INCREASING HOSPITAL POS COLLECTIONS

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Introduction:

Holistic Health Systems (HHS) operates 39 hospital facilities and clinics. The executive team has been reviewing key metrics over the last year and identified a need to improve Point of Service Collections, simply known as POS (pronounced "P-O-S"). POS is a patient payment that is received within 7 days of discharge. Increasing POS is important for HHS because hospitals are 60% less likely to receive payment once the patient leaves the hospital. The cost of collecting on the patient's account continues to go up while the chance of actually collecting payment goes down if there is a delay in collecting the payment after the patient's discharge. Therefore, it is better to not delay collecting the payment.

Increasing POS reduces bad debts, provides a better cash position, reduces expenses, and increases patient satisfaction when conducted properly.

POS is calculated by dividing POS payments by the total patient cash collected. HHS has identified the industry median benchmark for POS as 13.6% and the top 10% POS benchmark as 41.4%. HHS's current POS performance is 35.6%, and the executive team has determined that a 5-percentage point increase is needed to stay competitive (target = 40.6%). A Lean Six Sigma team was formed.

POS is a metric that heavily relies on the Patient Access team or PA. PA is responsible for several tasks—patient scheduling, registration, and financial clearance. The "scheduling" tasks are typically completed by a centralized PA team for multiple hospital facilities. During scheduling, PA reps receive a doctor's order for a patient. The order is like a permission slip for specific medical services the doctor deems necessary. The doctor or even the patient related to the order can call scheduling to reserve an appointment for the services that correspond to what is written in the order. PA reps need to verify that the order is complete and accurate, coordinate time for services, and provide patients with pre-service instructions. After the patient's information is logged into the scheduling system, it will be queued up for the PA registration team to complete the registration process. The PA will call the patient and confirm their identity and collect demographics such as address, family, emergency contact, etc. The patient's health insurance provider(s) will also be confirmed as part of the PA registration process. PA registration can be completed at a hospital facility or by a centralized team. Lastly, PA Financial Clearance will verify patient health benefits to ensure they exist and to determine if the procedure or service for the patient is covered. If authorization is required, the PA Financial Clearance will request authorization for services from the patient's health insurance provider. Services performed without authorization lead to rejected claims. Also, during PA Financial Clearance, the PA rep will counsel the patient about their liability (how much their insurance provider says they need to pay for the services) and collect the payment. Any payment received is considered POS since it's before 7 days post-discharge. Financial clearance can also be performed at the hospital facilities or by a centralized team.

Summary patient cash data for HHS's 39 hospital facilities for a year is presented in Table 1. The table also indicates if the PA team for each facility is centralized or not.

Table 2 provides an overall monthly trend for POS performance.

The team identified the facilities with POS performance above the target and researched the activities they have in place, hoping to find commonalities or key drivers. They are:

- Ensure proper patient education on benefits and liability
- Ask for payment
- Have a financial counselling policy
- Reduce the number of patients that leave without financial clearance
- Have accurate tools to help estimate patient liability or responsibility
- Utilize devices that allow patient collections at the patient's bedside

