RESEARCH IN HOSPITALITY MANAGEMENT

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The journal includes articles from the disciplines of sociology, demography, business science, culinary sciences, economics, psychology, anthropology, philosophy, media, cultural studies, law, education, leisure science and tourism. Papers relating to consumer behaviour, human resources management, financial management, marketing, strategic management, economics, business forecasting, information technology and development, national and international legislation will be considered for publication. Articles covering social theory and the history and politics of the hospitality industry are welcome.

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Hensens W, Struwing M, Dayan O. 2010. Guest-review criteria on TripAdvisor compared to conventional hotel-rating systems to assess hotel quality. *EuroCHRIE Annual Conference, 25–28 October, Amsterdam, the Netherlands.*
Lashley C, Lynch P, Morrison A. 2007. *Hospitality: a social lens.* Amsterdam: Elsevier.
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RESEARCH IN HOSPITALITY MANAGEMENT

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Editorial

The hospitality industry maintains its position as a primary economic driver and employment generator, even in the face of the prevailing financial crisis. As hospitality educators and researchers we play a key part in this process by preparing future professionals for this dynamic industry. Furthermore, the important role of the hospitality industry is reflected in tremendous growth in both the volume and scope of research in the field of hospitality management. The publication of this second volume of our *Research in Hospitality Management* journal is a small, but exciting, contribution to the enhancement of our understanding of the practice and theory of international hospitality management. In this volume we are proud to present papers by practitioners and academics, including several papers from faculty and students of Stenden University.

Under the heading of 'Hospitality Management Studies', Elsbeth de Boer and Tjeerd Zandberg consider how organizational routines compare to the individual's agency and personality in the hospitality industry. For their paper, they surveyed 128 hospitality management students from different countries and came up with interesting findings about rule-following behaviour and the correlation between personality traits and the propensity to deviate.

A study on revenue management in times of economic crisis, involving participant observation and document analysis, is presented by Sjoerd Gehrels and Oleksandra Blanar. Interestingly, their analysis of the Prague Hilton hotels revealed that implementation of RM theory changes when the 'going gets tough'.

Alexander Grit focuses in his article on hospitality offered by the volunteers who 'inhabit' the houses in the Zuiderzee Museum in Enkhuizen (The Netherlands). The research looked at the museum space through the concept of *urban vitalis* (Pløger, 2006), in conjunction with the concepts 'flow' and 'flux' to address the nature of the hospitality experience. Outcomes indicate that by 'inhabiting houses' new hospitality experiences are initiated.

Lonneke Klein-Aarts, an alumnus of Stenden, and founder of Water2All (W$_2$A) reports from research in her professional practice about the role of the hospitality industry on balanced use of natural resources on Bali. She calls for awareness of stakeholders on islands like Bali, where 80% of the economy depends on tourism and healthy water supply. Mismanagement of natural water resources leads towards a water crisis.

In the field of gastronomy research, Peter Klosse shares some of his findings about *umami* in wine. The positive effects of *umami* on flavour are widely documented, but, until now, wines have not been mentioned in *umami*-related literature or in wine-related scientific publications.

In 'Hospitality Management Education', Wichard Zwaal and Hans Otting report on conceptions of assessment held by students and instructors. The conceptions of assessment are considered to be one of the four interrelated sets of conceptions, which together constitute the conception of education. Since no instrument was available to measure conceptions of assessment an experimental Conceptions of Assessment Scale was developed and tested. The study identifies the importance of paying more attention to the alignment between the educational philosophy of an institute and the conceptions of education held by its students and instructors.

Elena Cavagnaro, in 'Mind the Gap: researching 'sustainability in hospitality' at the edge of academic and industry interests', contemplates the development of the research line 'sustainability in hospitality' for Stenden Hotel Management School. Her findings confirm that in hospitality management studies a gap exists between academic and industry interests, and suggests that professionals are less interested in environmental issues than academics and, moreover, they are in need of guidance for a more integrated approach to sustainability.

The paper by Hans Otting and Marte Rinck de Boer looks at the role of the tutor in Problem-based Learning (PBL). Tutors facilitate the development of students' self-directed and collaborative learning skills, and support students during their learning processes. In this study, students evaluated tutor performance in PBL-groups and compared the performance of beginning and experienced tutors. The findings provide an interesting outlook on the daily work of many faculty members around the world using PBL.

In contrast to most research journals, we also encourage our students to share the findings of their research projects. Theresa Vitera and Rebeka Barbara Keresztes wrote their paper on 'Music as an Environmental Factor in Hospitality'. They asked what the impact of background music is on perceived atmosphere and sales in a school cafeteria.

