

BANK CREDIT CARD DETAILS IN REGION WISE



CENTRAL BHOMENIA:

CASH CRT:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
cashcrt	90	674552.578	703570.4135	74162.8334

One-Sample Test						
Test Value = 665700						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
cashcrt	.119	89	.905	8852.5778	-138507.392	156212.548

CASH WITHDRAWAL:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
cash	90	883889.7889	595207.88776	62740.42022

One-Sample Test						
Test Value = 700000						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
cash	2.931	89	.004	183889.78889	59225.9103	308553.6675

INSIGHTS:

- In cash cash credit alternative hypothesis is rejected and null hypothesis is accepted .
- In cash withdrawal alternative hypothesis is accepted and null hypothesis is rejected.

EAST BHOMENIA:

Cash credit:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
cash crt	84	796161.435	798788.8620	87155.0101

One-Sample Test						
Test Value = 665700						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
cash crt	1.497	83	.138	130461.4345	-42886.375	303809.244

Cash withdrawals:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
cashw	84	873424.084524	696664.6798344	76012.3483177

One-Sample Test						
Test Value = 700000						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
cashw	2.282	83	.025	173424.08452	22238.58092	324609.5881

INSIGHTS :

1. In cash credit alternative hypothesis is rejected and null hypothesis is accepted.
2. In cash withdrawal alternative hypothesis is accepted and null hypothesis is rejected.



NORTH BHOMENIA:

CASH CREDIT:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
cash crt	61	823633.721	803663.6814	102898.5903

One-Sample Test						
Test Value = 665700						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
cash crt	1.535	60	.130	157933.7213	47894.105	- 363761.547

CASH WITHDRWAL:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
CASHW	61	777761.44426	603942.959930	77326.972246
		2	0	9

One-Sample Test						
Test Value = 700000						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CASHW	1.006	60	.319	77761.44426	23 76915.52990	- 232438.418431
					6	

INSIGHTS :

1. In cash credit alternative hypothesis is rejected and null hypothesis is accepted.
2. In cash withdrawal alternative hypothesis is rejected and null hypothesis is accepted.

NORTH MORAVIA:

CASH CREDIT:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
CASH CRT	117	772582.085	772055.4057	71376.5475

One-Sample Test						
Test Value = 665700						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CASH CRT	1.497	116	.137	106882.0855	-34488.160	248252.331

CASH WITHDRAWAL:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
CASHW	117	907112.9803	662377.57040	61236.828046
		42	64	6

One-Sample Test						
Test Value = 700000						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CASHW	3.382	116	.001	207112.9803	85825.7264	328400.234
				419	05	279

INSIGHTS :

1. In cash credit alternative hypothesis is rejected and null hypothesis is accepted.
2. In cash withdrawal alternative hypothesis is accepted and null hypothesis is rejected.

PRAGUE:

CASH CREDIT:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
CASHCRT	84	883238.512	796606.3779	86916.8816

One-Sample Test						
Test Value = 665700						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CASHCRT	2.503	83	.014	217538.5119	44664.330	390412.694

CASHWITHDRAL:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
CW	84	908966.538095	649104.4345981	70823.1001304

One-Sample Test						
Test Value = 700000						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CW	2.951	83	.004	208966.53809	68102.24042	349830.8357
					52	62

INSIGHTS :

1. In cash credit alternative hypothesis is accepted and null hypothesis is rejected.
2. In cash withdrawl alternative hypothesis is accepted and null hypothesis is rejected.

SOUTH BHOMEIA:

CASH CREDIT:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
CASHCRT	60	671719.75	816538.715	105414.695

One-Sample Test						
Test Value = 665700						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CASHCRT	.057	59	.955	6019.750	-204914.57	216954.07

CASHWITHDRAL :

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
CASHW	60	928502.195000	688800.9226637	88923.8167443

One-Sample Test						
Test Value = 700000						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CASHW	2.570	59	.013	228502.1950000	50566.048693	406438.341307

INSIGHTS :

1. In cash credit alternative hypothesis is rejected and null hypothesis is accepted.
2. In cash withdrawal alternative hypothesis is accepted and null hypothesis is rejected.

