K RESEARCH, KAZAKHSTAN
FINAL AUDIT REPORT

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INTRODUCTION

The auditors visited Kazakhstan in the period May 18 - June 9.

Robert Ruud spent time in the Almaty K Research office going through the technical setup and overall data structure and calculations and did some household visits in Almaty.

Christopher O'Hearn did fieldwork in Almaty, Petropavlovsk, Atyrau, Shymkent and Astana. A total of 40 household visits were conducted.

The results and data are compared to relevant international standards based on 3M3A's wide experience of TAM systems and in particular to the GGTAM standards.

We acknowledge the full cooperation of K Research management and staff in assisting the conduct of the audit.

Key to Recommendations

3M3A applies a diagnostic scheme to prioritise issues and recommendations.

Priority Level	Definition
GOOD	The service element or feature is working as expected or within acceptable parameters.
FIX	Urgent action required to bring a critical service or feature up to acceptable standard.
CHANGE	An existing service or feature not working optimally or fully as planned and needs attention or change.
IMPROVE	Extending or expanding an existing service to deliver more.
DEVELOP	Adding new or existing services and features.

EXECUTIVE SUMMARY

In general the Kazakhstan measurement system run by K Research is a reliable and well-run panel.

While we have set out a number of areas for change and improvement, there are no critical concerns about the overall validity or accuracy of the data and the market can use it with confidence.

Establishment Survey

The ES is conducted appropriately and the sample does not require excessive weighting.

It is relatively small for the panel and additional sources have been required.

Methodology is generally good but street intercepts should be avoided in future.

Panellists can be traced to their recruitment source.

Panel Design and Sample

The panel has been stable and the size should be adequate.

The reporting frequency i.e. the number of individuals consistently reporting is on the low side in terms of providing ongoing analysis, although it should be understood this is difficult to change.

Panel Quality Control is clear and proactive. The rules applied to production and editing are generally in line with normal industry practice, although one anomaly was noted regarding Holiday status.

The Panel Efficiency is OK but could be better. The major issue with the panel is the large number of target Rims which are excessive for a panel of this size. As a consequence target tolerances are also significantly outside acceptable levels.

Panel Management and Fieldwork

Panel records are generally good and align with home information.

Compliance is also good, supported by home interviews and coincidental

surveys.

Some changes to improve coincidental surveys are recommended.

Channel identification is generally good but there may be some specific issues which require technical investigation.

Channels should ensure streaming services are watermarked.

Consistent coverage by field supervisors would be desirable.

There is no evidence of panel interference or manipulation.

Operations and Security

The K Research office is appropriately monitored and secured.

Critical areas where personal information is available such as IT and Panel Management are highly restricted.

ESTABLISHMENT SURVEY

We have checked the three waves of Establishment Survey (ES) done in 2020, 2021 and 2022. The sample in each wave is similar with 4,975, 4,930 and 4,970 respectively. This is after sample has been filtered to only have HHs with 1+ working TV sets. Total sample of ES waves is 5,295 annually.

The Establishment Survey is conducted using a stratified random sampling method which is in line with internationally accepted standard practice.

Sample points are created by random selection of electoral districts and start points within each district, with interviews following a pre-determined spacing pattern. Non-private households are excluded. Results are weighted according to known parameters.

The size of the ES is approximately 5 times the panel size, which is a small sample by international standards. A more typical multiple would be 10 times, especially in light of the forced rotation requirement. The current size has been calculated based on assumptions of maximum rotation level 25% and 5% response rate from ES.

While the ES sample size is sufficient to find the ideal composition of the TAM panel it has not been able to provide all recruitment and as a result some target groups have been recruited using boost samples.

Table 1: Panel homes by recruitment source

SOURCE	QTY	%
ES	711	67.0%
MMI	287	27.0%
CATI BOOST SURVEY	50	4.7%
OTHER SURVEY	13	1.2%
TOTAL	**1061**	

This has mainly come from the Media Marketing Index (MMI) and a smaller amount of CATI sampling. The MMI is conducted in a similar way to the ES with a random starting point and a skip pattern of contacts, which makes it an acceptable boost source.

We have not seen descriptions of the other surveys which make up 1.3% - we understand these are other market research surveys run by K Research and used for targeted sampling.

Although a single source is preferable, it is acceptable to recruit from additional sources, beyond the Establishment Survey, provided the methodology is sufficiently random. In some cases it may even be a targeted sample to make up hard-to-recruit categories.

In conducting the household interviews we found a small number of respondents who had been interviewed outside their apartment block or in communal areas.

While this may have been necessary during the COVID restriction period in general street intercepts are not used for measurement surveys for several reasons.

They naturally tend to miss people who may have difficulty in leaving their home; they tend to be more successful in daytime and therefore not reach workers and those away from the home; and as a basis for measurement is the household unit it is preferable to sample at household level.

We understand that K Research has proposed moving to a 100% CATI-based approach in future Establishment Surveys and recruitment.

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Provided there are sufficient controls to monitor any groups which have higher non-contact rates this would be a beneficial change to ensure consistency.

If any groups are difficult to recruit through CATI then a targeted sample should be added. A common practice is to include some element of face-to-face recruitment to ensure inclusion of all target groups.

ES Sample proportions before and after weighting

Table 2 and Table 3 show that the sample is distributed across the Oblasts in the same way for all three waves. There is very little adjustment and correction by weighting for most breakdowns. The largest change in proportions is the downweighting of South Kazakhstan in 2020 from 14 percent unweighted sample to 11 percent weighted. In the following years the unweighted sample has been reduced and less weighting has been used.

Table 2: Kazakhstan ES proportions and sample 2020 - 2022

Oblast	2020	2021	2022
Aqmola region	15% (745)	13% (651)	15% (739)
Aqtobe region	6% (288)	6% (292)	6% (288)
Almaty region	24% (1,191)	25% (1,208)	24% (1,174)
Atyrau region	3% (157)	3% (148)	3% (151)
Western-Kazakhstan region	3% (136)	2% (122)	3% (136)
Zhambyl region	4% (213)	4% (194)	4% (195)
Karaganda region	8% (377)	8% (405)	8% (384)
Kostanay region	4% (192)	4% (211)	4% (221)
Kyzylorda region	3% (136)	3% (136)	3% (132)
Mangistau region	2% (102)	2% (100)	2% (102)
South-Kazakhstan region	14% (694)	13% (654)	13% (655)
Pavlodar region	5% (263)	6% (288)	6% (274)
North-Kazakhstan region	2% (113)	3% (127)	3% (130)
Eastern-Kazakhstan region	7% (368)	8% (394)	8% (389)
Total	100% (4,975)	100% (4,930)	100% (4,970)

Table 3: Weighted proportions - Kazakhstan ES sample 2020 - 2022

Oblast	2020	2021	2022
Aqmola region	15% (764)	16% (772)	16% (794)
Aqtobe region	6% (278)	6% (276)	6% (278)
Almaty region	24% (1,198)	24% (1,194)	24% (1,209)
Atyrau region	3% (143)	3% (140)	3% (141)
Western-Kazakhstan region	3% (141)	3% (137)	3% (137)
Zhambyl region	4% (186)	4% (183)	4% (183)
Karaganda region	9% (432)	8% (418)	8% (415)
Kostanay region	5% (239)	5% (232)	5% (232)
Kyzylorda region	2% (106)	2% (105)	2% (106)
Mangistau region	2% (100)	2% (103)	2% (106)
South-Kazakhstan region	11% (524)	11% (532)	11% (540)
Pavlodar region	6% (304)	6% (293)	6% (290)
North-Kazakhstan region	3% (155)	3% (150)	3% (148)
Eastern-Kazakhstan region	8% (407)	8% (395)	8% (392)
Total	100% (4,977)	100% (4,930)	100% (4,971)