Table 1: 2015 POS by Facility				
Facility	POS Payments	All Patient Payments	POS%	Centralized Teams
FVR	$13,72,015	$68,60,076	20%	Yes
LAK	$13,01,746	$33,48,748	39%	Yes
PLA	$29,64,730	$68,54,164	43%	Yes
CGH	$6,25,428	$17,09,452	37%	Yes
FLO	$8,49,646	$21,41,211	40%	Yes
DEL	$23,24,347	$78,24,857	30%	Yes
GSM	$26,21,784	$97,10,312	27%	Yes
PBG	$17,13,107	$60,62,173	28%	Yes
SMH	$59,36,564	$1,03,55,241	57%	Yes
HIA	$12,15,112	$22,50,807	54%	Yes
PGH	$22,34,134	$53,95,099	41%	Yes
MAN	$13,11,286	$36,11,438	36%	Yes
MOD	$29,97,636	$74,94,091	40%	Yes
WBO	$22,73,401	$87,43,852	26%	Yes
LOM	$23,58,653	$81,33,287	29%	Yes
BAR	$14,57,038	$52,86,184	28%	Yes
DES	$26,76,236	$95,81,654	28%	Yes
IND	$10,76,377	$29,79,026	36%	Yes
DHW	$21,45,483	$52,49,186	41%	Yes
ECH	$24,28,480	$78,33,806	31%	Yes
HHH	$22,53,084	$70,80,683	32%	Yes
SCH	$5,48,628	$17,39,024	32%	Yes
GBH	$24,55,353	$72,62,268	34%	Yes
BMC	$34,86,532	$1,39,46,130	25%	Yes
CYF	$45,34,470	$1,07,96,357	42%	No
DHF	$24,16,085	$46,24,894	52%	No
FRH	$21,82,243	$69,29,016	31%	No

HNM	$56,00,722	$1,24,46,048	45%	No
LPX	$33,79,727	$91,34,398	37%	No
NMC	$19,46,885	$43,78,487	44%	No
PMC	$28,85,804	$91,88,848	31%	No
PPH	$19,69,620	$39,39,240	50%	No
PRV	$60,15,807	$1,22,53,503	49%	No
SES	$19,40,017	$49,71,199	39%	No
SFH	$32,54,250	$78,50,558	41%	No
SIE	$30,51,755	$69,99,804	44%	No
SRM	$26,58,292	$1,09,09,840	24%	No
SVM	$16,06,482	$65,73,344	24%	No
TWI	$12,97,858	$52,25,755	25%	No

Table 1: POS by Facility

Table 2: 2015-2016 Payments Trending

	POS Payments	All Patient Payments
Jan-14	$81,98,401	$2,21,05,614
Feb-14	$64,09,335	$2,04,49,785
Mar-14	$74,52,507	$2,53,57,473
Apr-14	$78,53,058	$2,43,20,414
May-14	$72,77,931	$2,48,15,250
Jun-14	$89,75,992	$2,03,09,240
Jul-14	$73,49,353	$2,49,04,346
Aug-14	$68,04,829	$2,33,49,092
Sep-14	$78,98,465	$2,08,29,620
Oct-14	$78,88,816	$1,85,06,142
Nov-14	$58,34,679	$1,73,86,881
Dec-14	$90,21,591	$1,86,59,237
Jan-14	$87,17,536	$1,89,56,764
Feb-14	$66,23,228	$1,90,08,749

Mar-15	$76,96,772	$2,29,71,163
Apr-15	$83,12,773	$2,34,37,612
May-15	$90,28,170	$2,13,58,646
Jun-15	$74,36,050	$2,21,68,016
Jul-15	$78,52,119	$2,19,71,590
Aug-15	$69,33,100	$2,36,50,610
Sep-15	$86,23,086	$2,68,60,403
Oct-15	$78,50,627	$2,13,46,585
Nov-15	$76,91,110	$2,30,04,295
Dec-15	$86,02,245	$2,29,39,623

Table 2: Payments trending

Exercise 1:

- Process Stability Using the data given in Table 2, determine if the POS performance is stable using a control chart.

- Explain why you used the type of control chart you selected.

