age						
20 - 29 Years	19.3	18.2 20.6	29.4	28.0 30.8	34.6	*
30 - 39 Years	23.0	22.1 24.0	22.2	21.0 23.3	22.8	-
40 - 49 Years	22.4	21.4 23.5	20.0	19.0 21.0	18.9	*
50 - 59 Years	18.9	17.9 19.9	14.5	13.6 15.5	12.9	*
60 + Years	16.4	15.2 17.7	14.0	13.0 15.1	10.8	*
Education						
No Education	39.9	37.8 42.0	21.9	20.7 23.0	38.2	*
Primary / Preparatory	19.7	18.6 20.8	23.5	22.2 24.8	16.1	*
Secondary	27.1	25.7 28.6	38.8	37.4 40.1	32.5	*
University or Higher	13.4	11.6 15.3	15.9	15.1 16.8	13.3	-
Work Status						
Work	37.0	35.7 38.4	39.5	38.0 40.9	48.7	-
Does not Work	63.0	61.6 64.3	60.6	59.1 62.0	51.3	-
Work Sector						
Government	39.1	36.8 41.5	35.5	33.5 37.6	24.8	-
Public sector	3.1	2.4 4.0	8.9	7.5 10.6	2.4	*
Private sector	57.8	55.4 60.3	55.6	53.2 57.9	72.8	-
Not-working						
Retired	20.1	18.5 21.8	12.0	10.8 13.3	6.4	*
Unemployed	2.0	1.6 2.4	9.2	8.2 10.4	8.1	*
Student	1.6	1.2 2.1	9.3	8.2 10.5	6.5	*
Housewife	75.5	73.6 77.3	69.5	67.8 71.1	75.8	*
Other	0.8	0.6 1.1	-	- -	3.3	-
Household Monthly Income (L.E.)						
Less than 300	9.2	8.3 10.1	18.0	16.9 19.2		*
300 -	21.3	20.1 22.6	24.9	23.6 26.2		*
500 -	27.0	25.7 28.2	21.4	20.1 22.7		*
700 -	16.3	15.4 17.3	16.4	15.2 17.6		-
1000 -	15.3	14.3 16.5	10.9	9.9 11.9		*
1500 L.E or more	10.9	9.45 12.5	8.5	7.6 9.49		-

    * : Significant differences   **- : Non-significant differences**

Face to face respondents tends to be: male, older, less educated, work in private (rather than government) sector. Generally, characteristics of face to face sample were closer to population than telephone sample.

> *Comparison between respondents' characteristics in telephone and face to face survey (owing phones):*

In this part, a comparison between respondents in face to face survey who own telephone and telephone survey is implemented. The comparison explores differences between the two similar (at least theoretically) samples, each expresses households owning telephones in the Egyptian population. Significant differences between respondents of the two samples exist, except for work status. Considering the design effects, it was found that there are no real differences concerning gender and some age and income classes.

These results indicate that - even when starting with equivalent frames (households with telephone) - telephone and face to face surveys get respondents of different characteristics.

Table 2: Comparing Respondents' Characteristics in Telephone Survey and Face to Face Survey (Owning Phones)

Variables	CHI²	P	(Sig)	Variables	CHI²	P	(Sig)
Gender	11.78	0.000	***	Work Sector	162.72	0.000	***
Age	790.57	0.000	***	Not-working	582.22	0.000	***
Education	134.36	0.000	***	Household Monthly Income	1203.1	0.000	***
Work Status	0.70	0.402	+				

*** : p< 0.001   +: p> 0.05

3.2 Comparison between the Results of Telephone and Face to Face Survey <u>without using Weighting Scheme</u>

❖   **Comparing Results of Telephone and Face to Face Surveys**

In this subsection, questions about different parts of the questionnaire will be compared. This subsection includes three main areas of interest, namely; the prevalence of administrative corruption, different dimensions of corruption and household possession of some appliances.

> *Administrative Corruption: General Perception*

Perceptions towards corruption are evaluated through three dimensions, score of corruption (out of ten), government seriousness in fighting corruption, and impact of government efforts in fighting corruption in citizens' confidence in government.

