Catering Benchmark of Swiss Hospitals

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Abstract
Switzerland's healthcare system is, according to the Organisation for Economic Co-operation and Development (OECD) ranking, one of the most expensive in the world. These high costs are related to an excellent healthcare system which is perceived as patient-friendly and easily accessible. In order to gain more transparency, as well as to enhance efficiency and effectiveness, Switzerland introduced the DRG based remuneration DRG (Diagnosis Related Group) system in 2012. This remuneration system for hospital financing with lump sum compensation payments is called Swiss DRG, because the country-specific factors were taken into account. According to the European understanding, Facility Management (FM) also contains soft factors, i.e. services, and account for one third of the total hospital costs. Of these, catering costs rank second. In addition, catering is an important image factor for the hospital. To enhance transparency in order to be more efficient and effective within the catering service, a benchmarking platform for Swiss hospitals has been developed. This paper provides findings from 23 benchmarking key figures based on 39 hospitals. The methodology is based on a multi-method quantitative study design based on the pragmatism paradigm conducted via survey research with the FM departments in these hospitals. Data collection was done with a benchmarking platform mainly based on a quantitative questionnaire followed by unstructured interviews. The results show for the first time a comprehensive view of the current situation of Swiss hospital catering and trends spanning multiple hospitals are identified.

Keywords: Benchmark, Catering, Facility Management, Healthcare, Hospital

Introduction & Background
This paper is a follow-up to the paper by Hofer, Honegger, and Züger (2013) with the title " A Method to Benchmark Swiss Hospital Catering". Based on the method developed, this paper presents benchmarking results from 39 Swiss hospitals.
In 2013, Switzerland had 113 acute hospitals, 53 psychiatric hospitals and 43 rehabilitation clinics (Bundesamt für Statistik, 2015). All of them, as well as homes for the elderly, are potential users of the benchmark platform.

Before 2012, each of the 26 cantons in Switzerland had a slightly different way to finance their health care system (Esmail, 2013; Interpharma, 2014). Regarding hospitals, this leads to private and public institutions, which were paid in different ways (Esmail, 2013).

In January 2012, Switzerland introduced a new remuneration system for hospital financing with lump sum compensation payments called Swiss Diagnosis Related Group (Swiss DRG) (Oggier,

2010; SwissDRG, 2013a, 2013b). The new system was implemented to gain more transparency, as well as to make it possible to compare institutions with each other in order to enhance efficiency and effectiveness as well as to reduce costs (Busato & von Below, 2010; Esmail, 2013; Oggier, 2010; SwissDRG, 2013a, 2013b).

According to the European Committee for Standardisation, Facility Management (FM) is defined as the: "integration of processes within an organisation to maintain and develop the agreed services which support and improve the effectiveness of its primary activities" (CEN, 2006 p. 5). Based on this definition, support processes can be summarised as FM including both hard and soft FM services. As described by Hinks, Egbu, Docherty, Hoy, Haggarty & Liyanage (2003) as cited in Liyanage and Egbu (2008, p. 23), hard services deal with the management and maintenance of property, whereas soft services deal with the management of support services.
Based on Gelnay, (2002) as cited in Shohet and Lavy (2004) p. 212, one of the key factors in providing successful healthcare services is FM. FM is responsible for about 30% of the total costs of a hospital (Lennerts & Janish, 2012; Zehnder, 2012). In order to provide excellent service as well as to enhance efficiency and effectiveness, Facility Managers need tools like this benchmark platform.

According to Kearns, D. T. as cited in Camp (1989, p. 10): "Benchmarking is the continuous process of measuring products, services and practices against the toughest competitors or those companies recognized as industry leaders." Both benchmarking food services as well as benchmarking within the healthcare sector are very rare (Bright, Kwon, Bednar, & Newcommer, 2009; Massheder & Finch, 1998). A comparable benchmark for catering in hospitals with such detailed analyses is lacking. In addition, at least for Switzerland, an overall benchmarking possibility for this service in healthcare institutions is certainly breaking new ground.
The benchmark was developed for the service area of catering, as it is one of the most cost-intensive services and one of the most essential factors when developing a positive image of the hospital (Aden & Schneider, 2012; Lennerts, 2009; von Eiff, 2012). Food provision in healthcare needs to fulfil specific requirements (Li-Jen Hwang, Desombre, Eves, & Kipps, 1999) as different stakeholders are involved in the process delivery along with different customer segments. Normally, hospital catering is provided not only for patients, but also for other customer groups like staff, guests, and external customers, such as day care centres, nursing homes and home care institutions (Arens-Azevêdo & Lichtenberg, 2011).
This benchmark requires 23 base numbers, out of which the different key figures are calculated. This paper shows on the one hand results based on numbers from the year 2013 and on the other hand how applied research generates added value for FM practitioners in Swiss hospitals.

Methodology Applying The Method Developed To Benchmark Swiss Hospital Catering

Research question

Based on the situation described above, the leading research questions were:

- Will the catering benchmark achieve success in practice?
- Which conclusions can be drawn from the different key figures?

The aim of this research was to investigate if the method developed to benchmark Swiss hospital catering is applicable and useful for Facility Managers, who are responsible for the catering processes in Swiss hospitals.