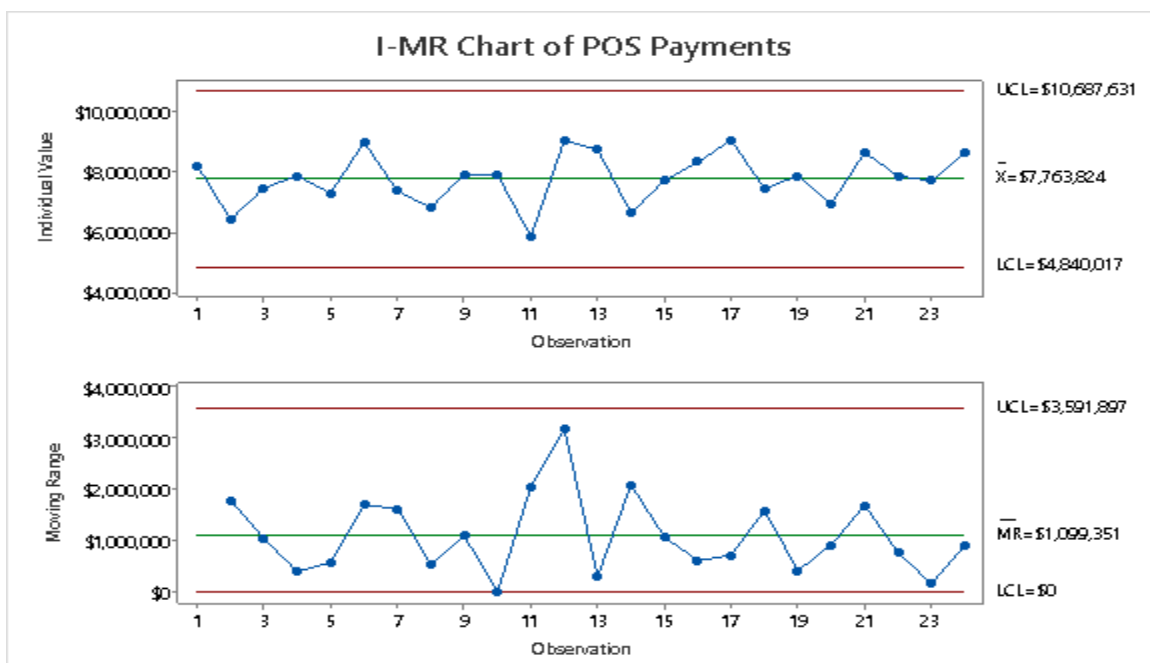**Before checking the stability of the data, normality should be checked.**