ES Weight distribution overall 2020 - 2022
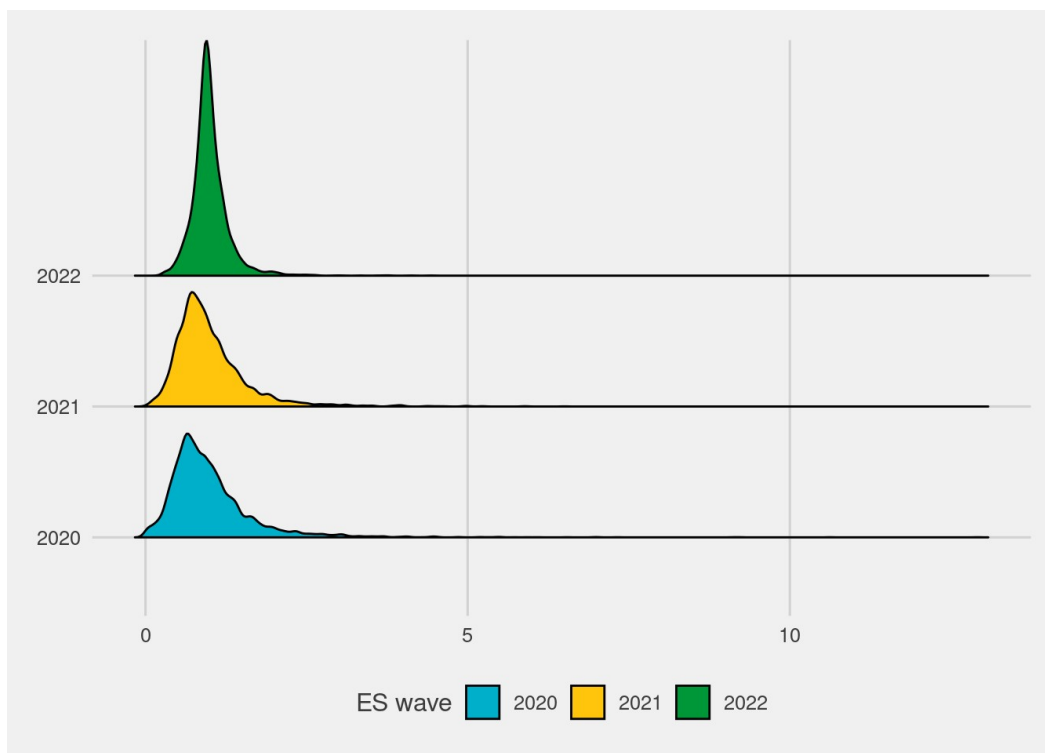
We see relatively limited weighting of the ES. There is no need for heavy

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weighting when the unweighted sample is similar to the correct distribution in KZ.

The graph shows a more peaked shape of weights in the two last ES waves and we also see that the statistical efficiency of the ES increased from 0.67 in 2020 to 0.92 from 2020 to 2022.

Table 4: Weighting and efficiency for Kazakhstan ES 2020 - 2022

wave	Sample	Sum Wgt	Mean Wgt	Min Wgt	Max Wgt	Max/Min Wgt	sd	EFF
2020	4,975	4,975	1	0.01	12.91	2,482.67	0.70	0.67
2021	4,930	4,930	1	0.04	6.50	172.03	0.57	0.76
2022	4,970	4,970	1	0.27	4.44	16.66	0.29	0.92

Construction of TAM panel matrix and weighting setup from ES

A comprehensive exploratory analysis of the ES waves is used to construct the panel matrix. This is described in detail in the documents provided "TVKz2020_Analysis.pdf_ENG", "TVKz2021_Analysis.pdf_ENG" and "TVKz2022_Analysis.pdf_ENG".

The analysis is thorough and in line with the international standard for Panel Control Analysis and design.

Recommendations: Establishment Survey

Item	Status
Establishment and MMI Survey Methodology	**Good**
ES Sample	**Increase size / change**
Street Intercepts	**Avoid**
ES Weighting and Efficiency	**Good**

The ES and MMI surveys are conducted according to good industry practice.

The ES as a standalone source is too small for the size of panel even in normal circumstances and in particular following the application of the forced rotation. A normal multiple is 10 times the size of the panel.

Street intercepts appear to be limited but should be avoided as a source of survey data and recruitment.

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RECRUITMENT

Check of link between ES/MMI and panel households

K Research have provided tables matching the recruitment interview with the panel households for the full panel.

A random sample of 20 households has been checked for Region, Geography and Nationality. There is good match between the information in the recruitment database for each household and the information in the panel household description.

For some households we see differences in household size but this has been checked by K Research and we understand there has been some variation in the number of people living in these specific households. We also understand that there could be some differences in the reporting of people in the household from the official registration vs the actual situation.

Overall the auditor finds that the households have been recruited in either the ES, MMI or a couple of "boost surveys" (to fill up hard to recruit target groups)

The table below shows the checks 1-20 with information on Region, Household size and Nationality in the recruitment interview (R) and in the panel (P).

Table 5: Recruitment(R) and Panel(P) household characteristics

Check	Region(R)	Region(P)	HH size(R)	HH size(P)	Nationality(R)	Nationality(P)
1 ES 2021	Atyrau region	200 000+	5	5+ person	Kazakh / Kazakh woman	KAZAK
2 MMI 2022	9. Taraz	200 000+	4. Four people	4 person	1. Kazakh	KAZAK
3 ES 2022	Almaty oblast	Almaty	1	1 person	Russian/Russian	RUSSIAN
4 MMI 2021	14. Kokshetau	100 000-200 000	2. Two persons	4 person	1. Kazakh	KAZAK
5 MMI 2021	9. Taraz	200 000+	4. Four persons	4 person	2. Russian	RUSSIAN
6 ES 2017	Shymkent	200 000+	5	5+ person	Kazakh/Kazakh	KAZAK
7 ES 2021	Almaty region	Almaty	4	2 person	Russian/Russian	OTHER
8 ES 2022	Almaty region	Almaty	3	3 person	Russian/Russian	RUSSIAN
9 MMI 2021	1. Almaty oblast	Almaty	4. Four people	4 person	1. Kazakh	KAZAK
10 ES 2022	East-Kazakhstan oblast	200 000+	2	2 person	Kazakh / Kazakh woman	KAZAK
11 ES 2021	Karagandinskaya oblast	200 000+	1	4 person	Kazakh / Kazakh woman	KAZAK
12 ES 2021	Almaty region	Almaty	2	3 person	Russian/Russian	RUSSIAN
13 ES 2021	Kostanay region	100 000-200 000	3	4 person	Russian /Russian	RUSSIAN
14ES 2022	North-Kazakhstan region	200 000+	3	2 person	Russian /Russian	RUSSIAN
15 ES 2022	Kostanay region	100 000-200 000	4	4 person	Russian /Russian	RUSSIAN
16 ES 2022	South Kazakhstan oblast	200 000+	3	3 person	Kazakh / Kazakh woman	KAZAK
17 ES 2017	Almaty oblast	Almaty	4	4 person	Other / other	RUSSIAN
18 MMI 2021	11. Shymkent oblast	200 000+	5. Five or more people	5+ person	1. Kazakh	KAZAK
19 ES 2017	Pavlodar region	200 000+	5	5+ person	Kazakh / Kazakh woman	KAZAK
20 ES 2022	West Kazakhstan oblast	200 000+	3	3 person	Kazakh / Kazakh woman	KAZAK

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Recruitment is mainly from the ES and MMI. These are random and probabilistic which offers equal chances of recruitment and avoids manipulation or selection.

Item	Status
Recruitment sourcing	Good

PANEL DESIGN, SAMPLE and REPORTING

The TAM panel in Kazakhstan 2020 - 2023

We reviewed the raw data files for the 1st and 15th day of each month for the period April 15 2020 - April 15 2023. This is the same data that goes into the end user software.

We have also received data for every day from March 15 to April 15 2023. We will use this data in the "HH Reporting frequency" review.

Table 6: Reporting Households and Individuals 2020 - 2023

Date	Households	Individuals	Date	Households	Individuals
2020-01-01	728	1651	2021-09-01	874	1996
2020-01-15	846	1932	2021-09-15	886	2041
2020-02-01	874	1996	2021-10-01	851	1953
2020-02-15	854	2006	2021-10-15	910	2113
2020-03-01	826	1916	2021-11-01	893	2110
2020-03-15	833	1983	2021-11-15	916	2164
2020-04-01	878	2085	2021-12-01	898	2115
2020-04-15	870	2039	2021-12-15	921	2198
2020-05-01	878	2054	2022-01-01	766	1764
2020-05-15	880	2054	2022-01-15	835	1945
2020-06-01	870	1973	2022-02-01	914	2114
2020-06-15	873	2026	2022-02-15	931	2195
2020-07-01	866	1990	2022-03-01	939	2108
2020-07-15	847	1934	2022-03-15	903	2041
2020-08-01	820	1862	2022-04-01	924	2088
2020-08-15	844	1867	2022-04-15	927	2098
2020-09-01	886	2035	2022-05-01	903	2017
2020-09-15	893	2058	2022-05-15	879	1951
2020-10-01	895	2029	2022-06-01	899	2013
2020-10-15	902	2073	2022-06-15	894	1971
2020-11-01	866	1971	2022-07-01	892	1914
2020-11-15	867	1970	2022-07-15	867	1866
2020-12-01	883	2035	2022-08-01	851	1863
2020-12-15	894	2075	2022-08-15	856	1884
2021-01-01	790	1722	2022-09-01	886	2068
2021-01-15	904	2033	2022-09-15	875	2084
2021-02-01	907	2073	2022-10-01	839	1997
2021-02-15	904	2079	2022-10-15	821	1958
2021-03-01	883	2034	2022-11-01	873	2080
2021-03-15	892	2064	2022-11-15	885	2099
2021-04-01	906	2084	2022-12-01	874	2034
2021-04-15	885	2052	2022-12-15	907	2105
2021-05-01	832	1891	2023-01-01	774	1756
2021-05-15	847	1922	2023-01-15	841	1923
2021-06-01	890	2030	2023-02-01	886	2074
2021-06-15	869	1962	2023-02-15	881	2025
2021-07-01	877	2005	2023-03-01	889	2046
2021-07-15	852	1908	2023-03-15	882	2043
2021-08-01	821	1876	2023-04-01	883	2131
2021-08-15	827	1897	2023-04-15	846	2043