Quantitative survey design
To achieve the aim mentioned above, a descriptive survey research design with a pragmatic approach was applied. Based on Wilson (2010, p. 308) a survey is defined as: "A method used to collect responses from research participants, e.g. email, fax and post". As a lot of numbers were collected with the online benchmark platform, it is a descriptive research design. Because this benchmark tool is used by FM practitioners, a pragmatic approach was chosen. According to (Robson (2011, p. 28)), within pragmatism "the central idea is that the meaning of a concept consists of its practical implications."

Sampling
Based on the fact that healthcare institutions from different segments (acute, psychiatric, rehabilitation as well as home for elderly) can participate in the benchmark, a convenience sampling strategy is applied.

The participants in the year 2014, who benchmarked their figures from 2013, can be clustered according to their segment as shown in table 1:

Table 1: Benchmark Participant 2014

	Acute hospitals	Psychiatric hospitals	Rehabilitation clinics	Home for elderly
Number of participants	33	1	4	1

Data collection and analysis
The benchmark platform has been developed based on a Case Study with a multi-method approach for qualitative studies as described in the previous paper (Hofer et al., 2013). The definitions of the key figures were developed based on data collected with semi-structured interviews, documents research and structured observations. The coding strategy applied came from accounting structures as well as process steps. The benchmark includes 23 base numbers which then lead to 23 key figures. Twenty-two of the 23 base numbers could be taken from annual reports, cash systems, menu ordering systems and other accounting reports. The missing number is the "Cost of Meals per Patient per Day". This number needed to be calculated by a specific method, which is described in detail in Hofer et al. (2013). The numbers include turnover data, staff data and floor space measurements.

To test the developed method with FM practitioners, the benchmark was set up as an online platform, where each participating healthcare institution had its own login. For data collection, the FM filled in the 23 basic numbers into a specific form on the online benchmark platform. The required data was taken from annual reports, cash systems, menu ordering systems and other accounting reports. After data collection, all numbers went through a validation process before they were analysed in a descriptive way. The key figures are defined to form a reflection of each other to ensure the quality of the basic numbers.

Findings

Regarding the first research question it was interesting to see that 39 healthcare Institutions in Switzerland participated in 2014 in this benchmarking. As shown above, almost 30% of all acute hospitals in Switzerland took part, which is quite a success. The other categories of healthcare institutions were not as enthusiastic or did not yet see the value being added.

Regarding the second research question, the key figures are shown and explained following the clustering as listed: restaurant, patients, space, staff, food costs and turnover. These key figures are a selection out of the benchmark. Values which are shown 0.00 are missing values, and means the participating institution was not able to provide the basic number needed to calculate this key figure.

Key figures restaurant

Figure 1 shows the daily seat turnover in the restaurant, where both staff members and guests are served. It shows how high the occupancy rate and the number of visitors are. The formula of the key figure is the following: daily seat turnover = [average guest number per day] / [number of seats in restaurant]. The average daily seat turnover is 3.23, the minimum is 1.53 and the maximum 7.06.

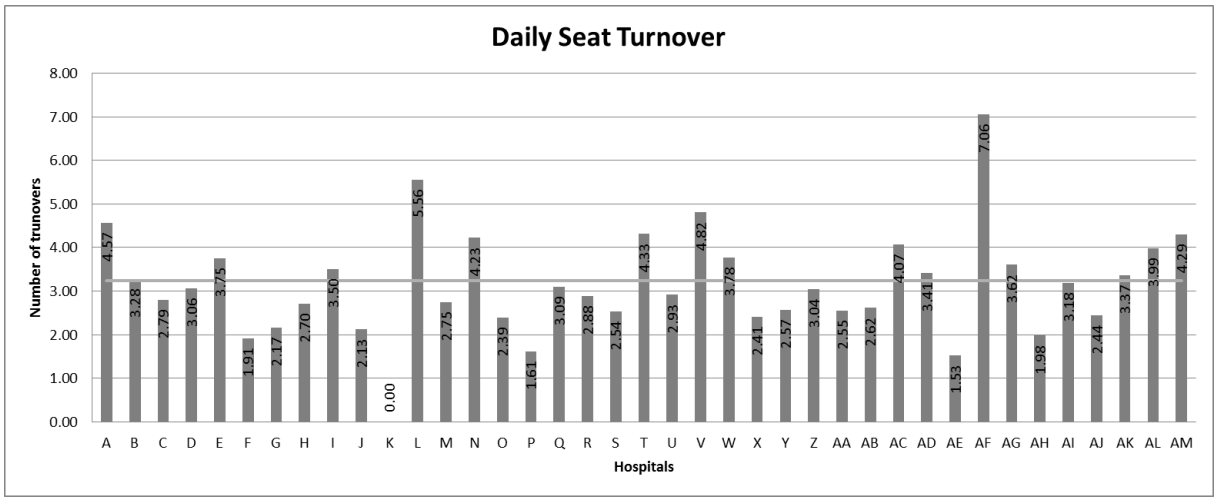

Figure 1: Daily Seat Turnover

Figure 2 shows the key figure of restaurant turnover per transaction in CHF. It provides indications about the price structure in the restaurant and gives hints about the classification of guest type. The formula is: restaurant turnover per transaction in CHF = [total catering turnover per year] / [number of transactions per year]. On average a transaction is about CHF 7.07.