Results show clear differences between telephone and face to face samples concerning the three questions. As shown in Table (3), differences between telephone and face to face respondents -in general perceptions towards corruption- exist and are statistically significant. Face to face respondents reported a higher score of corruption prevalence, while the telephone respondents were more favorable for government role in fighting corruption.

Table 3: General Perception towards Administrative Corruption in Telephone and Face to Face Surveys

Variables / Categories	Face to face Sample			Telephone Sample			Sig.
	%	Confidence Interval		%	Confidence Interval		
Degree of Corruption Prevalence (Score Out of Ten)							
1	4.8	4.3	5.4	5.7	5.0	6.5	-
2-3	4.5	4.1	5.1	7.9	7.1	8.8	*
4-5	23.8	22.7	25.0	20.8	19.6	22.1	*
6-7	18.0	17.0	19.0	21.9	20.6	23.2	*
8 -10	48.9	47.5	50.3	43.7	42.1	45.3	*
Mean of Corruption Score	7.01	6.93	7.08	6.67	6.58	6.76	*
Is the Government Serious in Fighting Corruption?							
Yes	44.5	43.2	45.7	54.8	53.3	56.3	*
No	43.5	42.2	44.8	33.1	31.7	34.6	*
Do not know	12.0	11.2	12.9	12.1	11.2	13.1	-
When the Government Take Actions to Fight Corruption, Does Your Confidence in Government Increase?							
Yes	76.5	75.3	77.6	91.8	90.9	92.6	*
No	9.5	8.8	10.5	4.1	3.6	4.8	*
Do not know	14.0	13.1	14.8	4.1	3.5	4.7	*

* : Significant differences   - : Non-significant differences

➢   *Administrative Corruption: Different Dimensions*

For each form of corruption, there are questions about: existence, prevalence, and personal experience.

a.   **Bribe, Gifts, and Gratuities**

The results show significant differences between telephone and face to face surveys in all aspects of that dimension (existence of dimension, its prevalence, and personal experience). About 91% of respondents in the telephone survey reported that the dimension exists (comparing to 85% in face to face survey), but respondents from face to face survey reported much higher degree of agreement of the prevalence of bribes (99% versus 81% for telephone survey), as shown in Table (4).

b.   **Public Servant Exploits Public Funds**

Similar to first dimension, higher percentage of respondents in telephone survey (79%) reported the existence of this dimension. Respondents from face to face survey reported much higher degree of agreement of the prevalence of the dimension (99%). In the course of personal experience, a higher percentage of face to face respondents reported that they had an experience of exploiting public funds. However, a considerable percentage of respondents in face to face survey did not remember whether they had such experience.

c.   **Courtesy of Relatives**

Results show significant differences between the two survey modes. But there are some differences concerning details; as nearly the same percentage reported the existence of "Courtesy of Relatives", fairly a higher percentage of telephone survey reported non-existence, i.e., the significance differences between modes is not referred to percentage of agreement, but to the distribution of the rest of responses between "non-agreement" and "do not know". Concerning the prevalence and personal experience of "courtesy of relatives", respondents from face to face survey reported higher percentage of agreement on both.

d.   Theft of Public Funds

Finally, concerning the fourth dimension of corruption (theft of public funds), there are significant differences between telephone sample and face to face sample. The difference between two the samples regarding agreement on existence of this dimension is not major, but there is a clear difference between them concerning the "rejection" and "do not know" answers. Similar to other dimensions, much higher percentage (more than double) of agreement on prevalence and personal experience were reported in face to face survey comparing to telephone survey.