SOUTH MOROVIA:

CASH CREDIT:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
CASHCR T	129	796503.174	811548.0024	71452.8174

One-Sample Test						
Test Value = 665700						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CASHCRT	1.831	128	.069	130803.1744	-10578.433	272184.781

CASHWITHDRAL:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
CASHW	129	877028.74806	707293.756828	62273.7429238
		2	2	

One-Sample Test						
Test Value = 700000						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CASHW	2.843	128	.005	177028.7480	53809.50822	300247.9878
				620	8	96

INSIGHTS :

1. In cash credit alternative hypothesis is rejected and null hypothesis is accepted.
2. In cash withdrawal alternative hypothesis is accepted and null hypothesis is rejected.

WEST BHOMERIA:

CASH CREDIT:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
CASHCREDIT	57	1012466.316	894124.3481	118429.6630

One-Sample Test						
Test Value = 665700						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CASHCREDIT	2.928	56	.005	346766.3158	109523.192	584009.439

CASHWITHDRAWAL:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
CASHW	57	950107.8929	765219.40813	101355.78663
		82	76	32

One-Sample Test						
Test Value = 700000						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CASHW	2.468	56	.017	250107.8929	47067.85410	453147.9318
				825	8	57

INSIGHTS :

1. In cash credit alternative hypothesis is accepted and null hypothesis is rejected.
2. In cash withdrawal alternative hypothesis is accepted and null hypothesis is rejected.

Business Requirement

- ▶ Czech bank customers are withdrawing cash using their cards on an average of \$5000.
- ▶ Hypothesis testing need to be performed to validate this assumption.
- ▶ Type of Test: T-Test.
- ▶ Tools used: SPSS.

Test Values:

- ▶ Population Mean: 5000
- ▶ Confidence Interval Percentage: 95%
- ▶ H0 (NULL Hypothesis): Czech bank customers are withdrawing cash using their cards on an average of \$5000.
- ▶ H1 (Alternative Hypothesis): Czech bank customers are withdrawing cash using their cards on an average of more or less than \$5000.

Test Results:

► The test results are as follows.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
cardwdlt	682	3640.18	10510.752	402.478

One-Sample Test						
Test Value = 5000						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
cardwdlt	-3.379	681	.001	-1359.824	-2150.07	-569.58

Test Results Description:

- ▶ After performing the T-Test, the results are as follows.
 - ▶ As it is considered the confidence interval percentage as “95%”, the benchmark for significance will become 0.05.
 - ▶ As shown in the previous slide, the significance value is lesser than 0.05.
 - ▶ Hence **NULL Hypothesis is rejected.**

T-test For Cash With drawn In Central Region

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
cash wtdn	89	880064.70	597466.701	63331.344

One-Sample Test

	Test Value = 700000					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
cash wtdn	2.843	88	.006	180064.697	54206.96	305922.43

- T –test for Cash credited in the Central region can be verified by setting

$$H_0 = 700000/-$$

$$H_1 \neq 700000/-$$

- As significance of error of $0.06 \geq 0.05$ we can say that **accept the null hypothesis** and **reject Alternate hypothesis**.
- That is we can say the cash credited was above the value of **700000/-**
- But as per the standard error of **63331.344** **we can say the sample taken was not enough to judge**. Since as per the requirement we will say there is sufficient evidence to that $H_1 \neq 700000/-$.

Cash with drawn in prague region

- The T-Test for Prague region can be concluded by setting hypothesis as

$$H_0 = 700000/-$$

$$H_1 \neq 700000/-$$

- As the significance is **0.05** we can **reject null** hypothesis and **accept Alternate** hypothesis.
- As the mean value of **907855.43** is above the actual mean value we can conclude that there is enough proof for accepting Alternate hypothesis.

Cash Credited in Eastern region

- In Eastern region there is less sample of 84
And the standard error of 76920.704 is very high.
- The **significance value is 0 .026** is less than that of 0.05 as it is the limit for rejecting Null hypothesis.
- Therefore we **can reject null hypothesis** and **accept alternate hypothesis**.
- As there is enough proof for accepting alternate hypothesis as $H_1 \neq 700000/-$.