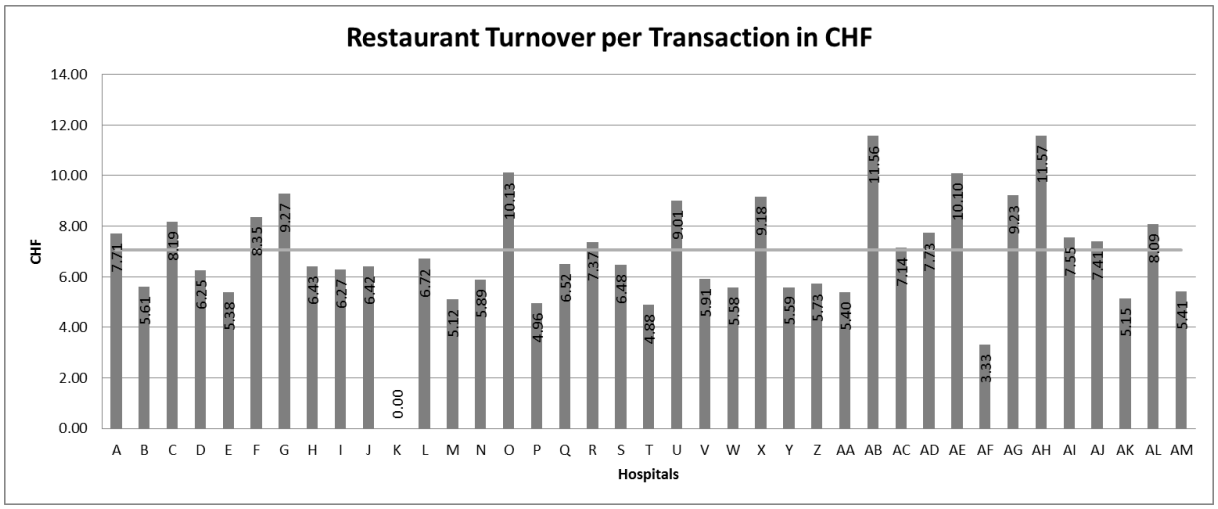

Figure 2: Restaurant Turnover per Transaction in CHF

Key figure patients

As shown in figure 3, the average costs of meals per patient per day is CHF 37.12, the minimum is CHF 23.72 and the maximum is CHF 51.24. These figures show that the cost range is quite wide. This key figure can be an indication about what catering options healthcare institutions provide to their patients. It is calculated with a specific data collection, as mentioned above, as no or not a standardised calculation of these costs is currently in place in Swiss healthcare institutions. Patient catering is a top priority customer segment in healthcare institutions.

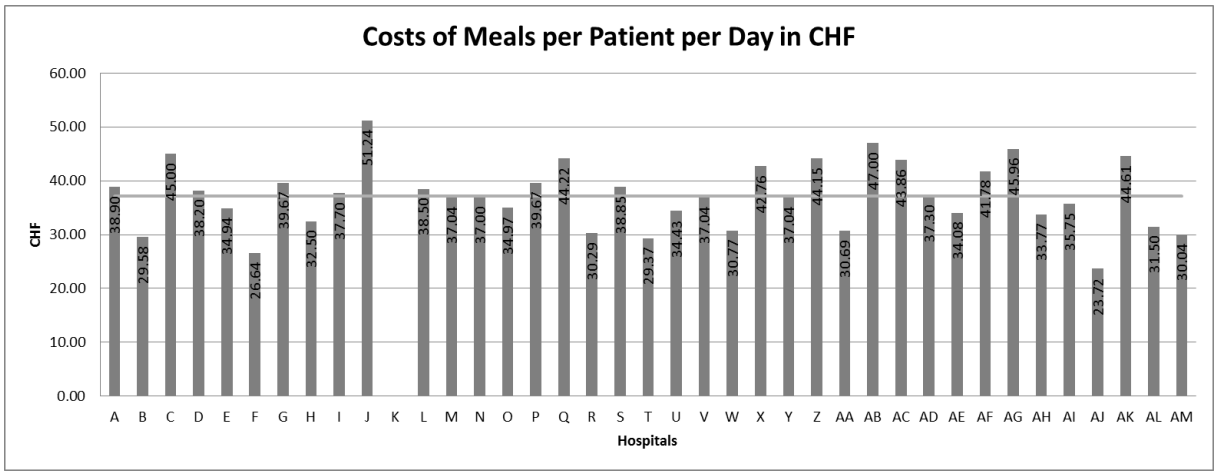

Figure 3: Costs of Meals per Patient per Day in CHF

Key figures space

The key figure square meter (kitchen space) per bed displays how much space a kitchen has to produce the catering for the different customer segments (patients, external catering and restaurant) - see figure 4. The formula is: square meter per bed = [kitchen space incl. frozen- and dry storage without external central warehouse and without sanitary installation and offices] / [number of

beds]. On average, a hospital kitchen has 4.45 m^2 per bed, the minimum in this benchmark is 2.15 m^2 and the maximum of it is 10.26 m^2.