Table 4: Perceptions towards Corruption Dimensions

Variables / Categories	Face to face Sample			Telephone Sample			Sig.
	%	Confidence Interval		%	Confidence Interval		
Bribe, Gifts, and Gratuities							
Exist in Our Society	84.7	83.6	85.7	90.9	90.0	91.6	*
Widespread	99.4	99.2	99.6	80.5	79.1	81.7	*
Ever Been Exposed to	59.2	57.8	60.6	37.4	35.9	39.0	*
Public Servant exploits Public Funds							
Exist in Our Society	67.8	66.4	69.1	78.9	77.6	80.1	*
Widespread	99.1	98.9	99.3	71.3	69.8	72.8	*
Ever Been Exposed to	46.6	45.0	48.3	35.8	34.2	37.3	*
Courtesy of Relatives							
Exist in Our Society	86.6	85.6	87.6	86.6	85.5	87.7	-
Widespread	99.5	99.2	99.6	80.5	79.2	81.7	*
Ever Been Exposed to	66.5	65.2	67.8	35.3	33.8	36.8	*
Theft of public Funds							
Exist in Our Society	57.8	56.3	59.3	55.7	54.2	57.2	-
Widespread	97.8	97.3	98.2	56.1	54.1	58.0	*
Ever Been Exposed to	32.8	31.1	34.6	9.4	8.4	10.6	*

* : Significant differences   - : Non-significant differences

> ➤   *Household Possessions and standard of living*

Ownership of assets is used to express wealth of households; it can be a proxy for long-term standard of living of the household [18]. Regarding results of telephone and face to face surveys in Egypt, it is clear that households from telephone survey are generally wealthier. The highest differences between the two surveys were observed regarding households' ownership of mobile telephone, water heater and satellite dish. Ownership of refrigerator and automatic washing machine is clearly higher in telephone survey (the differences are 10% and 7% respectively). Other appliances had fewer differences between the two surveys as shown in Table 5.

To do a Comparison with the population, the two samples were compared to two sources of data: the 2006 Census and EDHS 2008. Conducting the comparison with the two data sources indicate that face to face sample is closer to population distribution of household possessions.

Table 5: Household Possessions of Some Assets in Telephone and Face-to-face Surveys

Variables	Face to Face (%)	Telephone (%)	2006 Census (%)	EDHS 2008 (%)	(Face to Face – Telephone) (%)	Z (Sig.)
Refrigerator	83.1	92.6	90.2	91.2	-9.5	-26.19 (**)
Mobile	50.8	71.7	25.8	40.5	-20.9	-31.95 (**)
Water Heater	36.3	47.7	37.2	40.2	-11.4	-29.72 (**)
Automatic Washing Machine	19.4	26.8	17.1	21.9	-7.4	-23.12 (**)
Satellite Dish	48.3	36.9	20.6	46.8	11.4	10.66 (**)
Video	5.8	9.0	8.8	7.7	-3.2	-14.58 (**)
Computer	15.0	18.9	8.0	13.7	-3.9	-15.87 (**)
Car	6.9	8.6	5.6	7.7	-1.7	-11.19 (**)
Deep Freezer	6.0	4.7	3.7	3.7	1.3	-2.71 (**)
Air Condition	5.7	4.1	4.1	4.2	1.6	5.96 (**)

**: $p < 0.01$

Principal Component Analysis is conducted to formulate an index for household standard of living. The above mentioned ten household's possessions were used in the analysis. Correlation matrices showed a very high degree of correlations between variables in both samples (most at 0.001 significance level). Additionally, most factor loadings were high, which confirms the validity of PCA in the current study.

The resulting factor was divided - after it was normalized - into 5 economic statuses (from poorest to richest) using the cut points of EDHS 2008 and the results are shown in Table 6. Generally, the two samples appear wealthy comparing to DHS 2008 sample. There are significant differences between telephone and face to face samples, and it was clear that telephone sample comprises a higher percentage of more wealthy people. About 47% of telephone sample lied in richest category of economic status versus 34% of face to face sample.

Table 6: Distribution of Economic Status in Telephone and Face to Face Surveys

Economic Status	Face to Face (%)	Telephone (%)	EDHS 2008 (%)	Chi² (Sig.)
Poorest	19.8	14.7	20	
Poorer	1.4	3.2	20	
Moderate	9.6	6.7	20	519.60 (*)
Richer	35.1	28.6	20	
Richest	34.1	46.8	20	
Total	100	100	100	

*: $p < 0.001$

3.3 Comparison between Telephone and Face to Face Survey using Modified Weighting Scheme

In this section, results of comparing telephone and face to face surveys - using the modified weights - are introduced. The purpose of using such weighting scheme is to isolate the impact of survey method on respondents' answers, through neutralizing demographic factors.