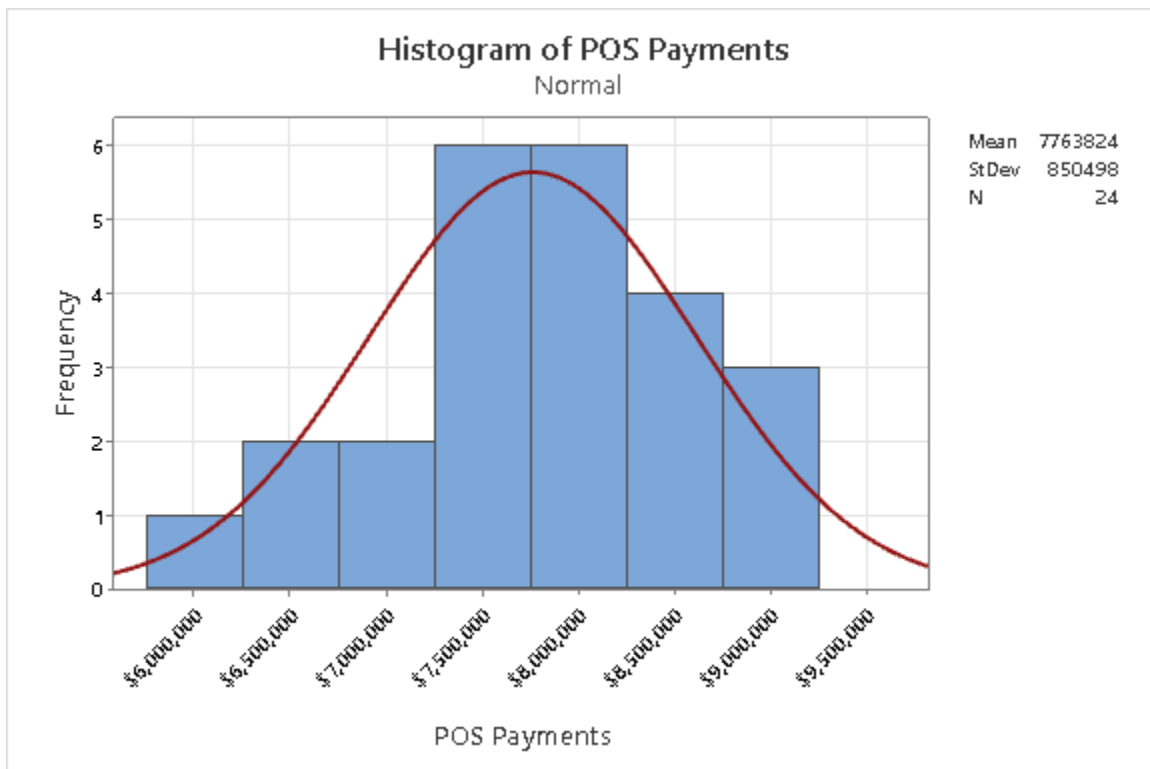
Graph 1: Normality using Histogram bell curve