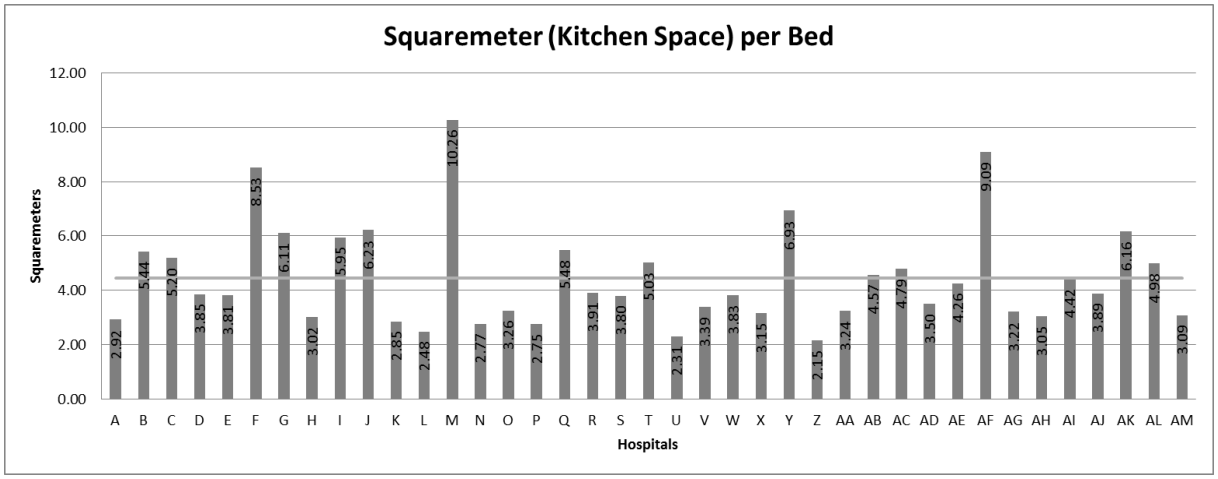

Figure 4: Square meter (Kitchen Space) per Bed

Figure 5 shows the total catering turnover per square meter total catering space in CHF; it is calculated based on the [total catering turnover (restaurant, external catering, patients)]/ [total catering space]. On average the catering turnover per square meter total catering space is CHF 3,805.69.

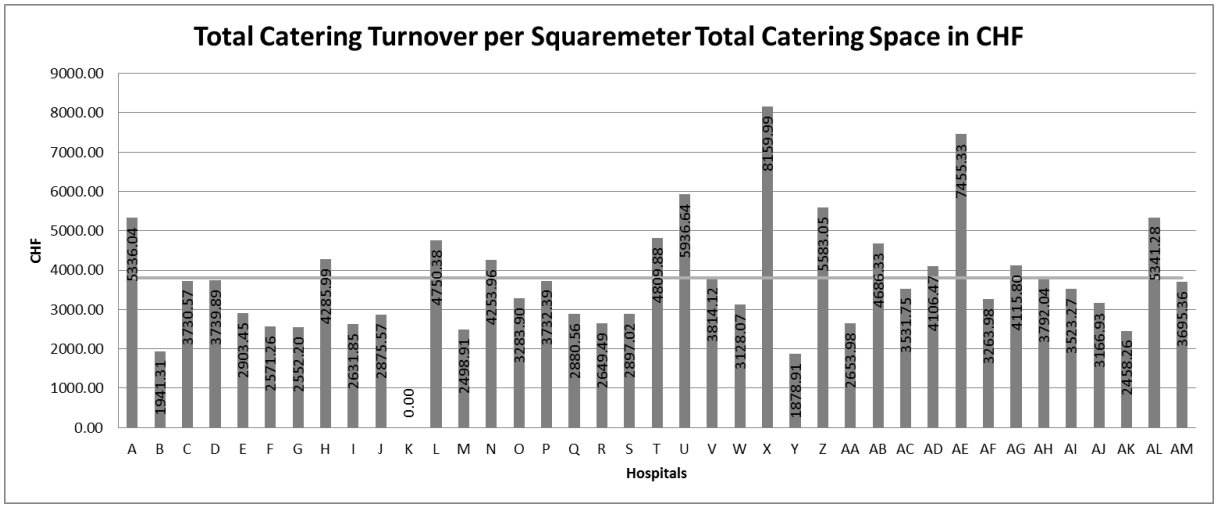

Figure 5: Total Catering Turnover per Square meter Total Catering Space in CHF

Key figures staff

In figure 6, the average personnel costs per staff member working in the kitchen or in the restaurant is shown. This key figure is calculated as follows: [personnel costs kitchen incl. trainees and employee benefits] / [FTE kitchen] and [personnel costs restaurant incl. trainees and employee benefits] / [FTE restaurant]. It illustrates which staff group in the catering department earns how much on average, as well as which staff group earns on average more. The average personnel costs

for the kitchen team are CHF 82,781.42, the one for the restaurant team is CHF 77,591.78. Different factors like the region where the healthcare institutions is located or the educational backgrounds of staff members influence this key figure.