Cash Credited in Northern region

- In Northern region the significance value is $0.001 \leq 0.05$ and we can conclude that reject null hypothesis and **Accept Alternate hypothesis**.
- Because $N=177$ the standard error is 48515.766 which is very much higher value sine the sample is less.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
cash wtdn	177	860792.2	645460.2	48515.76

One-Sample Test

	Test Value = 700000					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
cash wtdn	3.314	176	.001	160792.282	65044.75	256539.81

Cash Credited in Southern region

- The significance is $0.00 \geq 0.05$, therefore we can **reject Null hypothesis** and accept alternate hypothesis.
- We can conclude that the cash credited in southern region is 894067.61 /- and which is more equal to actual mean of 700000 /- and there fore we can say there is evidence for proving $H_1 \neq 700000$ /-.

Cash Credited in Western Region

- In western region also there is more significance of $0.01 \leq 0.05$.
- Therefore we can **reject null hypothesis** and **accept alternate hypothesis** i.e. the actual value of 700000/- is true as it is the cash credited in western region.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
cash wtdn	56	962567.38	766288.353	102399.588

One-Sample Test

	Test Value = 700000					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
cash wtdn	2.564	55	.013	262567.375	57354.01	467780.74

T-test For Cash Credited In Central Region

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Cash crdt	681	797543.85	796228.182	30511.530

One-Sample Test

	Test Value = 666700					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Cash crdt	4.288	680	.000	130843.855	70935.72	190751.99

- T –test for Cash credited in the Central region can be verified by setting
 - $H_0 = 665700/-$
 - $H_1 \neq 665700/-$
- As significance of error is ≤ 0.05 we can say that **reject the null hypothesis** and **accept Alternate hypothesis**.
- That is we can say the cash credited was above the value of **665700/-**
- But as per the standard error of 30511.530 **we can say the sample taken was not enough to judge**. Since as per the requirement we will say there is sufficient evidence to that $H_1 \neq 665700/-$.

Cash Credited in prague region

- The T-Test for Prague region can be concluded by setting hypothesis as

$$H_0 = 665700/-$$

$$H_1 \neq 665700/-$$

- As the significance is **0.011** we can **reject null** hypothesis and **accept Alternate** hypothesis.
- As the mean value of **893296.82** is above the actual mean value we can conclude that there is enough proof for accepting Alternate hypothesis.

Cash Credited in Eastern region

- In Eastern region there is less sample of 84
And the standard error of 87155.011 is very high.
- The **significance value is 0.138** is more than that of 0.05 as it is the limit for rejecting Null hypothesis.
- Therefore we **can accept null hypothesis** and **reject alternate hypothesis**.
- As there is no enough proof for accepting alternate hypothesis as $H_1 \neq 665700/-$.

Cash Credited in Northern region

- In Northern region the significance value is $0.035 \leq 0.05$ and we can conclude that reject null hypothesis and **Accept Alternate hypothesis**.
- Because $N=178$ the standard error is 58548.723 which is very much higher value sine the sample is less.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Cash crdt	178	790077.31	781137.395	58548.723

One-Sample Test

	Test Value = 665700					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Cash crdt	2.124	177	.035	124377.315	8833.92	239920.71

Cash Credited in Southern region

- The significance is $0.125 \geq 0.05$, therefore we can **accept Null hypothesis** and reject alternate hypothesis.
- We can conclude that the cash credited in southern region is 756889/- and which is more equal to actual mean of 665700/- and there fore we can say there is no evidence for proving $H_1 \neq 665700/-$.

Cash Credited in Western Region

- In western region also there is more significance of $0.05=0.05$.
- Therefore we can **reject null hypothesis** and **accept alternate hypothesis** i.e. the actual value of 665700/- is true as it is the cash credited in western region.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Cash crdt	57	1012466.32	894124.360	118429.665

One-Sample Test

	Test Value = 665700					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Cash crdt	2.928	56	.005	346766.316	109523.19	584009.44