The new weights make the two samples' sex-age-education distribution identical and equivalent to population distribution.

➢ *Administrative Corruption: General Perception*

After applying the new weights, results were not so far from the old ones; those were extracted using weights based on geographic distribution. Clear and significant differences were observed between telephone and face to face samples concerning the three dimensions. Respondents in face to face sample gave a higher mean score of corruption prevalence.

Respondents from telephone sample had a higher percentage of agreement on both: government seriousness in fighting corruption, and good impact for government effort in fighting corruption. All questions' categories gave significant differences and results were very similar to those obtained using normal weights.

Table 7: General Perception towards Administrative Corruption in Telephone and Face to Face Surveys (Modified Weights)

Variables / Categories	Face to face Sample			Telephone Sample			Sig.
	%	Confidence Interval		%	Confidence Interval		
Degree of Corruption Prevalence (Score Out of Ten)							
1	4.0	3.5	4.6	6.6	5.3	8.3	*
2-3	4.4	3.9	5.0	9.6	8.0	11.6	*
4-5	22.4	21.2	23.7	22.0	20.3	23.8	-
6-7	19.0	17.8	20.2	20.1	19.0	21.4	-
8-10	50.2	48.6	51.9	41.7	39.6	43.7	*
Mean of Corruption Score	7.13	7.04	7.22	6.49	6.35	6.63	*
Is the Government Serious in Fighting Corruption?							
Yes	44.6	43.2	46.1	55.2	53.2	57.2	*
No	44.4	42.8	45.9	30.7	29.0	32.5	*
Do not know	11.0	10.2	11.9	14.1	12.4	16.0	*
When the Government Take Actions to Fight Corruption, Does Your Confidence in Government Increase?							
Yes	78.2	77.1	79.4	90.2	88.3	91.8	*
No	9.3	8.4	10.3	4.3	3.4	5.4	*
Do not know	12.5	11.6	13.4	5.6	4.2	7.3	*

* : Significant differences   - : Non-significant differences

➢ *Administrative Corruption: Different Dimensions*

a. **Bribe, Gifts, and Gratuities**

Results for comparing first corruption dimension (bribes, gifts, and gratuities) show significant differences between telephone and face to face surveys. Concerning the agreement on existence of bribes, difference between two the samples is about 2%, i.e. new weights make differences smaller. Results for prevalence and personal experience of bribes were very similar to original weights, as clearly higher percentages of face to face survey respondents were mentioned. Significant differences were found between all questions' categories.

b. **Public Servant Exploits Public Funds**

Modified weights gave smaller difference regarding existence of that dimension, keeping higher agreement degree for telephone survey. Regarding the prevalence of "public funds exploiting", results were very close to results of normal weights, with higher percentage of

agreement in face to face survey. Results of personal experience show nearly the same amount of agreement in both samples.

c.   Courtesy of Relatives

Results show significant differences between telephone and face to face surveys. While difference in existence (using normal weights) was attributed to the distribution between "non-agreement" and "do not know", new weights resulted in a clear difference in agreement. Both prevalence and experience of "courtesy of relatives" have higher percentage of agreement in face to face survey, similar to previous dimensions, and as in normal weights.

d.   Theft of Public Funds

The difference between the two surveys regarding agreement on existence of this dimension was clearer than that of normal weights. Concerning the prevalence and the personal experience of "theft of public funds", similar results were obtained as normal weights, where almost double percentage of agreement was reported in the face to face survey comparing to the telephone survey.