Graph: In-Tab homes and individuals 2020-2023
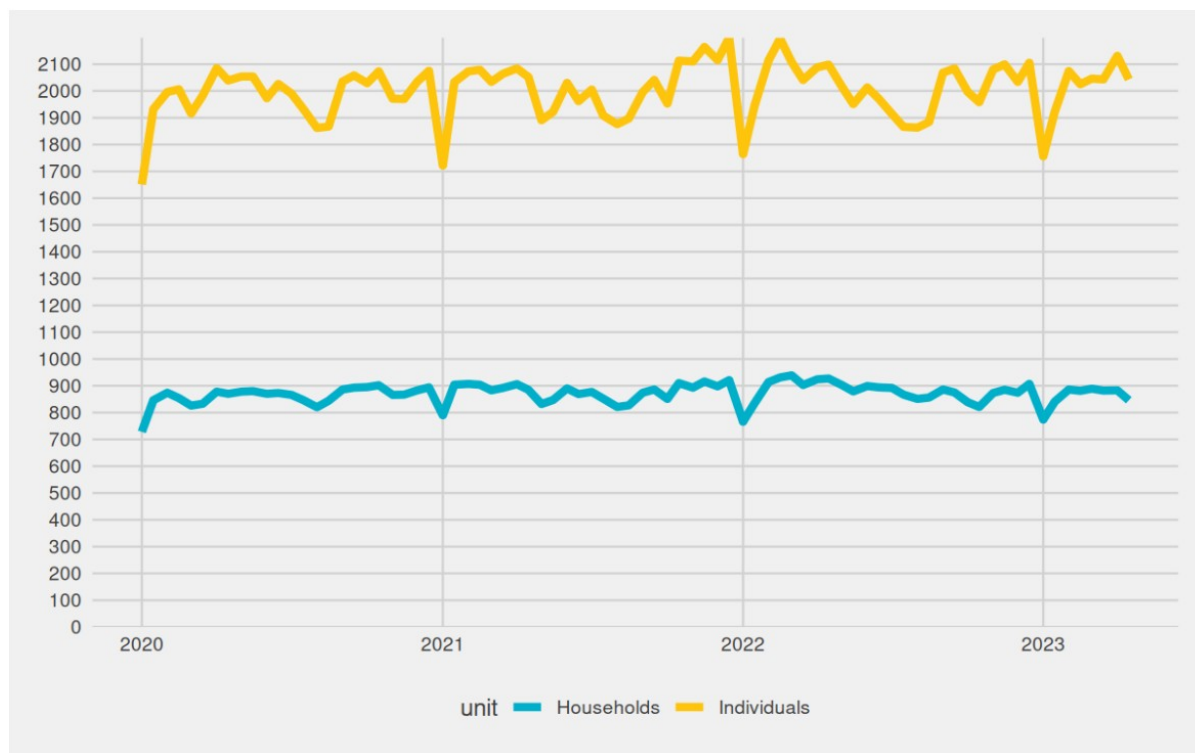
In general we see that the in-tab or net panel is stable and maintains above 800 homes and 2000 individuals after polling and validations, with the main exceptions being the New Year holiday periods.

Reporting frequency

To make a standardised measure of the reporting frequency of each household we look at how many days each household reports data within a 30 day period

In the case of Kazakhstan where meters are polled per person and not per household we have to look at whether *any* household member is polled per day. In order to do this we use the K Research daily polling log (dates from May 21 - June 19 in this case.)

Using the polling report, we calculate the number of days each household reports data.

The results below show that of 1039 households that were on the panel for the full period, 863 or 83 percent were polled 28 days or more. Households which either left or joined the panel during the period are not included, which accounts for the panel size being below the contractual 1055 households in this analysis.

Graph: Reporting frequency by household over 30 days
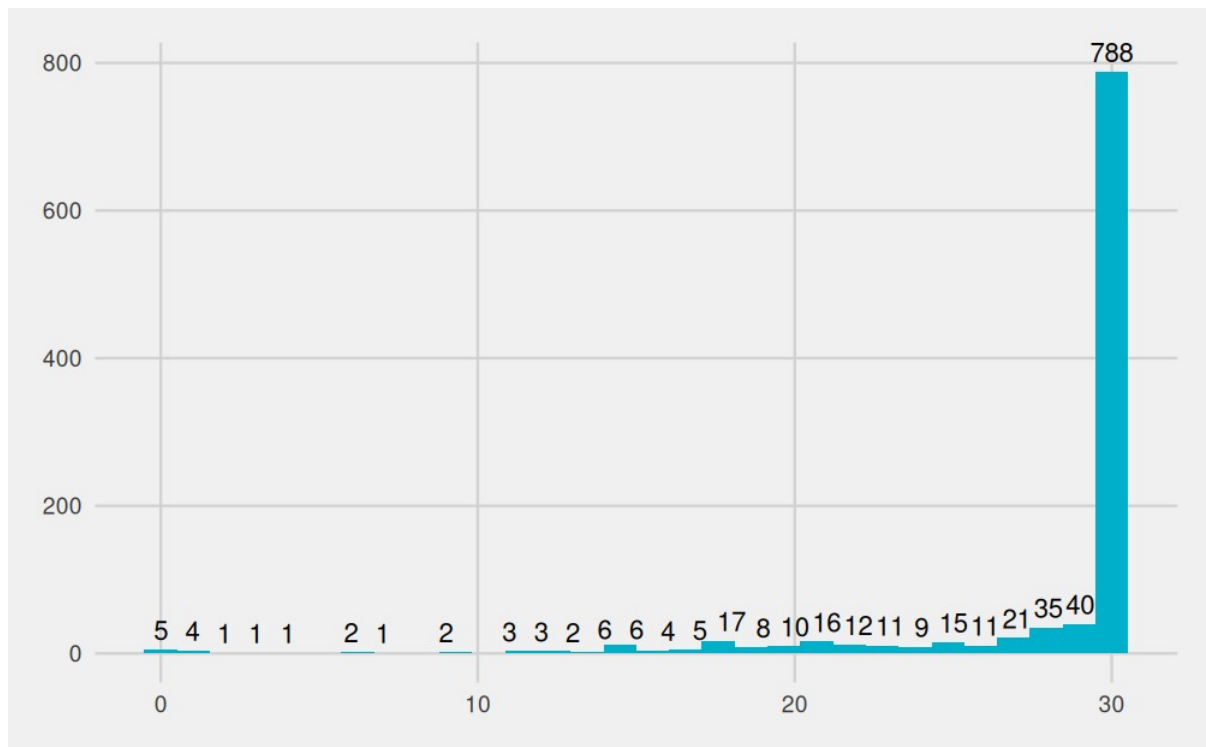
At household level this is an acceptable result - typically a range of 80-90% would be considered average.

Compared with a fixed meter panel, there are a few extra steps to qualify the data from a personal meter. The polled data has information about:

- Has the meter been undocked during the reporting period? (451 No Undock)
- Has the meter been docked at all during the reporting period? (452 No Dock)
- Has the meter been too little in motion, adult threshold? (453 Low motion adults)
- Has the meter been too little in motion, kids threshold? (454 Low motion kids)

These Quality Controls decide if the meter goes into the daily data even if the meter has returned data.

Some homes are withheld for other quality reasons (902 Withheld home)

The proportions dropping off at each of these quality control points in the period May 21-June 19 are as follows.

