



University of St.Gallen

Major Betriebswirtschaftslehre

Pflichtwahlfach

4,166,1.00 EbCA - Excel-basierte Controlling-Anwendungen

Regression – Beispiel Hotelpreise

HDF, 12ed, Problem 12-26, Daily Room Rates

- ❖ In an advertisement in a San Francisco newspaper, three hotel chains published their weekend and weekday daily room rates for various cities in California.

Hotel	City	Daily Rate Weekend	Daily Rate Weekday
Westin	Palo Alto	149.00	319.00
Westin	Santa Clara	89.00	239.00
Sheraton	San Francisco (airport)	109.00	219.00
Sheraton	Sunnyvale	89.00	209.00
Four Points	Pleasanton	75.00	169.00
Four Points	Sunnyvale	89.00	209.00

- ❖ Weekend rates required Friday and/or Saturday night stay.

HDF, 12ed, Problem 12-26, Daily Room Rates – Forts.



Required

1. Are there differences in incremental costs to hotels for weekend stays compared with weekday stays?
2. Explain the reason(s) why hotels charge lower rates for weekend stays compared with weekday stays.
3. In the same advertisement, two hotels published their room rates for Anaheim (where Disneyland is located), and one hotel published its room rate for Fisherman's Wharf in San Francisco (a popular tourist attraction). Interestingly, the weekend rates in each of these three cases were the same as weekday rates. Explain how this situation differs from the one in requirement 2.



HDF, 12ed, Problem 12-26, Daily Room Rates

Lösungsvorschlag Intro

- ❖ Sind die Weekend- und Weekday-Zimmerpreise wirklich unterschiedlich?

Hotel	City	Daily Rate Weekend	Daily Rate Weekday
Mittelwert		100.00	227.33
Standardabweichung		26.34	50.37

- ❖ **Alle folgenden «Tests» zeigen, dass ein statistisch signifikanter Unterschied besteht!**

- ❖ Regression: Weekend = - 10.2 + 0.485·Weekday

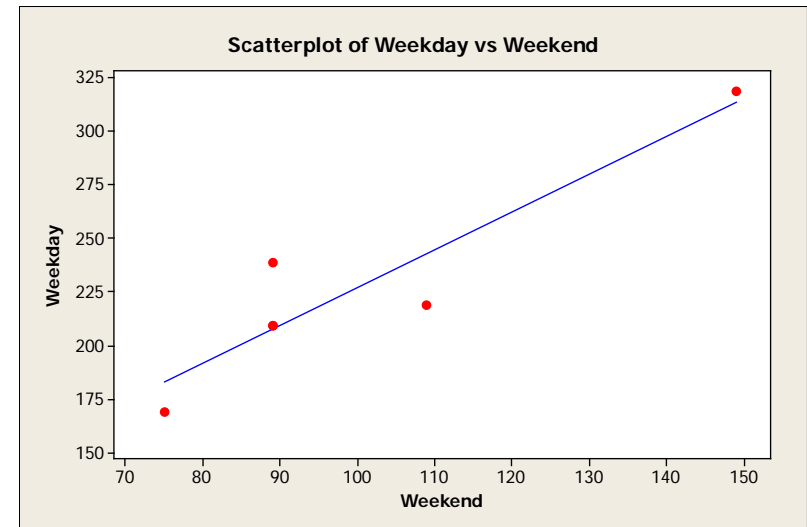
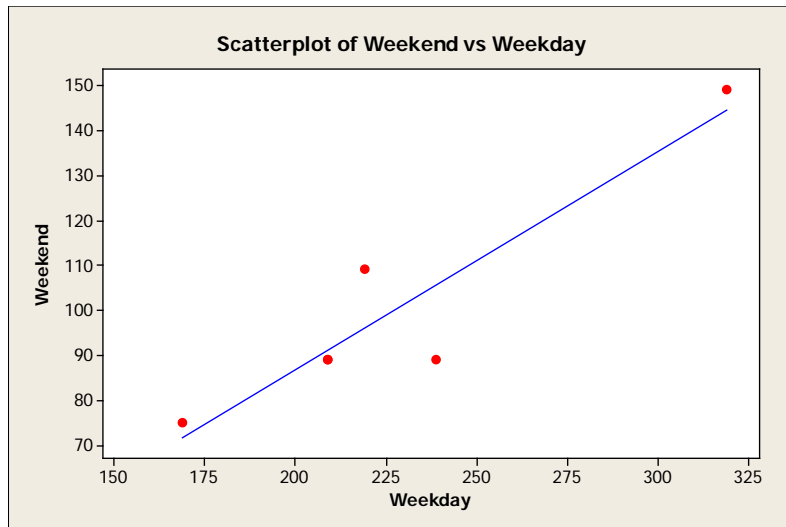
Predictor	Coef	SE Coef	T	P
Constant	-10.23	22.75	-0.45	0.676
Weekday	0.48489	0.09807	4.94	0.008
S = 11.0446 R-Sq = 85.9% R-Sq(adj) = 82.4%				

