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MANAGEMENT

11:00 a.m.–12:15 p.m.	....Burnham 4, 7th Floor
Theme:	Re-energizing the Business Curriculum to Engage the Faculty and the Students
Chair:	Pam Shay, Franklin University
Panelists:	Pam Shay, Franklin University
	Paula Allen, Union College

MARKETING

11:00 a.m.–12:15 p.m.	.... Salon 1, 3rd Floor
Theme:	Special Topics in the International Facility Management Association
Chair:	Michael Campbell, Florida Agricultural and Mechanical University

Parameters Influencing the Value Added by FM
Alexander Redlein, Vienna University of Technology
Michael Zobl, Vienna University of Technology

Best Value Environmental Sustainability in 2014 World Cup Venues: Investigating Stakeholders' Perceptions of International Facility Management Association (IFMA) Accredited Degree Program (ADP) Institutions Versus Non-IFMA ADP Institutions
Roscoe Hightower Jr., Florida Agricultural and Mechanical University
James Highsmith, Florida Agricultural and Mechanical University
Shehannie Wong, Florida Agricultural and Mechanical University,
Carrington Coleman, Florida Agricultural and Mechanical University

MARKETING

11:00 a.m.–12:15 p.m.	.... Salon 2, 3rd Floor
Theme:	Integrated Marketing Communications
Chair:	Deborah L. Owens, University of Akron

The State of Celebrity Endorsement Entering the 21st Century: A Content Analysis of Print Advertising
Ainsworth A. Bailey, University of Toledo

Marketing Management Association

Once Retro
Now Novel Again

2014 Annual Spring Conference
Proceedings

Editors
Deborah DeLong, Chatham University
Dawn Edmiston, Saint Vincent College
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Marketing Management Association

Marketing Management Association Spring Conference
March 26-28, 2014   Chicago, IL

Dear Friends:

It has been my absolute pleasure to chair a conference that allows us to challenge our thinking. This year you were invited to continue to foster your growth as not only educators but also as researchers and bring back some of the vigor to our practices and ever growing minds. The Spring Marketing Management Association Conference has been an opportunity for us all to learn from one another. As well as a chance to build our careers, our relationships with our students, and of course ourselves.

The 2014 Spring MMA Conference has an impressive program of career-related panels and academic research papers that should foster attendance, teaching, and scholarship. The titles of the research papers will inspire you and bring fond memories of old, as we gather in the historic Palmer House. This year will feature several speakers and guests that are industry leaders, to help inspire and develop our skills outside of our academies.

I have truly revered the chance to work with you all this year, and I hope the Spring MMA Conference is a great experience for you, as it has been for me. I would like to thank all of the dedicated track chairs and reviewers for helping to bring this Spring Proceedings to fruition. Additionally, I would like to thank the MMA Officers and Board of Directors for keeping the organization on track; their consistent hard work and effort has been invaluable.

Thank you for your continued support of MMA, and I hope you enjoy your time with us in Chicago as we return to the Palmer House.

Sincerely,

Roscoe Hightower, Jr.
MMA President Elect
2014 Spring Program Chairperson

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BEST IN TRACK PAPERS

Consumer Behavior
Explicit Priming and Eating Behavior
Cynthia Webster and Brian Kinard

Entrepreneurship
Can Franchising be a Vehicle for Economic Mobility?
Hector Lozada and Richard Hunter Jr.

Ethics and Corporate Social Responsibility
Can Consumers' Online Privacy Be Protected?
Hector Lozada, Gary Kritz and Susan O'Sullivan-Gavin

Global Marketing
An Examination of European Retail Distribution Intensity
Thomas Powers and Till Scheer

Integrated Marketing Communications
The State of Celebrity Endorsement Entering the 21st Century: A Content Analysis of Print Advertising
Ainsworth Anthony Bailey

Marketing Education
A Content Analysis of the Marketing Domain's Top Pedagogical Journals
Kristy McManus, David Fleming, Maggie McDermott and Andrew Artis

Marketing Strategy
The Use of Voluntary Public Disclosure and Patenting Strategies to Capture Value from Product Innovations
Sharon James

Marketing Research
Customization Strategies and Trade Offs between Alignable versus Non-Alignable Features
Ahmed Moosa, Anish Nagpal and Feisal Murshed