Graph: Polled and Not-Polled homes and QC witholding

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PPMs polled

Legend:
- 032 Sync Issue
- 451 No Undock
- 452 No dock
- 453 Low Motion Adults
- 454 Low Motion Kids
- 902 Withheld home
- Not Polled
- Polled

Poll and Non-Poll   After QC
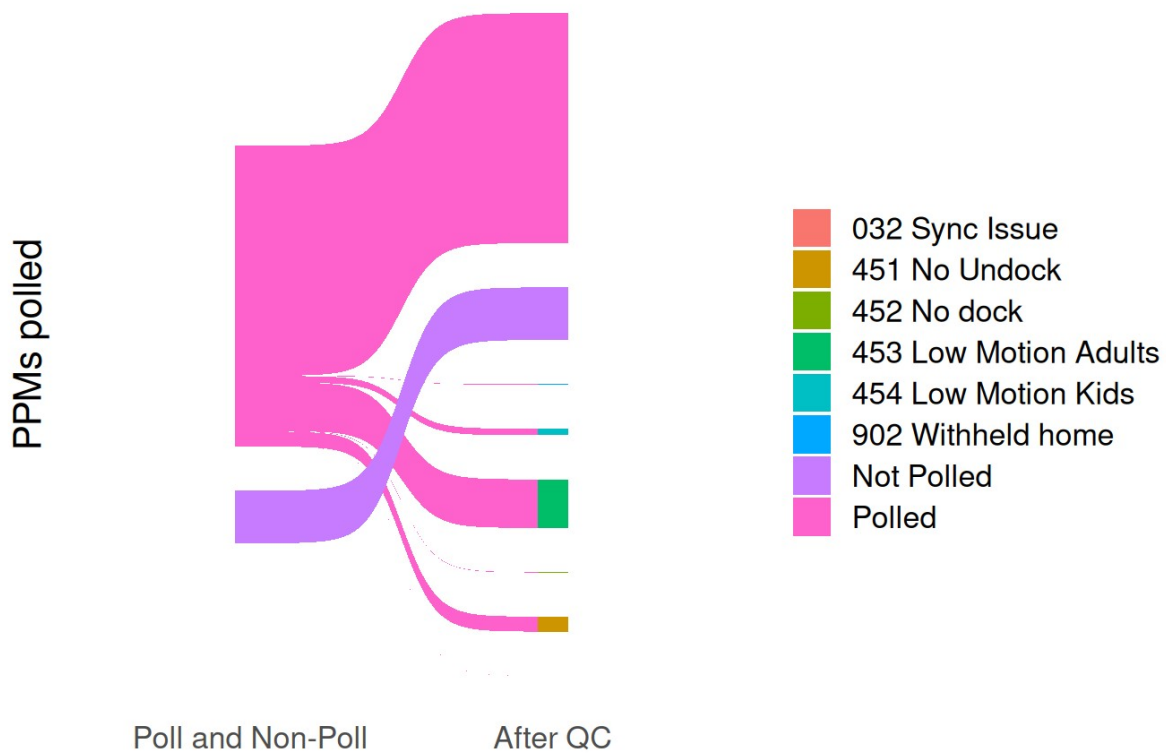
Table 7: Polled PPMs May 21 - June 19, Polled and Rejection reason after QC checking

Poll result	n	percent
Potential (all PPMs 30 days)	93,450	100%
Not Polled	13,919	14.9%
Polled (before QC)	79,531	85.1%
QC check after Polling, reason for rejection		
45 Low Motion Adults	12,827	13.7%
451 No Undock	3,962	4.2%

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454 Low Motion Kids	*1,736*	*1.9%*
452 No Dock	*105*	*0.1%*
902 Withheld Home	*87*	*0.1%*
032 Sync Issue	*6*	*0.0%*
Total QC rejection	**18,723**	**20.0%**
Polled without QC issues	***60,808***	***65.1%***

Dealing with the Not Polled meters first, we see that of all the potential polling days per meter in the sample period, the actual number of polling days was 14.9% lower i.e. data was not received.

These are primarily behavioural or technical issues such as:

- Low charge - the panellist forgot to charge the device
- Holiday - we understand it has been agreed that individuals on Holiday status are removed from polling
- Technical - mainly software faults or other issues such as batteries, damage etc requiring re-boot or replacement.

The Holiday status accounts for around 5% of total non-polling. It is more normal for these individuals or homes to be included within polling as it represents real activity in the population. Removal of individuals on holiday artificially increases viewing within the universe.

We also noted that K Research is very proactive in reminding panellists to charge meters with texts and reminders before weekends and holidays, and additional incentives. Households often mentioned this activity during the interviews when asked about the frequency and nature of contacts from K Research.

Moving to the remaining 85.1% polled meter-days in a month these also have further qualification of the received data.

QC controls result in further rejection of daily data from individual PPMs. A total of 20 percent of the total polled and unpolled are rejected after QC controls.

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The major reason for dropout is low motion, meaning the meter is removed from the docking station but is assumed not to have been carried for the entirety of the day.

The threshold applied is that less than 4 hours motion means the meter is withheld from the data, while motion of less than 8 hours triggers a work order to contact the respondent.

This means that in the tested period 65.1 % of the aggregated polled meters resulted in providing data after polling and QC controls.

This is a natural effect of using individual meters, and it is a limiting factor in analysis particularly for advertising campaigns which measure reach and frequency.

We see from the home visits that K Research is very active in fieldwork and panel management to counter the dropouts.

It is doubtful that the numbers could be changed significantly but we suggest this remains an area of focus and attention for any possible improvement. Unfortunately there are no obvious quick wins in this area.

Panel turnover and effect on viewing levels

In the second half of 2022 around 40 percent of the panel was replaced after agreement with the technical committee. The current panel is composed of households who joined the panel at different times, with some veteran households that joined the panel back in 2016, and a large portion that joined during the last months of 2022 as the graph below shows.

Table 8: Distribution by time on panel
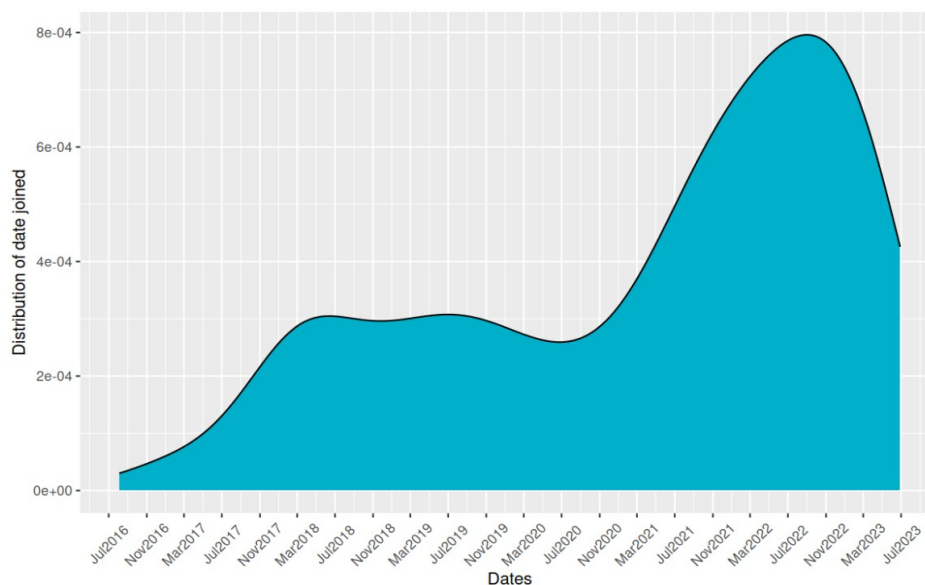
In our experience a large exchange of households over a short period of time can affect the stability of both ratings and share for individual channels.

Even using random selection it is simply unlikely that viewing will be identical among two large samples - neither is wrong or right, but they may be different and produce a step-change in data.