HDF, 12ed, Problem 12-26, Daily Room Rates

Lösungsvorschlag Intro

❖ Regression: $\text{Weekday} = 50.1 + 1.77 \cdot \text{Weekend}$

Predictor	Coef	SE Coef	T	P
Constant	50.10	36.87	1.36	0.246
Weekend	1.7723	0.3585	4.94	0.008
S = 21.1156 R-Sq = 85.9% R-Sq(adj) = 82.4%				



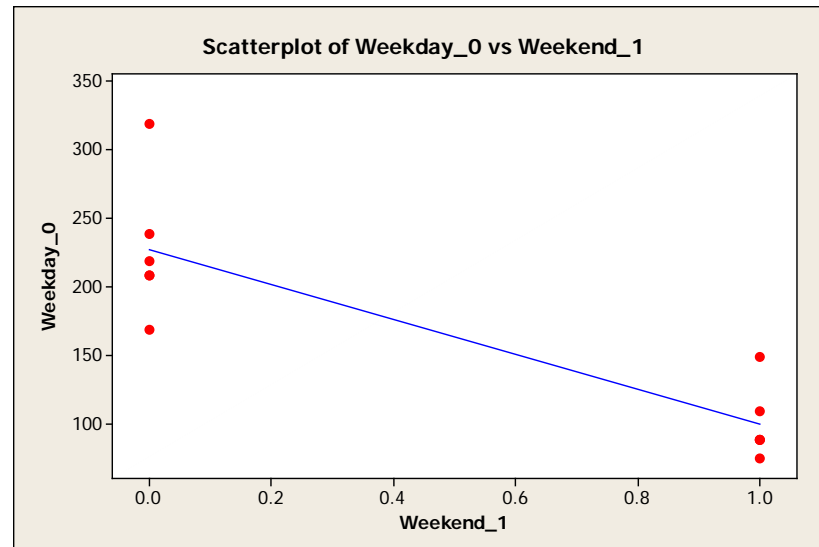
HDF, 12ed, Problem 12-26, Daily Room Rates

Lösungsvorschlag Intro

❖ Regression mit Dummy (1 = Weekend; 0 = Weekday):
 $\text{Weekday}_0 = 227 - 127 \cdot \text{Weekend}_1$

Predictor	Coef	SE Coef	T	P
Constant	227.33	16.41	13.86	0.000
Weekend_1	-127.33	23.20	-5.49	0.000