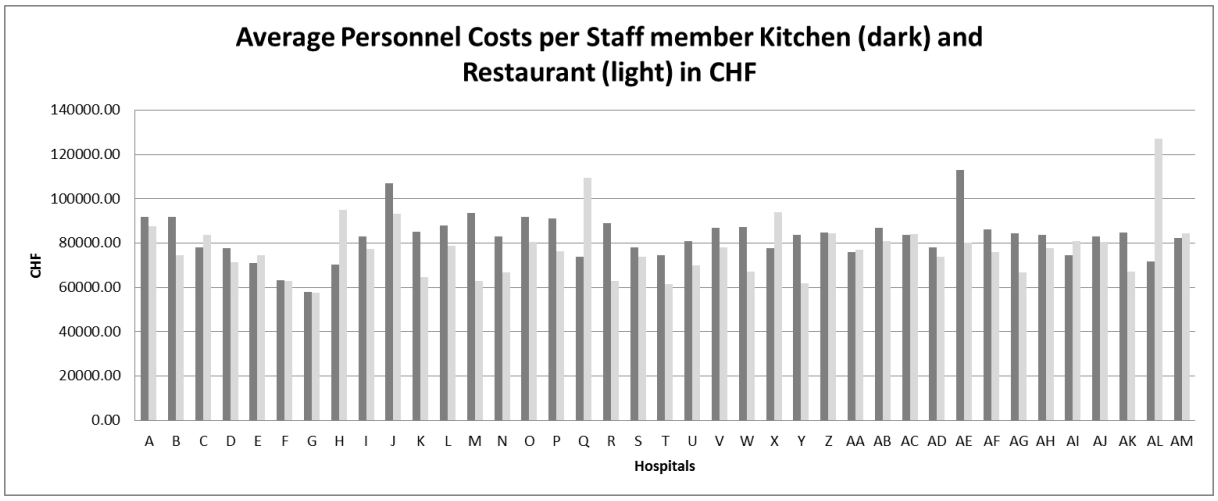

Figure 6: Average Personnel Costs per Staff member Kitchen and Restaurant in CHF

The ratio of the personnel costs kitchen versus restaurant is displayed in figure 7. It is influenced by the same factors as mentioned above for the average personnel costs per staff member kitchen and restaurant. In addition, the size of the teams has great influence here. The formula behind it is: ratio personnel costs kitchen and restaurant incl. trainees and employee benefits. On average, the kitchen team is responsible for 79% of the personnel costs, therefore the restaurant team accounts for 21%.

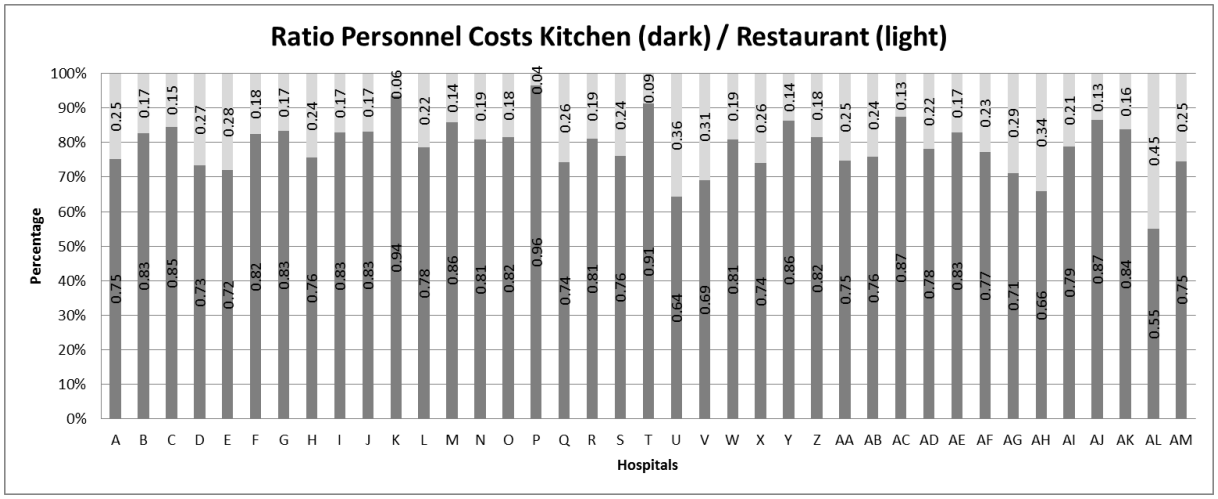

Figure 7: Ratio Personnel Costs Kitchen / Restaurant

Figure 8 shows the ratio of the kitchen staff qualification; the ratios FTE for the unskilled staff members are shown in dark colour, the ratios for the skilled ones in light colour. On average, the mix of the staff qualification of the kitchen team is 60% unskilled and 40% skilled.