Looking at data for the comparable periods January to May in 2021, 2022 and 2023 we see the following:

Graph: Average channel ratings and total ratings 2021-2023 (Jan-May)
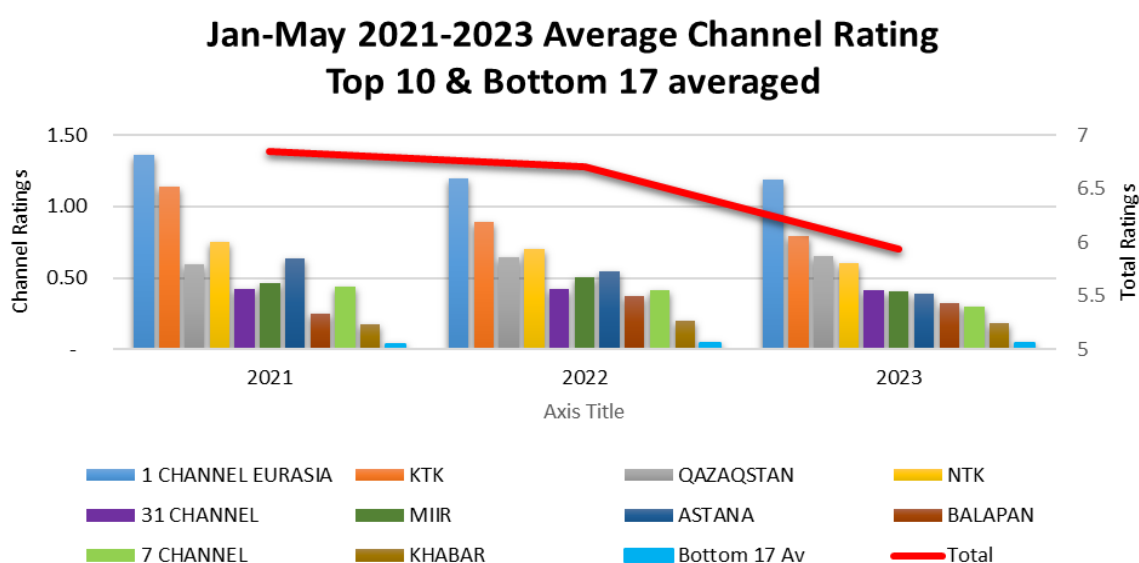
A general declining trend in average total and channel ratings is clear, accelerating from 2022 to 2023.

All channels have the same trend, but channels like KTK and Astana seem to have had relatively more impact. 1 Channel Eurasia has not been affected as much it seems.

Graph: Average Channel Share 2021-2023 Jan-May

Jan-May 2021-2023 Average Channel Share
Top 10 & Bottom 17 cumed

Year	1 CHANNEL EURASIA	KTK	QAZAQSTAN	NTK	31 CHANNEL	MIIR	ASTANA	BALAPAN	7 CHANNEL	KHABAR	Bottom 17 Av
2023	20	13	11	10	7	7	7	5	5	3	12
2022	18	13	10	11	6	8	8	6	6	3	12
2021	20	17	9	11	6	7	9	4	6	3	9

Shares have been relatively stable, but KTK has dropped from 17 percent in 2021 to 13 in 2022 and 2023.

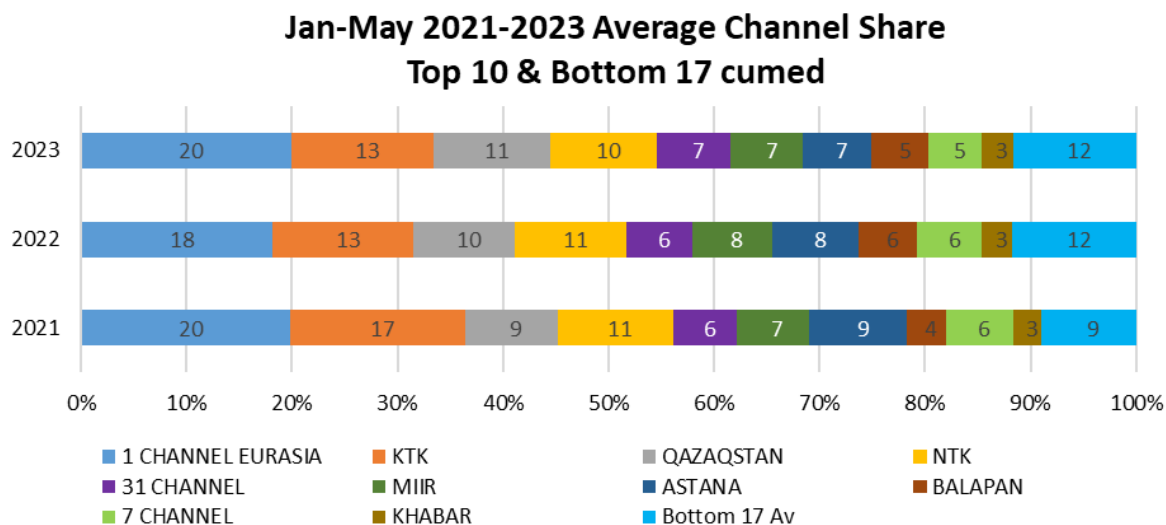There is a slight increase in the lower 17 channels share from 9 percent to 12 percent.

The biggest rating drops seem to have taken place between Jan-May 2022 vs between Jan-May 2023.

However the causes are not easy to determine.

There is a worldwide trend of decline in linear viewing as many people switch to non-linear TV (catch up and broadcast players) or streaming platforms.

We are also aware that a number of local and regional issues caused significant change during 2022 and 2023 which may have increased viewing in 2022 and exaggerated the subsequent drop.

This could be the natural reason for the change or it could partly be influenced by the change in panel sample. Our observation here is that whatever the actual cause, such analysis is made less decisive by changes in panel stability.

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Recommendations: Panel and Reporting

tem	Status
Reporting Frequency HH	Good
Reporting Frequency Individual	Monitor
QC Processes	Good
Holiday Status	Include

Focus on improvement to individual reporting frequency should be a priority, including coverage of all areas by a dedicated local supervisor.

We recommend inclusion of individuals on Holiday status in line with common international practice.

We would also recommend a more conservative replacement policy to achieve change over longer periods and avoid more than 25% turnover in a year.

Check for abnormal viewing behaviour

We have checked to see if there are any signs that the panel could be corrupted. This could be in a situation where a group of panel households have become known to outside parties that influence the household to have specific viewing behaviour.

The test done here is to take each individual's viewing minutes to each channel for each day for a period (in this case from March 15 2023 to April 15 2023).

We aggregate the viewing to each channel and then run a cluster analysis. *Hvitfeldt E, Bodwin K (2023). tidyclust: A Common API to Clustering. https://github.com/tidymodels/tidyclust, https://tidyclust.tidymodels.org/.*

What we are looking for is that viewing is evenly distributed in the same way among the groups and there are no clusters which have very high viewing to certain channels. A small amount of viewing to certain channels is always expected e.g. some individuals will favour certain genres such as sport or drama but this should also be distributed.

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In this case the clustering analysis gives us a typical result for a panel that is without any problems.

We see 4 clusters based on volume of viewing (where 3 are relevant)

clu	n (individuals)	percent
Cluster_1	2241	92.4
Cluster_2	160	6.6
Cluster_3	24	1.0
Cluster_4	1	0.0
Total	2426	100
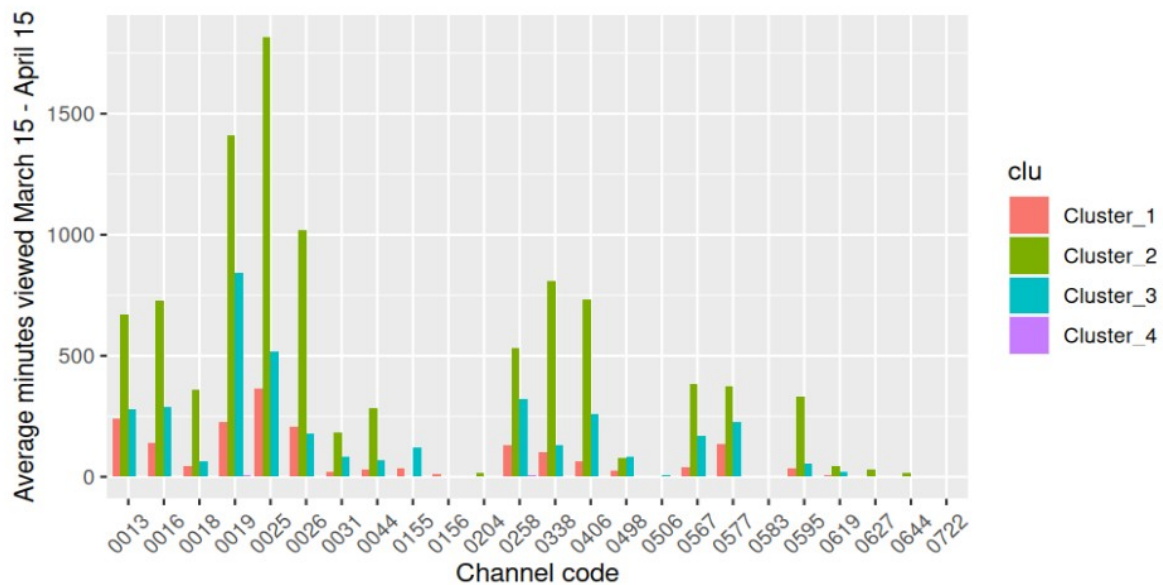
We see that the main cluster 1 has "normal" viewing to all channels, cluster 2 has very high viewing to all channels and cluster 3 behaves more or less like cluster 1 for most channels but with distributed viewing to some channel genres.