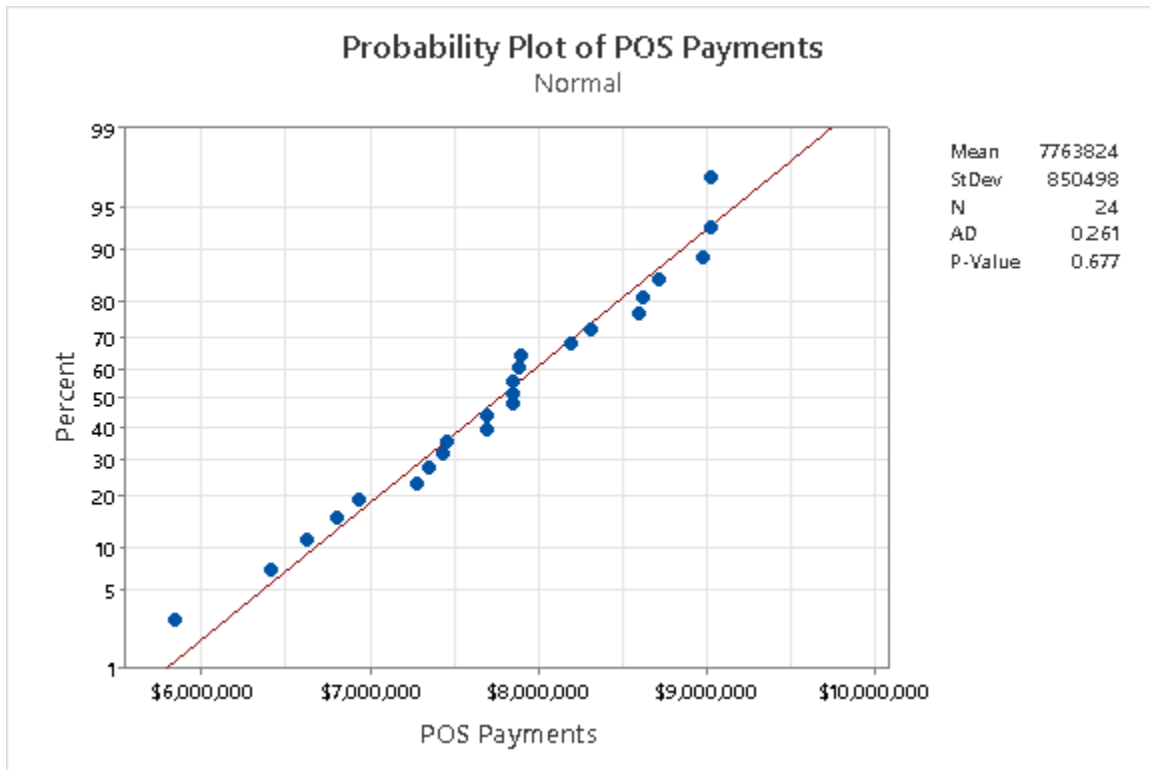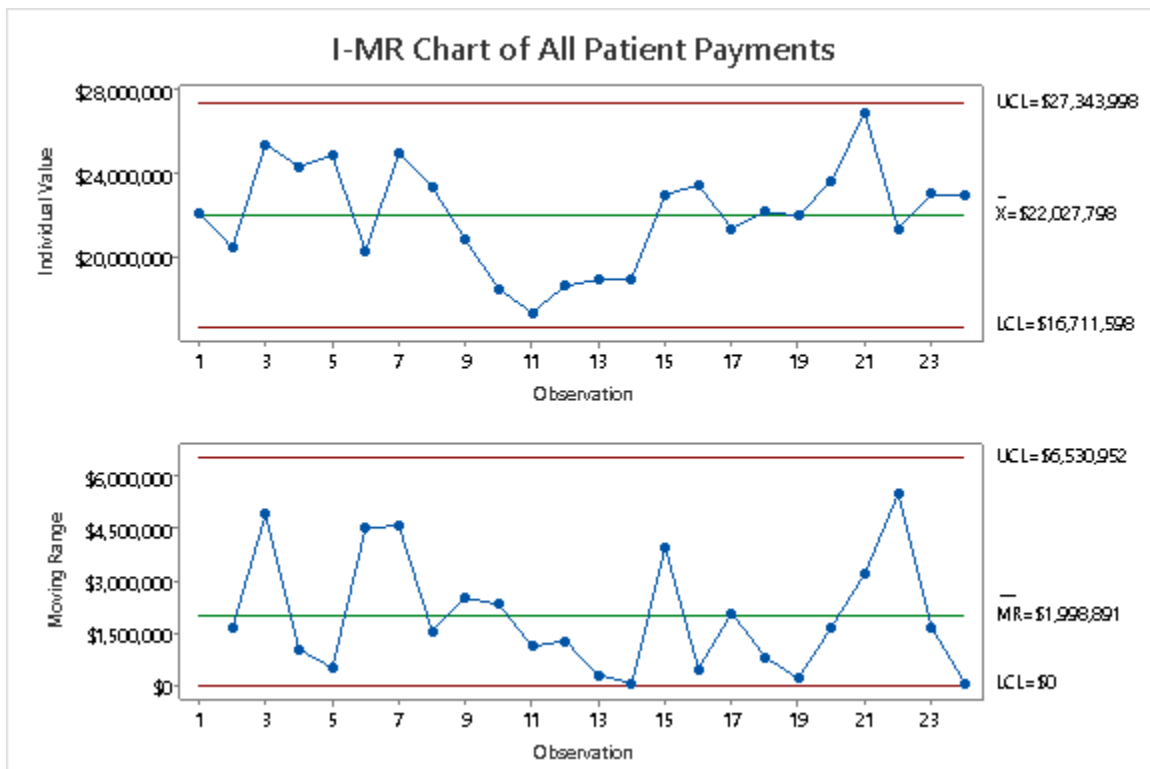
Graph 2: Normality using Anderson-Darling test