Table 8: Perceptions towards Corruption Dimensions: (Modified Weights)

Variables / Categories	Face to face Sample			Telephone Sample			Sig.
	%	Confidence Interval		%	Confidence Interval		
Bribe, Gifts, and Gratuities							
Exist in Our Society	85.9	84.7	86.9	88.0	86.3	89.6	-
Widespread	99.5	99.3	99.6	76.1	74.0	78.1	*
Ever Been Exposed to	60.8	59.0	62.5	34.6	32.7	36.5	*
Public Servant exploits Public Funds							
Exist in Our Society	68.2	66.6	69.7	75.7	73.6	77.6	*
Widespread	98.4	98.0	98.8	70.2	68.0	72.3	*
Ever Been Exposed to	49.3	47.4	51.1	38.7	36.7	40.7	*
Courtesy of Relatives							
Exist in Our Society	87.9	86.8	89.0	83.3	81.2	85.1	*
Widespread	99.5	99.3	99.7	78.3	76.5	80.1	*
Ever Been Exposed to	67.5	66.0	69.1	35.8	33.9	37.8	*
Theft of public Funds							
Exist in Our Society	57.0	55.4	58.6	53.2	51.2	55.1	*
Widespread	97.7	97.0	98.2	55.5	53.0	58.0	*
Ever Been Exposed to	35.1	33.2	37.1	10.1	8.9	11.3	*

*: p < 0.001

Accordingly, using modified weighting scheme did not change significance of differences between telephone and face to face surveys. Although differences between the two samples became smaller in most cases, no changes in direction were reported. This means that differences between the two samples are real and attributed not only to variation in demographic characteristics but to the mode of interview.

➢   *Household Possessions and standard of living*

Changing weighting scheme did not change the pattern of assets ownership in telephone survey and face to face survey, where telephone survey households are still appearing wealthier. However, it is clear that differences became obviously smaller and the significant differences were observed between the two samples in seven out of ten appliances.

Again, conducting comparison with other data sources (Census and DHS) indicates that face to face sample is closer to population characteristics of household possessions.

Table 9: Household Possessions of Some Assets in Telephone and Face-to-face Surveys (Modified Weights)

Variables / Categories	Face to Face (%)	Telephone (%)	2006 Census (%)	EDHS 2008 (%)	(Face to Face – Telephone) (%)	Z (Sig.)
			Do You or Your Family Have....?			
Refrigerator	83.4	90.1	90.2	91.2	-6.7	-14.81 (**)
Mobile	52.8	65.9	25.8	40.5	-13.1	-19.84 (**)
Water Heater	37.4	45.4	37.2	40.2	-8.0	-12.1 (**)
Auto. Washing Machine	20.7	26.0	17.1	21.9	-5.3	-9.32 (**)
Satellite Dish	50.2	41.8	20.6	46.8	8.4	12.60 (**)
Video	5.9	8.7	8.8	7.7	-2.8	-7.80 (**)
Computer	15.5	16.3	8.0	13.7	-0.8	-1.60 (+)
Car	7.5	8.0	5.6	7.7	-0.5	-1.55 (+)
Deep Freezer	5.5	5.2	3.7	3.7	0.3	1.26 (+)
Air Condition	7.1	4.2	4.1	4.2	2.9	9.43 (**)

**: $p < 0.01$ + : $p < 0.10$

Additionally, differences between categories of standard of living for telephone and face to face samples are more obvious using modified weights. This confirms that the two samples are drawn from two dissimilar sampling frames.

3.4 Comparison of Data Quality between Telephone and Face to Face Surveys

Telephone and face to face surveys are compared in the matter of their data quality. Selection of methods applied in the current study depends on how these methods match with the available data. Sample quality and respondents' dedicated effort to give accurate answers (or what is called satisficing) are used in this study.

3.4.1 Comparing Sample Quality

Samples of telephone and face to face surveys are not expected to be similar as their populations are not. Respondent agreement to participate in an interview depends, within other factors, on survey mode [15]. So it is highly probable to have different samples in telephone and face to face surveys.

➤ **Sampling Frame**

The samples are supposed to represent the population of the country, i.e. all households in different governorates. For the face to face sample, the sampling frame is the extended frame of the 2006 Post-Enumeration Survey (PES), which depends on the 2005 EDHS master sample. This sample was selected on a multi-stages basis [25], and it is considered to express the entire population of Egypt, excluding frontier governorates.