Sales and Sales Management
Everyone Loves a Winner...Or Do They? Introducing Envy into a Sales Contest to Increase Salesperson Motivation
Alex Milovic and Rebecca Dingus

Services and Retail Management
An Exploratory Study of the Effects of Service Failures and Recovery Efforts on Customer Satisfaction
Andreas Stratemeyer, Susan Geringer and Alan Canton

BEST IN TRACK PAPERS (CONTINUED)

Social Media Marketing
Social Commerce Emerges As Big Brands Position Themselves to Turn Follows, Likes and Pins into Sales
Nora Barnes

Special Topics in International Facility Management
Best Value Environmental Sustainability in 2014 World Cup Venues: Investigating Stakeholders' Perceptions of International Facility Management Association (IFMA) Accredited Degree Program (ADP) Institutions versus Non-IFMA ADP Institutions
Roscoe Hightower, Jr., James Highsmith, Shehannie Wong and Carrington Coleman

Parameters Influencing the Value Added by FM
Alexander Redlein and Michael Zobl

PARAMETERS INFLUENCING THE VALUE ADDED BY FM

Alexander Redlein, IFM, Vienna University of Technology
Michael Zobl, IFM, Vienna University of Technology

ABSTRACT

A lot of companies have recognized Facility Management (FM) as an important management strategy capable to reduce costs of facilities. From an academic/scientific point-of-view as well as in daily practice there is a need to improve the understanding of how FM can become more effective and add value to the company's core business and the different stakeholders. Therefore, there is a need to determine the parameters that influence the value added due to use of FM with the help of scientific models and methods.

KEY WORDS: Value Added, Statistical Analysis, Facility Management

INTRODUCTION

Facility Management (FM) is a key function in managing facility services and working environment to support the core business of the organisation (Chotipanich, 2004). Therefore FM can contribute to the success or the partial failure of an organisation's business.

Many books and publications refer to the benefits and cost savings through the use of FM. Two articles by Lynch focus on maximising FM's contribution to shareholder value and therefore on economical value (Jensen et al., 2010). An article by Pathirage et al. focused on knowledge management in FM. Some studies focused on the importance of organisational issues in the value adding process. Improving productivity and decreasing costs turned out to be one of the most discussed areas of adding value by corporate real estate management. Some authors raised the issue of flexibility as a significant aspect that can add value to corporate business. Smith and Pitt (2009) identified the added value of sustainable workplaces to improve employee health and wellbeing and increasing productivity (Jensen et al., 2012). Jensen et al. developed the FM Value Map which was presented at the research symposium during EFMC 2009. The FM Value Map is a conceptual framework to understand and explain the different ways that FM can create value for a core business as well as the surroundings for the benefits of multiple stakeholders: owners, staff, costumer and society. The aim was to select exemplary cases of FM adding value in the companies and to find convincing ways to present them to make FM interesting for managers (Jensen, 2010).

According to different publications it is possible to save between 10 and 30% of the costs of buildings through the (efficient) use of FM. In most cases, figures about the economic effects/benefits of FM are based on the study of a single company or the data presented is not specified in detail. In both cases, data cannot be used for a general proof of the economic efficiency/value added of FM (Zechel et al., 2005, Scharer, 2002). The figures are also subject to large variations. Therefore there is a need to determine the value added of the use of FM respectively FM departments and the parameters influencing the magnitude with the help of scientific models and methods.

Since 2005 the Vienna University of Technology (TU Vienna) has performed surveys in the area of FM on a yearly basis. Through these surveys it was possible to build up know-how in the area of FM itself and also in performing surveys and the statistical evaluation (Hizgilov & Redlein, 2010). One of the attempts to prove the profitability and efficiency of FM was performed by Susanne Hauk in "Wirtschaftlichkeit von Facility Management" (2007). In this study she showed that companies using FM achieve an increase of efficiency and productivity as well as cost savings but also create more cost drivers (Hauk, 2007). This can be confirmed by recent studies.