Provided Data is checked for normality through the Histogram and Anderson-Darling test for POS Payments --- Provided Data is Normal (P-Value >0.05) P-Value is 0.677.

Now, check for the Stability.

Graph 3: I-MR Chart of POS Payments

Graph 4: I-MR Chart of All Patient Payments

- The Individual Value plot of the I-MR charts suggests that the POS performance is stable with time for both POS Payments and All Patient payments. However, the Moving Range chart suggests some variations in the process. Specifically, the MR Chart for POS payments reveals an out-of-control process for the month of October as the point lies on the LCL. Furthermore, the MR Chart reveals that there was a sharp rise in the average MR for the month of December. This calls for an investigation. Also, the MR Chart for Patient payments indicated an out-of-control process for the months of Feb-15 and Dec-15.
- Type of Control Chart: I-MR Chart – This is used because this chart is most suitable for data that is continuous with a subgroup size of one.

Exercise 2:

Scope Opportunity Using the data given in Table 1, how would you scope the focus area of the project?

- From the provided project details understand Holistic Health Systems (HHS) operates 39 hospitals and clinics and the current POS performance of HHS is 35.6% and executed team has determined that a 5%-point increase is required to state HHS' competitive target (40.6%).
- As data provided in Table 1 (2015 POS by facility) shows that out of 39 hospitals /clinics 13 facilities are above the POS targeted % (40.6%).
- So, the Scope to set these 13 facilities above the targeted POS% as a control benchmark and the rest of the facilities needs to be analysed/investigated for POS% increase.
- Hypothesis testing needs to be conducted for facilities with POS percentage Above the targeted level have the centralized team or not.
- Testing should be conducted to check the association between the POS collection team and centralized team and to check association is practically significant or not.

Exercise 3:

Testing a Theory Use the data from Table 1 and conduct a hypothesis test to determine if centralized teams impact POS collections.

Checking if centralized teams impact POS collections. This is checked using One-way ANOVA
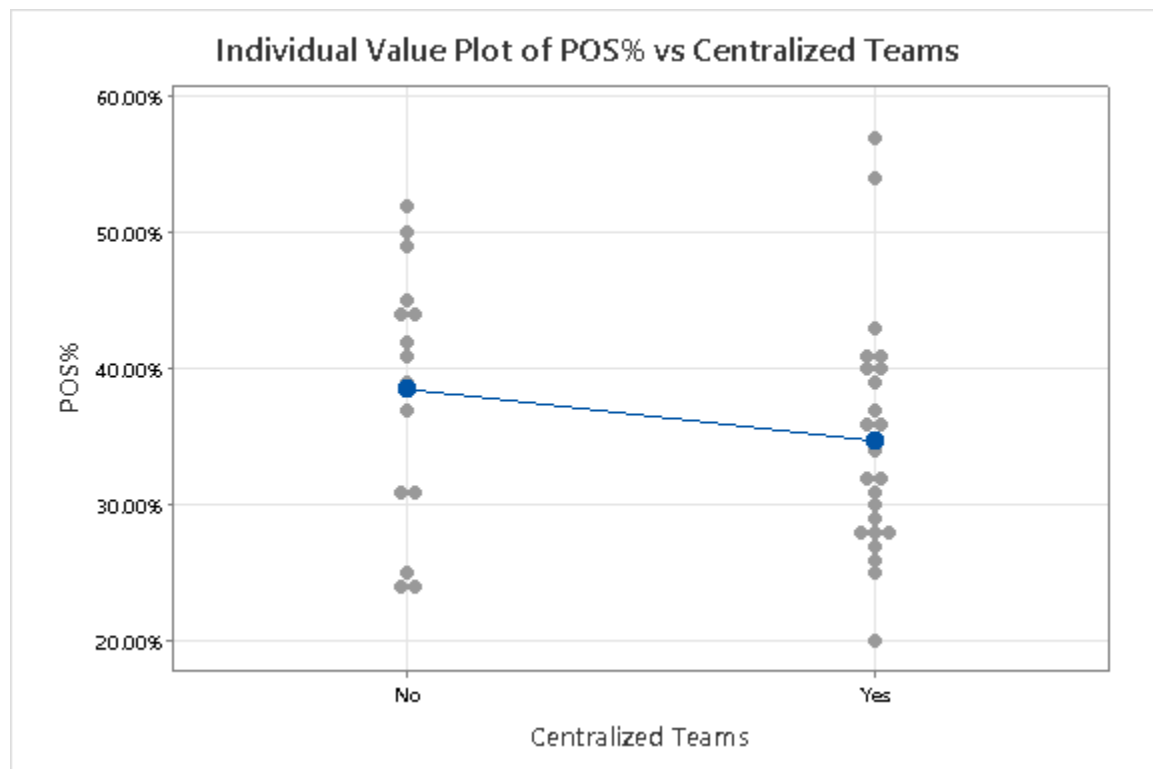
Graph 5: ANOVA using Individual Value Plot