On the other hand, the telephone survey sample frame is the "Home Telephone Database". By July 2008, the database has contained 10.5 million numbers. Statistics of CAPMAS estimate the total number of Egyptian households by 18 million; this means that the telephone database cover only about 58% of the entire population.

The above comparison indicates that face to face sample's frame is much closer to population coverage than the telephone sample's frame.

> ### *Response Rate*

Response rate was higher in face to face survey comparing to telephone survey. In the corruption telephone poll, response rate reached 87%. In face to face survey, response rate reached 94.6%. This trend goes with the previous experiences in different studies.

3.4.2 Satisficing (Quality of Respondents Answers)

Satisficing (or respondent inability of giving the right and accurate answers) is affected by: respondent ability, respondent motivation, and task difficulty [15]. Respondent motivation and task difficulty are very likely to be different between survey's modes. Previous studies showed that respondents in telephone surveys implied more satisficing than in face to face surveys [17].

The "no-opinion response" is used as a measure of satisficing. The more respondents take "no-opinion" option, the more they satisfice. Regression model was used to test this hypothesis. The dependent variable of the model is the variable express "no-opinion" response for each respondent. To calculate this variable, survey questionnaires were examined and it was found that fifteen questions have "no-opinion" or "do not know" as an explicit answer. For each respondent, percentages of selecting "no-opinion" responses (in the fifteen questions) were summed in a new variable that ranges between 0 and 15, depending on questions answered "no opinion".

The "no-opinion" new variable was regressed on survey mode (a dichotomy variable coded 0 for face to face mode, 1 for telephone mode). Demographic variables are considered as controlling variables [24] [9]. Three regression models were conducted: one model for the total sample and two models were conducted after splitting the total sample according to respondent education level. The results show that the three models were highly significant.

It is clear that the "no-opinion" mean score in the face to face survey is higher than that of the telephone survey. It is very obvious that "no-opinion" responses increase considerably for low education respondents.

All demographic variables and categories, except work status, were significant in the regression model. Respondents who are: female, older, less educated, not working, and getting less income gave more "no-opinion" answers. This is natural and goes with the literature.

Testing regression coefficients of the variable (survey mode) before and after adding demographic variables shows valuable change, amounting to (-.029) in the model of one independent variable and (-.019) in the extensive model. Accordingly, respondent's characteristics have confounding effects when measuring impact of survey mode on percentage of "no-opinion" responses.

Table 10: Regression Models Predicting Satisficing (All sample Model)

Variables	Unstandardized Coefficients		Std. Coeff.	t	Sig
	B	Std. Error			
Variables in the model					
(Constant)	.120	.006		21.03	0.000
Sample	-.019	.002	-.055	-7.68	0.000
Gender: male	.016	.003	.046	5.53	0.000
Age group: 18 -	-.035	.004	-.084	-8.28	0.000
Age group: 30 -	-.031	.004	-.079	-7.59	0.000
Age group: 40 -	-.033	.004	-.081	-7.93	0.000
Age group: 50 -	-.012	.004	-.026	-2.84	0.004
Education level: Illiterate	.087	.004	.225	22.43	0.000
Education level: Primary and R/W	.041	.004	.090	10.49	0.000
Education level: Secondary	.015	.003	.041	4.71	0.000
Income: 300 - less than 500 L.E.	-.031	.003	-.071	-8.80	0.000
Income: 700 - less than 700 L.E.	-.037	.003	-.090	-10.69	0.000
Income: 700 - less than 1000 L.E.	-.052	.004	-.110	-13.56	0.000
Income: 1000 - less than 1500 L.E.	-.060	.004	-.117	-14.50	0.000
Income: 1500+ L.E.	-.065	.005	-.114	-14.10	0.000
Descriptive for dependent variable (average score of no-opinion responses):					

Face to face sample	Mean	Std. deviation	Telephone sample	Mean	Std. deviation
	0.11	0.202		0.08	0.145

Previous studies present the strong relationship between satisficing and level of education. To investigate this relationship, the total sample is split into low education and high education according to the education attainment (secondary school or higher representing the high education level). The divided sample showed that lower educated people gave "no-opinion" responses greatly much more than (double in fact) those who are highly educated. The effect of the survey mode in less-educated respondents was nearly double the effect in high-educated. The relationship between education and satisficing is very obvious.