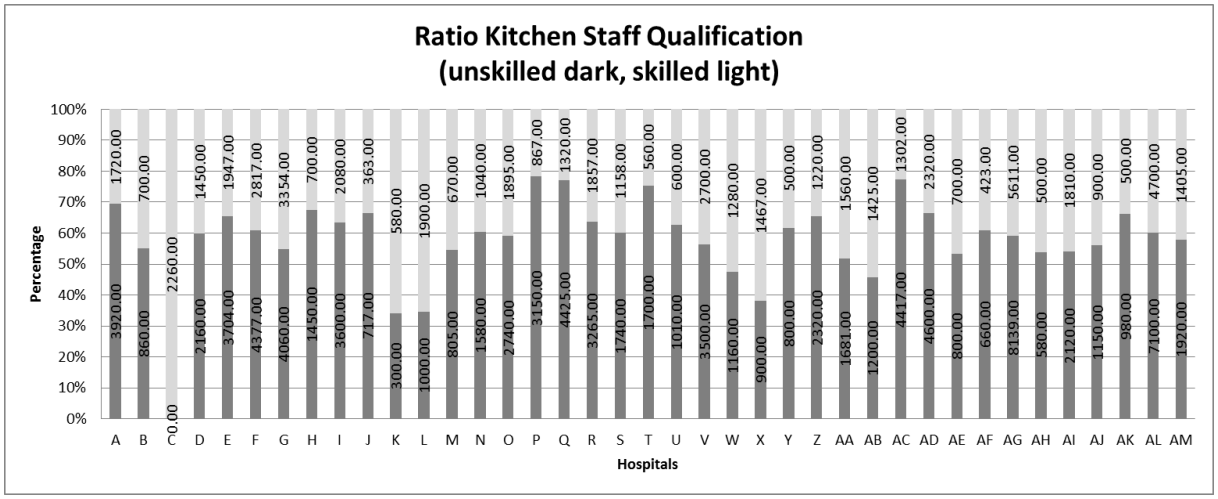

Figure 8: Ration Kitchen Staff Qualification

The personnel costs as a percentage of total catering turnover in CHF is calculated as follows: [total personnel costs of catering (incl. trainees and employee benefits)] / [total catering turnover (restaurant, external catering, patients)]. The results are shown in figure 9. On average, the personnel costs make up 61.15% of the total catering turnover. The minimum personnel costs a healthcare institution in this benchmark has is 26.25% and the maximum is 109.76%. The amount of the personnel costs which are above 100% means that the expenses cannot be covered by the catering revenues.

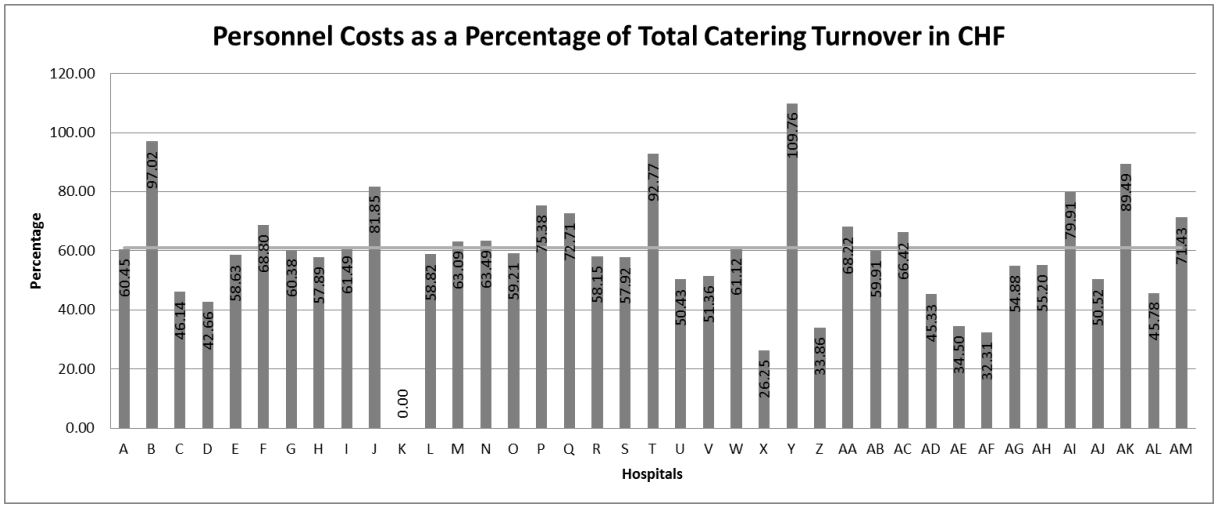

Figure 9: Personnel Costs as a Percentage of Total Catering Turnover in CHF

Key figures food costs

Figure 10 displays the food costs as a percentage of the total catering turnover in CHF. The formula behind it is [total food costs of catering] / [total catering turnover (restaurant, external catering, patients)]. The average food costs are 35.79% of the total catering turnover. The minimum is 12.32% and the maximum of a healthcare institution in this benchmark is 93.20%.