Another research project at the Vienna University of Technology analysed if there is a difference whether a separate FM department has been established or not. The research has been based on a (standardized) questionnaire survey. The author's defined parameters that have influence on the efficiency of FM. Examples for these parameters are: areas of cost saving and availability of cost and building data and usage of CAFM (Computer Aided Facility Management). The study proved that companies with an own FM department tend to achieve savings within more

Facility Services. In addition, companies with a CAFM tool tend towards a higher number of cost drivers because of the need to collect and maintain data. On the other side these companies also have a higher productivity. Based on the existing results of the survey, "data" represents one of the most important areas to increase productivity. Due to the introduction of FM, rapid data access and evaluation is possible. This enables decisions that are more precise and simplifies operational procedures. On the other hand data acquisition and data preparation was one of the biggest cost drivers. So the parameters data and CAFM have retrograded influence, which means they have a positive effect on the increase in productivity. But at the same time they also lead to more cost drivers because of the need to collect, prepare and maintain the data (Redlein & Sustr, 2008). According to the statistical analysis based on the (actual) data of the study at the TU Vienna an own FM department had positive effects on annual cost savings, especially in the areas cleaning and energy. FM is also a very important tool to achieve an increase in productivity. Most named areas were personnel, administration and maintenance/repair. But FM also creates cost drivers.

METHODOLOGY AND STATISTICS

The research is based on the Mixed Method Research/Approach. Mixed Methods Research is an approach that attempts to consider multiple viewpoints, perspectives, positions and standpoints. Mixed research is a synthesis that includes ideas from qualitative research and quantitative research. It is a type of research in which qualitative and quantitative methods, techniques or other paradigm characteristics are mixed in one overall study (Johnson et al., 2007). Quantitative surveys should be combined with qualitative data collection methods e.g. personal interviews, expert groups, focus groups with professionals and content analyses (Jensen et al., 2012). Its logic inquiry includes the use of induction (discovery of patterns), deduction (testing of theories and hypotheses) and abduction (uncovering and relying on the best of a set of explanations for understanding one's results). The goal is to draw from the strengths and minimize the weaknesses of both research methods (quantitative and qualitative) in single research studies and across studies. Taking a mixed position allows researchers to mix and match design components that offer the best chance of answering their specific (research) questions (Johnson & Onwuegbuzie, 2004). The qualitative steps had the purpose to prepare the next quantitative steps. Based on the results of the qualitative steps, the questionnaire for the following quantitative step has to be developed. The quantitative studies had the goal to validate the results of the

qualitative steps done before (Redlein & Sustr, 2008). The qualitative studies (literature review, brainstorming, expert interviews and group discussions) were used primarily for the collection of the potential benefits and efficiency/value added of FM and the parameters influencing the magnitude of the effects. Based on the quantitative studies (facility management surveys since 2005) the results of the qualitative studies were analyzed and validated.

The whole survey process from creating the questionnaire to evaluating results is under yearly review. Results of expert interviews (new areas of savings etc.) are included in the existing questionnaire. Questions are rephrased if necessary, added or deleted. It is important that the questions are short and clear otherwise the risks of misunderstanding and wrong answers are very high (Hizgilov & Redlein, 2011). These steps represent the qualitative part of the research. The questionnaire included summated rating scales (quantitative data collection) and open-ended questions (qualitative data collection).

The questionnaire was subdivided into the parts (parameters and command variables):

- Companies in general: for example questions about the industry of the company, number of employees
- FM organisation: for example questions about the availability of a FM department, number of employees within the FM department
- Savings through the use of FM: areas of cost saving etc.
- Increase of productivity through the use of FM: areas in which an increase in productivity could be observed etc.
- Cost drivers through the use of FM: areas of cost drivers etc.
- Outsourcing: e.g. number of external service providers, outsourced facility services/areas
- IT support: e.g. questions about the use of a CAFM or ERP system, areas of IT support.

In the questionnaire/survey productivity was defined as: Increase in productivity = More output with the same input e.g. staff; respectively increase of output per unit of input. Depending on the answers there are up to about forty questions.