The auditor cannot see any signs that indicate abnormal viewing behaviour in the K Research TAM panel.

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TAM panel snapshot

To study the panel's adherence to the ideals given in the ES and in the weighting model we study the sample size in relation to the ideal sample size.

We calculate the ideal sample from the proportions in the "Sum Weights" column. Then we compare the actual panel sample with the Ideal. Sample size within tolerance.

Sample on April 15 was 2,043, which is projected to the 8,101 million TV Universe. The mean weight of 3.97 for the Total means each individual on average represents around 3,970 individuals. (considering few decimals)

The standard deviation (sd) is calculated from the normalised weights and is used to calculate the weighting efficiency (EFF) with the formula $EFF = 1/(1+ sd^2)$.

Ideal HH sample is calculated by distributing the sample by the proportions of the sum of weights.

The measure "Within" is a quick check of whether the sample is within the square root of the ideal HH sample on this date. (which is the "best practice" level used by Kantar.) Here a "1" is within and a "0" falls outside tolerance.

In the last column we see an index of sample over ideal sample for the HH level.

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Table 9: Sample and Ideal Sample, Efficiency and Variance

Kazakhstan Rim001 April 15 2023

rim001	Sample size(N)	Sum Weights	Mean Weight	sd	EFF	Ideal HH-sample	Within	Idx ind sample/ideal
Almaty	563	1,842	3.27	0.56	0.76	465	0	1.21
Astana	224	1,085	4.84	0.61	0.73	274	0	0.82
200 000+	1,060	4,368	4.12	0.51	0.79	1,102	0	0.96
100 000-200 000	196	806	4.11	0.52	0.79	203	1	0.96
Total	2,043	8,101	3.97	0.55	0.77	2,043	1	1.00

Kazakhstan Rim002 April 15 2023

rim002	Sample size(N)	Sum Weights	Mean Weight	sd	EFF	Ideal HH-sample	Within	Idx ind sample/ideal
Almaty M 6-17	55	176	3.20	0.51	0.79	44	0	1.24
Almaty W 6-17	52	164	3.15	0.55	0.77	41	0	1.26
Almaty M 18-24	19	75	3.95	0.86	0.57	19	1	1.00
Almaty W 18-24	23	80	3.48	0.61	0.73	20	1	1.14
Almaty M 25-34	41	194	4.73	0.70	0.67	49	0	0.84
Almaty W 25-34	63	245	3.89	0.57	0.76	62	1	1.02
Almaty M 35-44	41	151	3.68	0.67	0.69	38	1	1.08
Almaty W 35-44	59	178	3.02	0.44	0.84	45	0	1.31
Almaty M 45-54	34	100	2.94	0.57	0.76	25	0	1.35
Almaty W 45-54	39	125	3.21	0.47	0.82	32	0	1.24
Almaty M 55+	43	135	3.14	0.53	0.78	34	0	1.26
Almaty W 55+	94	219	2.33	0.37	0.88	55	0	1.70
KZ M 6-17	149	733	4.92	0.52	0.79	185	0	0.81
KZ W 6-17	164	694	4.23	0.41	0.85	175	1	0.94
KZ M 18-24	54	290	5.37	0.53	0.78	73	0	0.74
KZ W 18-24	72	289	4.01	0.40	0.86	73	1	0.99
KZ M 25-34	80	569	7.11	0.75	0.64	143	0	0.56
KZ W 25-34	104	617	5.93	0.63	0.71	156	0	0.67
KZ M 35-44	120	495	4.12	0.44	0.84	125	1	0.96
KZ W 35-44	182	534	2.93	0.30	0.92	135	0	1.35
KZ M 45-54	97	356	3.67	0.34	0.89	90	1	1.08
KZ W 45-54	137	426	3.11	0.34	0.89	107	0	1.28
KZ M 55+	100	483	4.83	0.53	0.78	122	0	0.82
KZ W 55+	221	773	3.50	0.36	0.88	195	0	1.13
Total	2,043	8,101	3.97	0.55	0.77	2,043	1	1.00

Kazakhstan Rim003 April 15 2023

rim003	Sample size(N)	Sum Weights	Mean Weight	sd	EFF	Ideal HH-sample	Within	Idx ind sample/ideal
Almaty N-Kaz	213	678	3.18	0.50	0.80	171	0	1.25
Almaty Kaz	350	1,164	3.33	0.59	0.74	294	0	1.19
KZ N-Kaz	560	2,088	3.73	0.38	0.88	527	0	1.06
KZ Kaz	920	4,171	4.53	0.59	0.74	1,052	0	0.87
Total	2,043	8,101	3.97	0.55	0.77	2,043	1	1.00

Kazakhstan Rim004 April 15 2023

rim004	Sample size(N)	Sum Weights	Mean Weight	sd	EFF	Ideal HH-sample	Within	Idx ind sample/ideal
ALA No Kaz	257	928	3.61	0.62	0.72	234	0	1.10
ALA Kaz	306	914	2.99	0.49	0.81	231	0	1.33
KZ No Kaz	715	3,101	4.34	0.55	0.77	782	0	0.91
KZ Kaz	765	3,158	4.13	0.50	0.80	796	0	0.96
Total	2,043	8,101	3.97	0.55	0.77	2,043	1	1.00

Kazakhstan Rim005 April 15 2023

rim005	Sample size(N)	Sum Weights	Mean Weight	sd	EFF	Ideal HH-sample	Within	Idx ind sample/ideal
ALA Higher Education	189	776	4.11	0.62	0.72	196	1	0.97
ALA Primary Education	374	1,066	2.85	0.50	0.80	269	0	1.39
KZ Higher Education	369	1,867	5.06	0.66	0.69	471	0	0.78
KZ Primary Education	1,111	4,392	3.95	0.46	0.83	1,108	1	1.00
Total	2,043	8,101	3.97	0.55	0.77	2,043	1	1.00

Kazakhstan Rim006 April 15 2023

rim006	Sample size(N)	Sum Weights	Mean Weight	sd	EFF	Ideal HH-sample	Within	Idx ind sample/ideal
Almaty Working	276	1,006	3.65	0.60	0.74	254	0	1.09
Almaty Not working	287	836	2.91	0.51	0.79	211	0	1.36
KZ Working	815	3,328	4.08	0.55	0.77	839	1	0.97
KZ Not working	665	2,931	4.41	0.49	0.81	739	0	0.90
Total	2,043	8,101	3.97	0.55	0.77	2,043	1	1.00

Kazakhstan Rim007 April 15 2023

rim007	Sample size(N)	Sum Weights	Mean Weight	sd	EFF	Ideal HH-sample	Within	Idx ind sample/ideal
ALA Married	255	910	3.57	0.58	0.75	229	0	1.11
ALA Not married	308	932	3.03	0.54	0.78	235	0	1.31
KZ Married	672	3,000	4.46	0.57	0.76	757	0	0.89
KZ Not married	808	3,259	4.03	0.48	0.81	822	1	0.98
Total	2,043	8,101	3.97	0.55	0.77	2,043	1	1.00