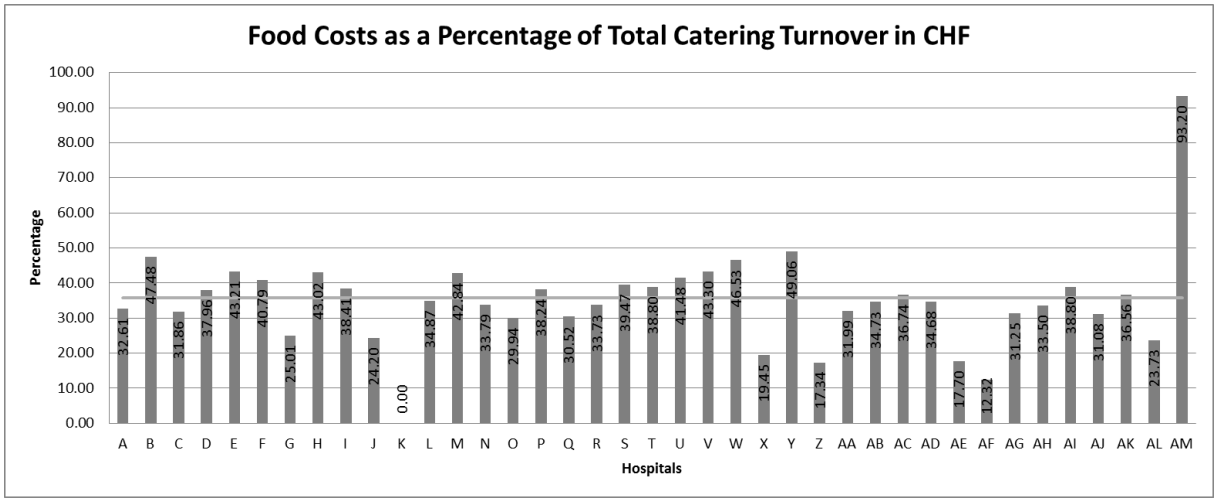

Figure 10: Food Costs as a Percentage of Total Catering Turnover in CHF

Key figures turnover

The personnel and food costs as a percentage of the total catering turnover in CHF, as shown in figure 11, is the combination of the key figures displayed in figure 9 and 10 above. The formula of this key figure is: [total personnel and food costs of catering] / [total catering turnover (restaurant, external catering, patients)]. In general, amounts above 100% means that the expenses cannot be covered by the revenues. The average personnel and food costs make up 96.94% of the total catering turnover. The minimum is 44.62% and the maximum is 164.64%. It must be borne in mind that personnel and food costs are the two major cost blocks, but not the only ones which need to be covered by the total catering turnover.

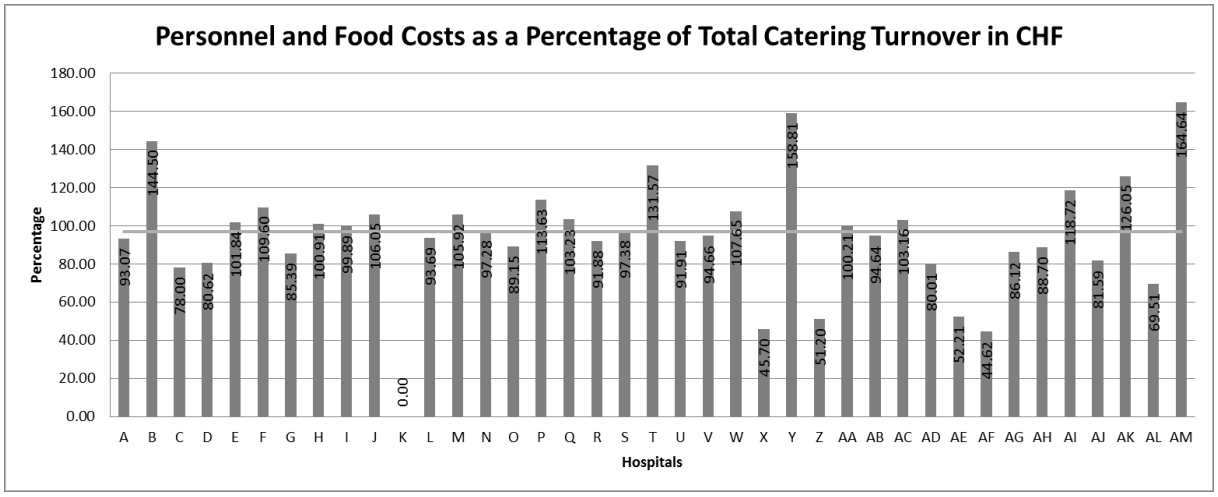

Figure 11: Personnel and Food Costs as a Percentage of Total Catering Turnover in CHF

Figure 12 shows the key figure total catering turnover as a percentage of the total hospital costs, which means the total costs of an organisation. It is calculated as followed: [(personnel costs + food costs + general expenses per square meter kitchen and restaurant space)] / [total hospital

costs]. On average, the catering turnover is 4.91% of the total hospital costs. The minimum is 2% and the maximum value in this benchmark group is 12%.