The population for the survey were the Top 500 companies published by Austrian Journal "Trend". Interviewees were the Facility Managers themselves or the persons responsible for the FM tasks. Tools for the survey were phone, personal interviews and/or E-Mail. From the listed Austria's Top 500 companies, 82 companies participated in the survey. The data were entered in a MS Access database and afterwards exported into statistical programmes (SPSS) and analyzed and evaluated. As mentioned before the

questionnaire included also questions with open answering possibilities. That means that answers need to be reviewed, if necessary renamed and afterwards clustered to make the findings comparable. The renaming and clustering was double checked to ensure correctness. In addition the results are validated by questioning the outliers, retracements and changes in trends. Additional points were validated through internet research. This sample represents a solid statistical base for an analysis and permits to make statements which are statistically well-founded (Mierl, 2012).

MEASURES OF ASSOCIATION

The authors used statistical models to prove if there is an (significant) correlation between different variables/parameters. The correlation coefficient was used to quantify the degree of association between two variables. Often, correlations are used during exploratory observational stage of research to determine which variables have a statistical relationship with each other. Correlations are also used to determine the degree of association between independent and dependent variables (Boslaugh & Watters, 2008). The correlation coefficient can take values that occur in the interval (-1, 1). The two extreme values of this interval represent a perfectly (linear) relation between the variables. The relation is "positive" in the first case and "negative" in the other case. The value zero (0) implies the absence of a (linear) relation (Dodge, 2008).

An ideal measure of the strength of association should mimic the correlation coefficient by having a maximum value of 1 or -1 for a perfect association and a value of 0 for dissociation or independence. For two way 2x2 contingency tables, the *phi coefficient* is applicable. For two-way contingency tables involving variables for nominal data with more than two categories *Cramer's V* is preferred. The stronger the connection/correlation the closer *phi* and *V* are 1. A nominal data set consists of assignments of individuals to the categories making up qualitative attributes or variables, such as gender, nationality or questions with yes or no. They are numbers but these numbers do not express the degree to which any characteristic is possessed (Kinnear & Gray, 2008).

EQUIVALENT TEST

An equivalent test was used for comparing the average performance of two groups. The *t test* is an example of a parametric test. That is, it is assumed that the data are samples from two normally distributed populations with the same variance. Other tests, the nonparametric tests, do not make specific assumptions about population distributions and are therefore also referred to as distribution-free tests. There are circumstances in which a parametric test respectively a *t test* can give misleading results. This is especially likely to occur when the data set is small and there are some highly deviant scores, or outliers, which can inflate the value of the denominator of *t*. A nonparametric alternative to the independent-samples *t test* is the *Mann-Whitney U* test. Two nonparametric equivalents of the related-samples *t test* are the *Wilcoxon Test* and the *Sign Test* (Kinnear & Gray, 2008). Nonparametric Tests may calculate statistics about one sample or make comparisons between two or more samples (George & Mallery, 2008). The goal of the *Wilcoxon Test* is to verify if there is a difference between two populations on the basis of the random samples from these populations (Dodge, 2008). Most nonparametric methods use statistics, such as the median, that are resistant to outliers and skewness. If the data are measurements at the ordinal level in the first place, as with sets of ranks, or nominal data, a nonparametric test is obligatory (Kinnear & Gray, 2008).

The *Wilcoxon Test* can be made on the basis of a two-tail test or one-tailed test, according to the type of the following hypothesis:

$$A: Two-tail\ test:$$
$$H_0: P(X < Y) = 0,5$$
$$H_1: P(X < Y) \neq 0,5$$

$$B: One-tail\ test:$$
$$H_0: P(X < Y) \leq 0,5$$
$$H_1: P(X < Y) > 0,5$$

$$C: One-tail\ test:$$
$$H_0: P(X < Y) \geq 0,5$$
$$H_1: P(X < Y) < 0,5$$

Case A expresses the hypothesis that there is no difference between populations. Case B represents the hypothesis that population 1 (sample of X) generally takes greater values than population 2 (from sample Y). Case C expresses that the values of population 1 have a tendency to be smaller than those of population 2 (Dodge, 2008). Or in other words, the null hypothesis (H_0) states that, in the population, the two medians are equal, which means that there is "no effect". The alternative hypothesis (H_1) states that there is a difference between the two medians, which means that there is an "effect".

A statistical test is said to show significance if the p-value is less than the significance level ($p<0.05$). Then the null hypothesis is rejected and the alternative hypothesis is supported (Kinnear & Gray, 2008). This

paper presents some first results of the quantitative part of the actual survey.