If you see the average and difference between the Centralised and not centralised.
Here, it clearly says there is some difference and they are not the same.
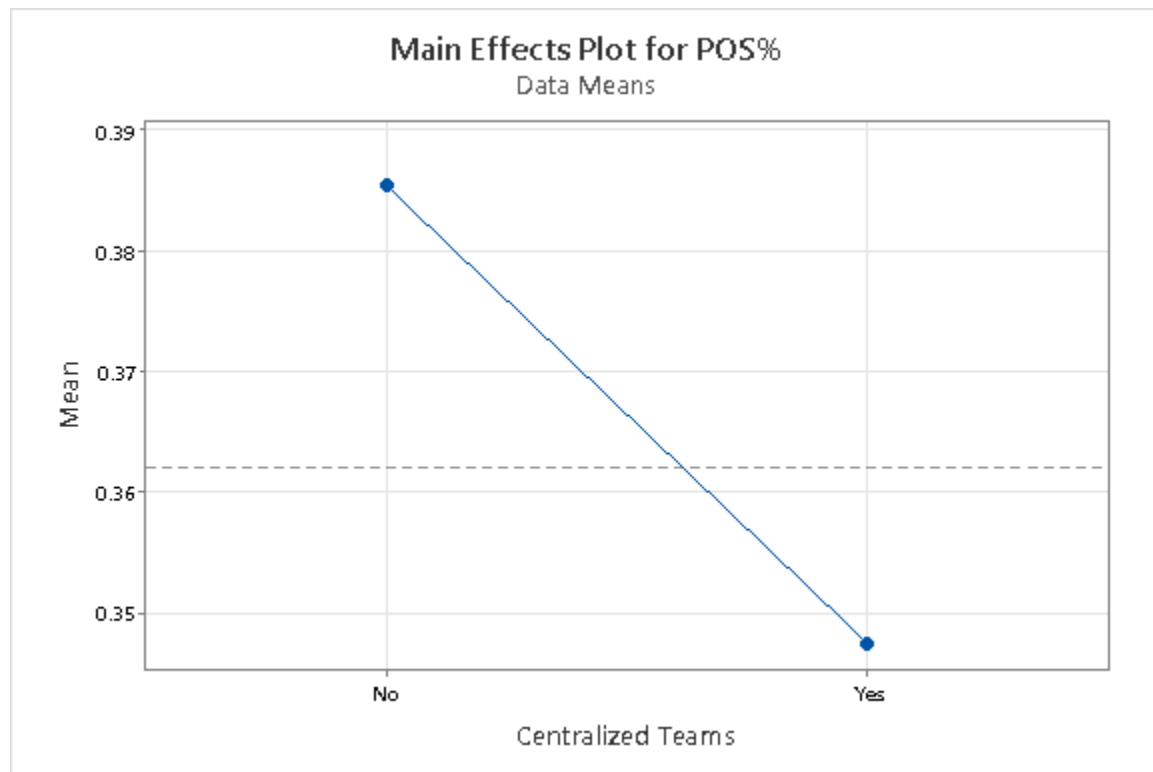
Graph 6: Main Effects Plot