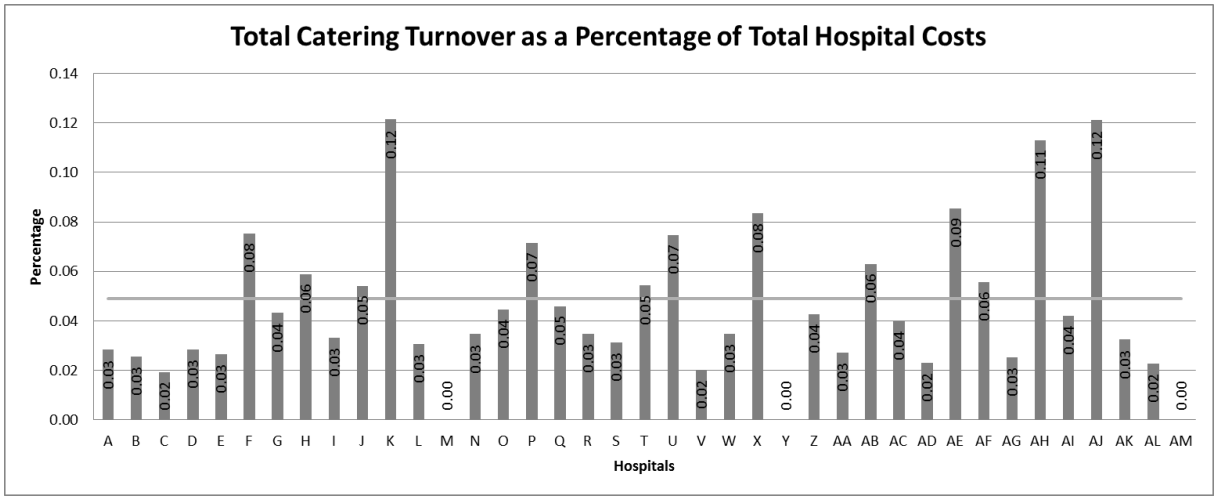

Figure 12: Total Catering Turnover as a Percentage of Total Hospital Costs

The turnover distribution of the different customer segments restaurant (dark), external catering (middle), and patients (light) is shown in figure 13. The average turnover of the restaurant is 34%, 17% external catering and 48% patients. This key figure indicates which importance each customer group has.

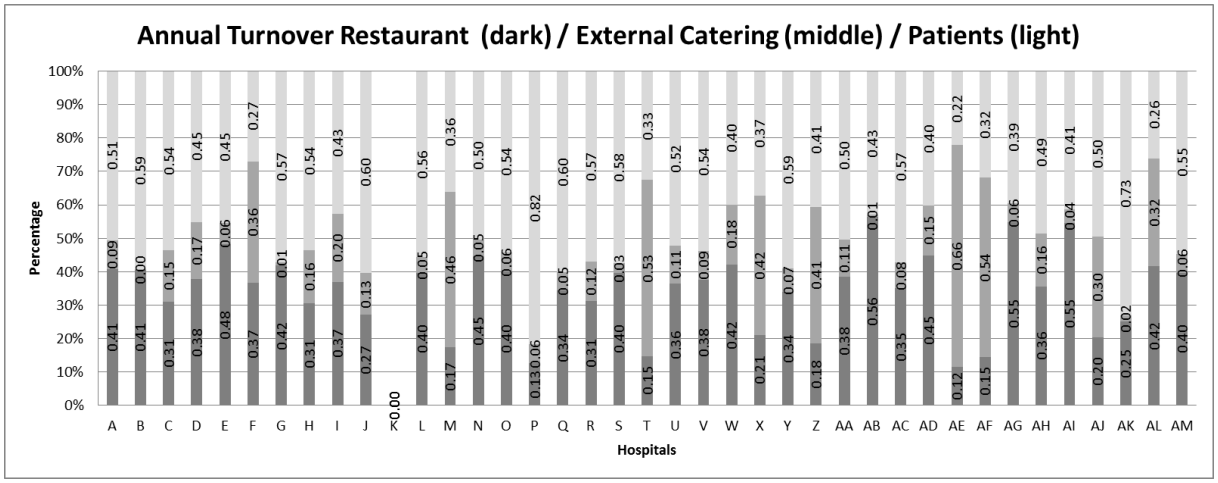

Figure 13: Annual Turnover Restaurant / External Catering / Patients

The key figures selected show the broadness of the catering benchmark platform. They provide an overall picture of the catering department of each healthcare institution as well as insights concerning overall tendencies. These insights are very helpful for FM practitioners as a basis for decision-making as well as to support them on a strategic level.
To give some examples of how FM practitioners use different key figures or even a combination of them as argumentation aids, a selection is displayed in the following list:

- To calculate the cost for external catering products, the key figure "cost of meals per patient per day" is a valuable basis.
- The key figures "daily seat turnover", "number of seats per employee" and "total catering turnover per square meter total catering space" can be used to deduce the occupancy rate of the restaurant. This is useful information when planning refurbishments in the restaurant area and for optimizing opening hours of the restaurant facilities.
- Hints to optimise the personnel costs can be taken from the key figures, "the average personnel costs per staff member kitchen and restaurant" and "ratio personnel costs kitchen and restaurant".
- The key figures "annual turnover restaurant, external catering and patients" and "calculated turnover of the total catering department" are used to check that all services provided are cleared in the financial accounting.
- For evaluating the required kitchen space in building projects, the key figure "square meter kitchen space per bed" in combination with recommendations from the literature, are very useful.

Conclusions

The research project set out to examine if the benchmark is successful in practice as well as which conclusions can be drawn from the different key figures. The numbers of healthcare institutions participating in this benchmark are the evidence that the method developed to benchmark catering in Swiss hospital works in practice. Moreover, different conclusions can be drawn not only from one key figure, but also from a combination of them as described above. Overall, the benchmark platform is going to be used on a yearly basis with an increasing number of participants.

Relevance of Findings

For the first time, the key figures of the benchmark platform for catering in healthcare institutions are displayed with meaningful breadth, as well as with a significant number of healthcare institutions participating. The various key figures are used by Facility Managers in these healthcare institutions as an argumentation aid when discussing matters on a strategic level. The findings provide essential key figures for the soft service part of FM, which are, at least for Switzerland, unique. This findings contribute to the FM knowledge base in order to meet the requirement of the secretary of the European Standardization Committee for Facility Management for reliable benchmarking tools, at least for the catering service (van der Zwang, 2007).

Outlook

As a next step, the number of key figures will be extended to additional interesting areas of a catering department in healthcare institutions, for example food waste. In addition, other benchmarks for FM topics in healthcare institutions will be developed, such as cleaning, and based on the methodology of this catering benchmark.

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