Kazakhstan Rim008 April 15 2023

rim008	Sample size(N)	Sum Weights	Mean Weight	sd	EFF	Ideal HH-sample	Within	Idx ind sample/ideal
A KZ 1-3 i. off air	34	66	1.94	0.18	0.97	17	0	2.04
A KZ 4+ i. off air	120	167	1.39	0.11	0.99	42	0	2.85
A KZ 1-3 i. non off air	55	232	4.22	0.38	0.88	59	1	0.94
A KZ 4+ i. non off air	97	449	4.63	0.46	0.83	113	0	0.86
A NKZ 1-3 i. off air	18	61	3.39	0.49	0.81	15	1	1.17
A NKZ 4+ i. off air	32	42	1.31	0.20	0.96	11	0	3.02
A NKZ 1-3 i. non off air 2+ TV	46	129	2.80	0.37	0.88	33	0	1.41
A NKZ 1-3 i. non off air 1 TV	58	302	5.21	0.69	0.68	76	0	0.76
A NKZ 4+ i. non off air 2+TV	51	160	3.14	0.35	0.89	40	0	1.26
A NKZ 4+ i. non off air 1 TV	52	234	4.50	0.75	0.64	59	1	0.88
K KZ 1-3 i. off air	113	357	3.16	0.40	0.86	90	0	1.26
K KZ 4+ i. off air	252	761	3.02	0.43	0.85	192	0	1.31
K KZ 1-3 i. non off air	144	666	4.62	0.37	0.88	168	0	0.86
K KZ 4+ i. non off air	256	1,374	5.37	0.47	0.82	347	0	0.74
K NKZ 1-3 i. off air	82	271	3.30	0.54	0.78	68	0	1.20
K NKZ 4+ i. off air	86	278	3.23	0.48	0.81	70	0	1.23
K NKZ 1-3 i. non off air 2+ TV	85	340	4.00	0.44	0.84	86	1	0.99
K NKZ 1-3 i. non off air 1 TV	206	1,031	5.00	0.57	0.76	260	0	0.79
K NKZ 4+ i. non off air 2+TV	99	393	3.97	0.42	0.85	99	1	1.00
K NKZ 4+ i. non off air 1 TV	157	788	5.02	0.57	0.76	199	0	0.79
Total	2,043	8,101	3.97	0.55	0.77	2,043	1	1.00

Kazakhstan Rim009 April 15 2023

rim009	Sample size(N)	Sum Weights	Mean Weight	sd	EFF	Ideal HH-sample	Within	Idx ind sample/ideal
ALA Off Air	204	336	1.65	0.25	0.94	85	0	2.41
ALA Alma Tv	103	493	4.79	0.58	0.75	124	0	0.83
ALA ID TV	130	586	4.51	0.57	0.76	148	0	0.88
ALA Other cable	81	317	3.91	0.48	0.81	80	1	1.01
ALA Sat	45	110	2.45	0.31	0.91	28	0	1.62
KZ Off Air	533	1,667	3.13	0.45	0.83	420	0	1.27
KZ Alma Tv	203	985	4.85	0.47	0.82	248	0	0.82
KZ ID TV	231	1,159	5.02	0.53	0.78	292	0	0.79
KZ Other cable	358	1,714	4.79	0.51	0.79	432	0	0.83
KZ Sat	155	734	4.74	0.51	0.79	185	0	0.84
Total	2,043	8,101	3.97	0.55	0.77	2,043	1	1.00

rim010	Sample size(N)	Sum Weights	Mean Weight	sd	EFF	Ideal HH-sample	Within	Idx ind sam-ple/ideal
ALA Off Air Smart	90	163	1.81	0.32	0.91	41	0	2.19
ALA Off Air No Smart	114	173	1.52	0.16	0.97	44	0	2.61
ALA No Off Air Smart	171	818	4.78	0.59	0.74	206	0	0.83
ALA No Off Air No Smart	188	688	3.66	0.49	0.81	174	0	1.08
KZ Off Air Smart	351	771	2.20	0.19	0.96	194	0	1.81
KZ Off Air No Smart	182	896	4.92	0.46	0.83	226	0	0.81
KZ No Off Air Smart	613	2,813	4.59	0.49	0.81	709	0	0.86
KZ No Off Air No Smart	334	1,779	5.33	0.52	0.79	449	0	0.74
Total	2,043	8,101	3.97	0.55	0.77	2,043	1	1.00

Conclusion: Targets and Rims

Overall the panel maintains a reasonable level of efficiency. International standard would be 70% as a minimum and here most targets are above 70% with a few are in the 80-90% range. Only a handful fall below 70%.

However the best systems will show 80% efficiency or above and there is scope for improvement.

There are many weighting rims and the majority (67/86 excluding Totals) are not within tolerance, using the square root principle (tolerance = square root of ideal cell size).

Some of the tolerances will be affected by the disproportional boosts of some target groups. As an example, the "KZ 4+ i. off air" in rim008 is boosted with 50 HHs and is closer to the ideal if the boost is not counted.

The many weighting rims should be reviewed and some should be removed or collapsed. Having 86 rims in a panel of 2000 individuals is excessive. Following the "Auditors rule of thumb" the individuals divided by number of rims should give at least 50. In the Kazakhstan setup the calculation would be 2000/80 = 25.

The panel size is sufficient to cover the market with a ratio of individuals to universe just under 1:4000. However this is close to recommended limits, particularly for a non-homogenous market.

The guiding principle for selecting rims should be to prioritise those which are used as primary targets in the market.

It is not possible to control every detail of the panel by weighting, in the auditors' opinion some demographic elements should be left to chance.

Recommendations: Panel Targets and Weighting

Item	Status
Panel Efficiency	Good
Target Tolerance	Improve
RIM Weighting	Change

Our recommendation is to attempt to reduce by half the number of weighting categories. Alternatively a significant increase in panel size would be necessary.

The auditors recommend following the exploratory analysis of the ES and achieving a market consensus to define which elements should be included in the weighting of the panel.

This will improve tolerance and efficiency and a target of 80% efficiency should be achievable.

HOME VISITS, TESTS AND VERIFICATION

Home visits were completed in May/June 2023, with a total of 40 home visits carried out over a period of three weeks.

Methodology

A number of regions were selected to represent different areas and a range of technician installations. The selected cities and successful visits were:

Table10: Distribution of home visits

Almaty	15
Petropavlovsk	4
Atyrau	4
Shymkent	8
Astana	9

Home visits are not intended to be completely representative but a range of household characteristics (language, size, children) were included.

A pool of homes were drawn at random by the auditors and the K Research panel team made appointments depending on availability.

The home was visited by the auditor and an independent translator, accompanied by the K Research panel manager and in Petropavlovsk and Shymkent also a local representative.

A CAPI interview was administered covering different aspects of the household and viewing:

- Household details confirmed e.g. number of people, number of meters, type of reception, presence of Smart TV. These were compared to K Research's records.

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- TVs, broadband and equipment and some general viewing behaviour questions.

- Specific questions about use of the Telemeter and behaviour compliance.

- Recruitment and security to confirm recruitment through random contact and absence of interference.

- General questions about panel contact and management.

- Finally a channel test is administered. This consisted of viewing three channels, recording times and checking against K Research data logs.

Results

Panel Records

In general we found no significant variation in panel records covering key household variables.

Table 11: Panel records and key variables confirmed by household

Variable	Correct	Incorrect	%
Number of People in HH	39	1	97.5
Presence of children	40	0	100
Number of Telemeters	121	1	99
Type of reception	39	1	97.5
Smart TV	37	3	92.5
Language	27	1	96%

Some error is always expected as homes change and do not report or update, while Items of equipment such as Smart TVs are genuinely difficult to keep accurately as people add devices.

The single error in the number of people and Telemeter count was the recent addition of an older parent who had come to live in the home.

The language question was added during the interviews so was not available for all homes, but only one variance was found. The home was a Kazakh family and recorded as speaking Kazakh in the home, but during the interview said they spoke Russian.

Panel Recruitment and Security

Homes were asked a range of questions to ensure they had been contacted randomly for recruitment and had not been manipulated.

We found homes remembered being contacted through random recruitment. Mostly this was at the doorstep although a number of homes (4) reported being approached outside but near their home.

These homes have been taken from boost surveys such as MMI etc. (for discussion see ES section). However overall we see that the homes have come from a random, probabilistic source.

Further the homes were asked if they were aware of any others on the panel, or if they had been contacted regarding viewing and no connections were reported. One home reported that she had seen someone at her work with a meter but had not discussed it.

Meters and Compliance

Household respondents were asked several questions about wearing their meter consistently and also asked to comment on the compliance of other household members. They were asked to rank meter wearing on a scale of Never, Sometimes, Mostly and Always, and also asked some confirmation questions about when they put their meter on each day.

Not surprisingly there is a generally good reported level of meter compliance. Only 3 of the 40 primary respondents admitted to wearing their meter less than Always

- 9 of 36 responses about other members were Sometimes or Mostly

It would be natural for people to claim higher rates of wearing than in reality, but there was very little resistance or doubt expressed. We met several people who had special bags to carry their meter in and another who mentioned she deliberately looked for clothes with pockets so she could carry the meter.

We frequently observed that homes had a strong 'champion' who encouraged and monitored usage among the other household members and this seems to be a key factor in promoting compliance.

During the visits homes were also asked about any technical problems and more than half reported at least one problem, mostly with batteries not charging. All the homes reported quick replacement of the faulty meters.