Table 11: Regression Models Predicting Satisficing (Low Education Model)

Variables	Unstandardized Coefficients		Std. Coeff.	t	Sig
	B	Std. Error			
Variables in the model					
(Constant)	.202	.009		23.36	0.000
Sample	-.032	.005	-.072	-6.41	0.000
Gender: male	.052	.007	.108	7.02	0.000
Age group: 18 -	-.066	.008	-.099	-7.97	0.000
Age group: 30 -	-.057	.007	-.103	-7.77	0.000
Age group: 40 -	-.054	.007	-.106	-7.74	0.000
Age group: 50 -	-.017	.007	-.033	-2.43	0.015
Income: 300 - less than 500 L.E.	-.046	.007	-.089	-7.03	0.000
Income: 700 - less than 700 L.E.	-.056	.007	-.109	-8.35	0.000
Income: 700 - less than 1000 L.E.	-.089	.008	-.136	-11.16	0.000
Income: 1000 - less than 1500 L.E.	-.103	.009	-.132	-11.24	0.000
Income: 1500+ L.E.	-.115	.013	-.100	-9.05	0.000
Descriptive for dependent variable (average score of no-opinion responses):					
Face to face sample	Mean	Std. deviation	**Telephone sample**	Mean	Std. deviation
	0.14	0.230		0.14	0.196

Table 12: Regression Models Predicting Satisficing (High Education Model)

Variables	Unstandardized Coefficients		Std. Coeff.	t	Sig
	B	Std. Error			
Variables in the model					
(Constant)	.120	.005		21.95	0.000
Sample	-.017	.002	-.069	-7.70	0.000
Gender: male	.006	.002	.027	2.56	0.011
Age group: 18 -	-.021	.005	-.083	-4.22	0.000
Age group: 30 -	-.016	.005	-.061	-3.09	0.002
Age group: 40 -	-.015	.005	-.054	-2.87	0.004
Work status: work	-.006	.003	-.024	-2.09	0.037
Income: 300 - less than 500 L.E.	-.027	.004	-.087	-7.68	0.000
Income: 700 - less than 700 L.E.	-.033	.003	-.115	-9.70	0.000
Income: 700 - less than 1000 L.E.	-.040	.004	-.132	-11.28	0.000
Income: 1000 - less than 1500 L.E.	-.049	.004	-.154	-13.14	0.000
Income: 1500+ L.E.	-.057	.004	-.176	-14.91	0.000
Descriptive for dependent variable (average score of no-opinion responses):					
Face to face sample	Mean	Std. deviation	**Telephone sample**	Mean	Std. deviation
	0.07	0.138		0.06	0.107

4. Discussion

This study tries to determine differences between telephone and face to face surveys in Egypt. Face to face and telephone surveys were compared according to: sample representation, survey mode, survey results, and data quality.

Concerning sample representation (taking Design Effects into consideration), significant differences were observed between face to face survey sample and telephone survey sample through different demographic variables. Face to face sample's characteristics were closer to population than telephone sample. The two samples' frames were compared; the face to face sample confirms a better coverage of the population.

Concerning the results of the two surveys, respondents in face to face sample gave a higher mean score of corruption prevalence; however, the main patterns of answers of the two surveys are similar.

A modified weighting scheme (which aims to isolate the effect of demographic variables on respondents' answers) was used for comparing surveys' results. Using the new scheme did not change the significance differences between telephone and face to face surveys. Differences between the two samples became smaller in many cases, but no changes in direction occurred. Accordingly, differences between the two samples are attributed to the mode of interview, not only to the variation in demographic characteristics.

To compare the data quality between telephone and face to face surveys, "no opinion" responses was regressed on different demographic variables; gender, age, education, work status, and income. Most variables and categories in the regression model were significant. Respondents who are female, less educated, not working, and getting less income gave more "no-opinion" answers. Mean score for "no-opinion" of face to face survey was higher than the telephone survey and differences were basically due to level of education.

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