S = 40.1912 R-Sq = 75.1% R-Sq(adj) = 72.6%



HDF, 12ed, Problem 12-26, Daily Room Rates

Lösungsvorschlag Intro

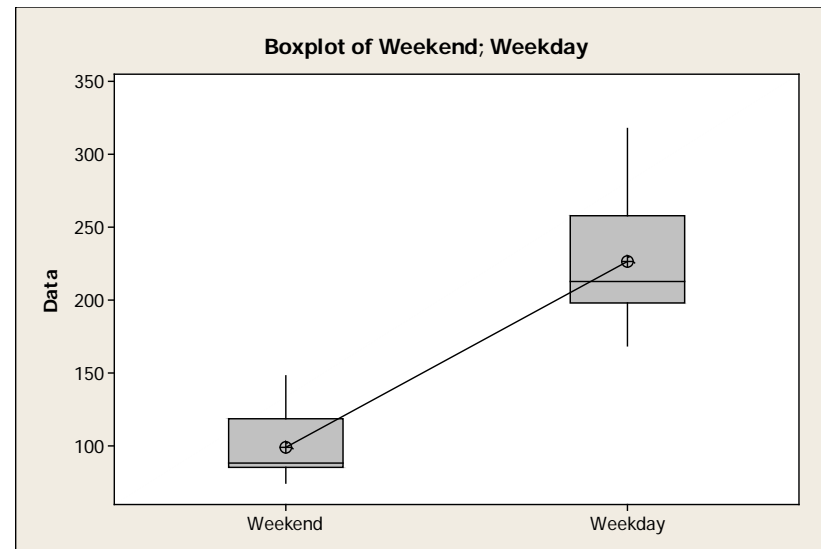
❖ t-Test bezüglich unterschiedlicher Mittelwerte bei unterschiedlichen Varianzen:

$$\text{Difference} = \mu (\text{Weekend}) - \mu (\text{Weekday})$$

Estimate for difference: -127.333

95% CI for difference: (-182.203; -72.464)

T-Test of difference = 0 (vs not =): T-Value = -5.49 P-Value = 0.001 DF = 7



HDF, 12ed, Problem 12-26, Daily Room Rates

Lösungsvorschlag für 1.

- ❖ Most of the costs of running a hotel are fixed relative to the number of guests in the hotel.
- ❖ The variable costs of each guest are a relatively minor part of the total costs and relate mainly to linen services and perhaps a small portion of utilities. Room cleaning could be either fix or variable, depending the employment contract.
- ❖ Assuming there are no special overtime and/or weekend compensations to the employees of the hotel, the incremental costs of a weekend guest are no different from the incremental costs of a weekday guest, and they are small, in any case.

HDF, 12ed, Problem 12-26, Daily Room Rates

Lösungsvorschlag für 2.

- ❖ **Business travelers** predominantly stay on a Sunday through Thursday basis. They usually return home after their business is conducted during weekdays. **They are price insensitive** because they must conduct their business during weekdays and their travel costs are reimbursed to them by their companies. Hotels earn higher operating income by charging business travelers higher prices because higher prices have little effect on business travelers' demand for hotel stays.
- ❖ In contrast, **leisure travelers who are paying for their own hotel rooms are more sensitive to the hotel room rates.** They may make their travel plans in a way that enables them to take advantage of lower weekend room rates. This may be done either by “mini” vacations taken during the weekends only, or extending their stay over the weekend because of lower rates. Charging lower rates stimulates demand among leisure travelers and increases contribution margin and operating income.
- ❖ **The hotels also tend to be less busy during weekends when business activity is low.** Therefore, during “off-peak” periods, hotels often reduce their room rates to attract customers. Even at reduced rates, hotels can cover their variable costs and generate contribution margin. Since fixed costs do not increase, any increase in contribution margin contributes to higher profits.

HDF, 12ed, Problem 12-26, Daily Room Rates Lösungsvorschlag für 3.

- ❖ The hotels located in Anaheim and San Francisco's Fisherman's Wharf cater primarily to people who are traveling for pleasure and to visit tourist attractions.
- ❖ Therefore, the occupancy rate in those hotels does not go down during weekends.
- ❖ For this reason, the hotels can charge the same rate both during weekdays and weekends.