RESULTS

In the year 2012, 87% of the surveyed companies (N=82) had their own FM department. In the year 2011 the portion of companies with an own FM department was about 90%. This slight decrease of companies with an own FM department can be explained by the random sample. In 2012 more small companies participated in the survey. However, the share of companies with an own FM department is still on a high level (see Figure 1).
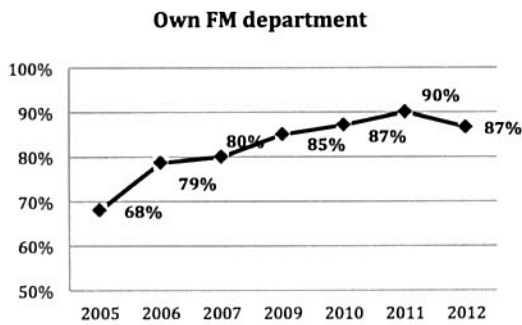
Own FM department

Figure 1. Portion of companies with an own FM department (2005 to 2012)

The importance of FM departments is underlined by its organizational integration within the company's hierarchy. In the year 2012 about 35% of FM departments are organizational integrated as staff unit, while another 54% are integrated as line function. Most of the FM departments are staffed with 3 to 5 employees (2012: 30%).

To determine which variables have a statistical relationship with each other the correlation coefficient *Cramer V* was used. The interpretation of the values of *Cramer V* varies in the literature: 0 indicates no correlation, $0 < V < 0.3$ indicates a weak correlation, $0.3 < 0.7$ indicates a moderate correlation, $0.7 < V < 1$ indicates a strong correlation, $V = 1$ is a perfect correlation (Duller, 2007); $0 < V < 0.1$ indicates no correlation, $0.1 < V < 0.3$ indicates a weak correlation, $0.3 < V < 0.6$ indicates a moderate correlation and $0.6 < V < 1$ indicates a strong correlation (Cleff, 2008). If the variables are independent we get a correlation coefficient of 0. The stronger the connection the closer the value gets to 1 (Puhani, 2008).

Figure 2 illustrates the office staff (number, classified) and FM department (yes/no). Cramer's V has a value of .686. That means there's a moderate

correlation (according to Duller, 2007) respectively a strong correlation (according to Cleff, 2008) between the number of office employees and an FM department within the company. With an increasing number of office employees there's an increasing tendency towards an own FM department in the company. At high office staff numbers, there are only companies with an own FM department. Companies without an own FM department only exist at low numbers of office employees.

Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	,686	,000
	Cramer's V	,686	,000
N of Valid Cases		54	

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

Figure 2. Correlation between FM department and office staff (2012)

Companies without an own FM department only exist in small office spaces (sq. m.). At large office spaces are only companies with an own FM department. Cramer's V has a value of .719. That means there's a strong correlation according to Duller (2007) and also a strong correlation according to Cleff (2008) between FM department (yes/no) and office space (sq. m.). Both models support the hypothesis that the decrease of the percentage of FM departments in *Figure 1* is due to the change of the random sample.

VALUE DRIVERS

Added Value was seen as a combination of price and quality. Nowadays added value is considered as a complex that can be studied from different perspectives. There appears to be broad consensus about added value being the ratio between benefits and sacrifices for the costumer. Risk is also mentioned as a separate aspect. The assessment of and decision about added value involves a trade-off and a choice between different criteria – benefits, costs and risks – which in themselves are difficult to compare (Kok et al., 2011). In our study value added of FM includes cost savings and increase in productivity on the one side and on the other side cost drivers (Mierl, 2012). Cost drivers require differentiated cost planning and cost control. They are measures of cost causation and resource use and output (Leidig, 2004).