This graph shows us that centralised teams to a very large extent impact POS collection.
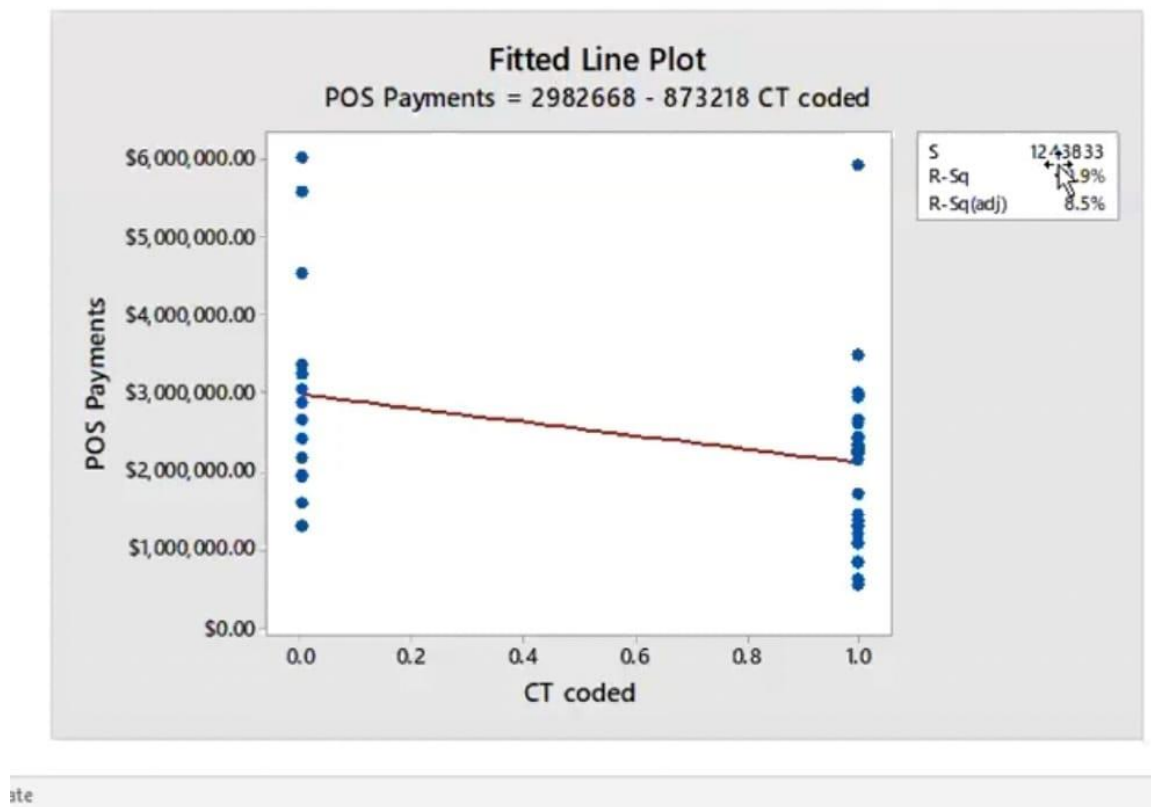

Correlation test:

Ho: r = 0; no correlation

H1: r ≠ 0; there is a correlation

Pearson correlation of CT coded and POS Payments = -0.331

P-value = 0.040

A Pearson correlation r = -0.331 implies there is a weak negative correlation between centralised teams and POS Collections. A P-value of 0.04 indicates that this association is statistically significant and so we reject the null hypothesis.

Graph 7: Fitted Line plot for regression analysis

Simple Linear regression is further done to check whether there is a correlation or not.

It is done between POS payments and CT codes.

The regression equation is:

POS Payments = 2982668 – 873218 CT codes

S = 1243833 R-Sq = 10.69% R-Sg(adj) = 8.5%

Analysis of Variance

Source   DF   SS   MS   F   P

Regression 1   7.03855E+12 7.03855E+12 4.55 0.040

Exercise 4:

Solution Categories Based on the information provided, what could be the affinity categories for the key drivers that impact POS performance?

POS Performance		
Finance	**Team**	**Environment**
Have a financial counselling policy	Ask for Payment	Have accurate tools to help estimate Patient Liability or Responsibility
	Have proper patient education on the benefits and liability	Utilise devices that allow patient collections at the patient's bedside
	Reduce the number of patients that leave without financial clearance	

Table 3: Affinity Diagram