As the production of new PPM meters stops and replacements become more difficult to obtain this will become a growing problem and the market should be considering a replacement system in the not too distant future.

Coincidental Surveys

K Research conducts regular coincidental surveys with the aim of

contacting each home twice per year. 998 homes were contacted in 2022 and 347 to April 2023.

The Coincidental Survey aims to be a spot-check that panel behaviour seen in viewing logs is representative of reality i.e. that the panel members are compliance. Because the panel member has no warning of the call their behaviour is more likely to be genuinely verified.

The results are within acceptable limits showing 81.4% compliance (measured viewing on monitored channels) in 2022 and 81.7% to date in 2023. A typical international standard is to be above 80%.

Reviewing the questionnaire it does check viewing but is not the standard Kantar questionnaire and we recommend adopting an approach closer to that used in many other markets.

The current questionnaire asks if the respondent and other family members are at home and if the TV is on. It also asks which channel is being viewed. This allows room for ambiguity as to whether panel members are home AND watching TV and does not include correct non-viewing.

A standard coincidental survey, with adaptation for portable meters, could ask:

- Is the respondent at home and is the TV on
- Are they watching TV at the time of the call
- Who else is in the room watching TV
- Who else is at home and not watching TV (not in the room)

In this method correct compliance is considered to be when people are at home watching TV and their viewing is registered and also when people are at home NOT watching TV and not registering as viewing.

One further observation on the K Research Coincidental study is that the questionnaire suggests making an appointment to call if the respondent is not at home. However if the respondent anticipates a call they are more likely to ensure they are wearing their meter.

We therefore recommend that if the respondent is not at home the call is terminated and they are randomly called at another time, probably with a maximum of three attempts in a short space of time to avoid annoyance.

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Panel Management

Panel management is proactive and all homes had good levels of contact from the panel control team.

It was noticeable that this was reported by the respondents to be more frequent in regions where there is a local representative or dedicated supervisor. For example in Petropavlosk, Shymkent and Astana the homes consistently reported weekly or frequent contact, often with messages prior to holidays and weekends to remind them about meter-wearing.

The homes were widely motivated by the points system. Points are awarded for carrying the meter (not for actual viewing, to avoid influencing behaviour).

A number of homes who had joined the panel last year were approaching or had recently passed their six-month mark where they first qualify for incentives and they were very aware of the timing and rewards.

Channel Tests

During the household visits a technical test was carried out. The test protocol was:

1. Turn on television (if not already on)

2. Select a channel and let run for three minutes

3. The panel member was asked to set the volume at their normal listening level

4. In general panel members chose the channels but in some cases we asked for particular channels to be selected to ensure all encoded channels were tested

5. Where a home accessed television through YouTube they were asked to find live channels

6. The time and duration was logged by the auditor as well as the individuals present

7. Results were compared to K Research logs

All homes had channel tests using this protocol except one in Astana which had suffered an electricity outage prior to our visit.

The method of calculation is that each test channel and each individual

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counts for one test result which will be correct or incorrect. e.g. 4 homes x 3 channels x 1 individual = 12 results while 1 home x 3 channels x 2 individuals = 6 results.

A correct result can be either that an encoded channel was correctly identified as well as the individual watching or that a non-encoded channel was correctly not identified.

It is normal in most systems to see an error rate around 5% and up to 10% (noting that the more common global method is fixed meters using audio sampling, not watermarks). This is a normal variance between the performance of equipment in test settings and the reality of everyday panel usage.

Based on this the results were:

	Correct	Incorrect
Encoded	106	13
Not encoded - correct	16	0
Total	122	13
%	90%	10%

We conclude that the portable meter system is operating at similar levels to other measurement technologies.

In regard to the results we have two observations:

● All 23 channels were tested and all returned a positive result at least once, although more limited access in cable systems and subscription meant that some channels had low numbers of tests.

● One channel, KTK, accounted for 4 of the 13 errors which may indicate an issue with encoding. Further testing by K Research and the broadcast channel should be carried out to identify the cause of this issue.

Streaming

Five of the households, accounting for 30 test results (or 20%) were through YouTube because the homes reported that this was their normal method of viewing.

Where this occurred the home had generally switched entirely to YouTube viewing - it was either not possible or very difficult for them to connect to

an alternative linear platform.

The auditors have noted this in other markets. Once a home begins watching on YouTube (or other platforms) there is a strong tendency to continue using that platform exclusively. This is often done for children to access content.

Of the 30 YouTube tests the only channels which had encoded signals available and identifiable were Astana, Atameken Business and NTK. Khabar showed up in one test but not in another.

On the other hand Khabar24, Qazaqstan and Balapan were tested but did not have encoded signals.

If this sample is replicated in the entire panel it suggests that somewhere between 10 and 20% of total viewing in Kazakhstan is being conducted through YouTube primarily and possibly other platforms.

It is therefore important first that the linear channels consistently encode their signal to pick up any YouTube viewing.

Subsequently the channels may wish to consider strategic moves towards making content available as video on demand either in a dedicated player or through other platforms. In many other markets this is now considered a normal part of the overall viewing measurement.

In this case the market may wish to consider investing in non-linear measurement technology measuring router activity such as Kantar's Focal Meter.

We appreciate there is a natural desire to measure only what can be monetised and sold, however it has been the experience in other markets that allowing a large level of unknown viewing creates uncertainty and undermines the market. This is why some markets chose to measure non-advertising services which did not take part in measurement such as Netflix.

The experience has been that such measurement encourages them to eventually participate and also for OTT services to move towards advertising models as has happened with Netflix and Disney+.

Recommendations: Panel Management, Compliance and Validation

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Item	Status
Panel Records	Good
Panel Management	Good
Channel Identification	Overall acceptable. Watermarking of streaming signals would improve identification.
Coincidental Results	Good
Coincidental Survey	Change survey question Change re-contact process

Panel records are good and management is proactive and targeted at behaviours to improve compliance and reporting. There is a noticeable positive effect on households in areas which have a dedicated supervisor (noted in the QC section).

Channel identification could be improved but requires investigation between K Research and broadcasters to determine the cause of specific problems.

Channels with live streams should ensure that signals are encoded.

Compliance in coincidental studies is good but the questions should be standardised in line with common practice. Recontact should not be by appointment.

OPERATIONS AND SECURITY

K Research has modern facilities in the NurlyTau Business Complex in Almaty. The offices are in two sections of the same floor. There is physical access and exit control in the common lobby on the ground floor and separate ID card readers to get into the K Research offices.

A limited number of named people have access to the server room, which is a locked room within a card-entry area, and the entering of the server room is also logged. In the server room we see good protection of the production servers and monitoring tuners.

The team working with the identifiable panel data are filmed during the day to further ensure panel security. The panel team is in a separate area with its own card-access and only panel team members are authorised to enter.

Written policies covering IT security, Confidentiality and Personal Information security were provided which comply with standard practice. We were advised that an off-site backup is in place, but this was not inspected.

Many employees at K Research have long experience with running the TAM system, there seems to be very good stability in the company overall.

Overall the auditors see a well structured TAM service facility run by experienced staff.

Item	Status
Operations and Security	**Good**

SUMMARY

Overall the K Research system in Kazakhstan is well-managed, organised and reliable.

It operates generally in line with international standards and we confirm that it is suitable for use as a currency for trading and planning.

Nevertheless some improvements are possible and our recommendations are summarised below:

Area	Recommendation	Priority	Goal

Establishment Survey	Size should be increased and/or change to a mixed/CATI system.	Med	Ensure sufficiently large pool for panel recruitment.
Establishment Survey	Avoid street intercepts	Low	Street intercepts are not sufficiently random.
Panel Reporting	Monitor and improve individual frequency if possible	High	Improve continuity of reporting for long-term trends, campaign analysis, frequency, coverage etc.
Panel Reporting	Include 'on-holiday' status	Low	Align with international standards and avoid inflation of viewing
RIM Weighting Target Tolerance	Large reduction in RIM cells needed Leading to tolerance improvement	High	Some panel cells are too small and weighting does too much work. Fewer cells will result in more stable data.
Channel Identification	Investigate errors and rectify	Low	System is OK but check specific issues
Channel Identification	Watermark live streams	Med	Increase in viewing and longer-term consideration of

			non-linear viewing.
Coincidental Survey	Revise survey questions Change re-contact procedure	Med	Align with international standards. Avoid inflated results.

In addition to these specific recommendations we suggest the market should look at the possibility of monitoring streaming viewing on TV through YouTube and other OTT platforms.

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