The biggest cost driver in 2012 was energy, which was mentioned by 27% of the answering Facility Managers. This cost driver was followed by more "labour-intensive" areas such as safety (13%), maintenance/repair (12%) and cleaning (12%). The

office space (sq. m., classified) * FM department			
	FM department		
	no	yes	Total
office space (sq. m., class.)	Jan-00	5	4	9
	2001-4000	0	6	6
	4001-6000	0	9	9
	6001-8000	0	9	9
	8001-10000	0	5	5
	>10000	0	25	25
Total		5	58	63

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Phi	,719	,000
	Cramer's V	,719	,000
N of Valid Cases		63	

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

office staff (number, classified) * FM department			
	FM department		Total
	no	yes	
office staff (number, classified)	<100	7	4	11
	101-200	2	5	7
	201-300	0	5	5
	301-400	0	8	8
	401-500	0	8	8
	>500	0	15	15
Total		9	45	54

Figure 3. Correlation between FM department and office space (2012)

most relevant areas of cost savings in 2012 (number of mentions/frequencies to total respondents in %) were energy (51%), cleaning (44%) and personnel (21%). The area administration (18%) was the most named area in which an increase in productivity could be observed (answers in % to total respondents). This area was followed by maintenance/repair (17%) and personnel (16%).

An own FM department allows better management of facility services (e.g. cleaning, safety, maintenance/repair). As a result, economic optimizations in different facility services can be performed (Hauk, 2007). The hypothesis is that companies with an own FM department tend to have a higher number of facility services with savings (areas of cost savings) than companies without an own FM department.

The number of facility services with savings (areas of cost saving) was analyzed in detail. As a hypothesis

it was stated that the existence of a FM department (yes/no) has an influence on the number of facility services with savings. In detail, the *Wilcoxon Test* was used. The null hypothesis (H_0) states that, in the population, the two medians are equal, which means that there is "no effect". The alternative hypothesis (H_1) states that there is a difference between the two medians, which means that there is an "effect". The test is said to show significance if the p-value is less than the significance level ($p < 0.05$). Then the null hypothesis is rejected and the alternative hypothesis is supported (Kinnear & Gray, 2008).

number of areas of cost saving (facility services with savings)

FM department	Mean	N	Std. Deviation
no	,88	8	,641
yes	1,86	63	,998
Total	1,75	71	1,010

Ranks		N	Mean Rank	Sum of Ranks
number of areas of cost saving - FM department	Negative Ranks	2[a]	12,50	25,00
	Positive Ranks	41[b]	22,46	921,00
	Ties	28[c]		
	Total	71		

a. number of areas of cost saving < FM department

b. number of areas of cost saving > FM department

c. number of areas of cost saving = FM department

Test Statistics[a]	
	number of areas of cost saving - FM department
Z	-5,570[b]
Asymp. Sig. (2-tailed) p-value	,00000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Figure 4. Facility Services with savings (number of areas of cost saving) – FM department (2012)

The null hypothesis is:

H_0 = Companies with an own FM department tend to the same number of facility services with savings then those without an own FM department.

The alternative hypothesis is:

H1 = Companies with an own FM department tend to a higher number of facility services with savings then those without an own FM department.

Tested Variable:

Facility Services with savings (number of nominations, e.g. cleaning, energy, personnel and maintenance/repair)

Variable of Grouping:

FM department (yes/no)

The significant result (p-value < 0.05) of the test shows that there is a difference between the two medians, which means there is an effect (H_1). Companies with an own FM department tend to have more areas of cost saving than companies without an own FM department. That means companies with an own FM department tend to nominate more areas of cost saving (cleaning, energy, catering, waste management etc.) than companies without an own FM department. Companies with an own FM department nominated average 1.86 areas of cost saving, companies without an own FM department mentioned .88 areas of cost saving. This model proves that an own FM department allows better management of facility services and therefore economic optimization and cost savings in different facility services can be performed.

CONCLUSION

The share of companies with an own FM department is still on a high level. The importance of FM departments is underlined by its organizational integration within the company's hierarchy. FM is a very important tool to achieve an increase in savings and productivity. As mentioned before, a lot of publications indicate that the introduction of FM has positive effects on savings. This can be confirmed by the recent study. According to the statistical analysis based on the data of the study an own FM department had positive effects on annual savings, especially in the areas cleaning and energy. FM also leads to an increase in productivity. Most named areas were administration and maintenance/repair. Companies with an own FM department also tend to nominate more areas of cost saving than companies without an own FM department. But according to Jensen et al. still much work has to be done to learn more about adding value of FM e.g. identifying more value drivers, examining the nature of value and its dimensions (Jensen et al., 2012). More detailed analyses of different industries and/or countries are possible to gather more information and an expansion of the data within this research field.

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