Anna Engelbertink and Schevaa Van Hullebusch investigated what the effects of education and income are on consumers' motivation to read online hotel reviews, from a new and interesting angle.

Maxine van Dam and Lysbet Wiersma researched to what extent restaurants are prepared to respond to the needs of guests with food allergies and intolerances.

Jannick Boelens explored one of the most fascinating elements of the guest–host encounter: reading the guest by means of facial expressions.

In the student research contributions about education, Josee Dekker provides an insiders look at the assessment practice in Stenden's own teaching hotel.

We consider the diversity of the research topics presented in this volume to be both interesting and inspiring. We are convinced that all the contributions hold merit for hospitality management practitioners, researchers and students. From the Academy of International Hospitality Research, we wish you interesting reading.

Sjoerd Gehrels, Conrad Lashley and Wichard Zwaal

Organisational routines versus individual agency and personality

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Although rules and routines are recognised as important factors in decision-making, many people frequently deviate from rules. In a previous exploratory case study, research focused on how a combination of human agency and personality traits affects rule-following behaviour. In this survey (*n* = 128), results were further investigated and indicated a partial relation between agency and rule-following behaviour. With regard to personality traits, both conscientiousness and altruism correlate negatively with the propensity to deviate.

Keywords: attitude, decision-making, deviatory behaviour, housekeeping, manuals, personality traits, scripts

Introduction

According to both economic theory and rational choice theory, managerial decision-making is rational and focusses on optimisation. In reality, this is not always the case. With regard to organisational behaviour, one of the common theories (Feldman and Pentland, 2003; Becker, 2004) is that organisational routines exercise a strong influence. These routines are sometimes codified into scripts and procedures; at other times, they are more intangible but no less determining. Organisational routines facilitate decision-making by reducing the number of alternatives available and by providing standardised decisions. One recent critique to routine theory is that it is too heavily aimed at explaining stability in organisations and does not pay sufficient attention to the role of individuals within an organisation. Several theories deal, in different ways, with this individual influence of employees on decision-making.

In sociology, the concept of agency (not to be confused with principal agency theory) is used (Emirbayer and Mische, 1998). Agency can be described as the capacity of persons to evaluate their situation and to make choices. In addition, psychology teaches that personality traits are a strongly determining factor in the decision-making process of people as well (e.g. Ones et al., 2007; Chamorro-Premuzic and Furnham, 2008). The combination of these two approaches was researched by de Boer and Zandberg (2010) in an exploratory case study. Our major findings were qualitative indicators that both an agentic orientation on the past and several personality traits were influential in explaining why managers deviate from organisational routines. This paper statistically explores these results and explains how agency and personality traits affect individuals' attitudes towards deviating from organisational routines.

In order to gain more insight, quantitative research has been conducted in the practical training department of a hotel school. Practices in this training department are strongly routinised by means of detailed manuals, making it a difficult environment for people to deviate from routines. This reliance on manuals makes an interesting characteristic for this research, which focussed on how and why students deviate from these formal routines. We shall begin by discussing the theoretical background regarding organisational routines, agency and personality traits before moving to a detailed description of the research and its results.

Theoretical background

The question of how people within organisations make decisions has occupied many researchers. Economic theory assumes that people make rational decisions. Rationality is then characterised by having access to all relevant information, being able to optimise this information, and by the ability to immediately implement decisions taken. Cyert and March (1963) have introduced the concept of bounded rationality, explaining how people use rules to simplify decision-making. Nelson and Winter (1982) have pursued this trail further to show how in economic theory, decision-making can be explained by introducing the concept of organisational routine. They describe organisational routines as the DNA of an organisation, a repository of an organisation's capabilities, containing all the experience and past learning that is stored within rules or procedures. In this manner, routines can be seen as a sort of path-dependency, thus simplifying decision-making.

Although the DNA metaphor might seem appealing, it has a drawback: it is imprecise; biology and organisation studies are two different fields. In recent years, a strong discussion has developed to arrive at a more precise definition of organisational routines (Becker, 2004). One outcome of this discussion has been that routines are generally considered to be the collective counterpart of individual habits. Routines can be mindless or effortful.

Opinions still differ regarding the nature of routines. Cohen et al. (1996) consider routines as rules, such as standard

operating procedure (SOPs), which prescribe decisions and behaviour. Feldman and Pentland (2003) describe routines as collective patterns of action, referring to actual behaviour. A third stream describes routines as dispositions (Hodgson, 2009). In any case, it is clear that routines are more than codified rules or SOPs. The way in which these routines are carried out, and the way in which they are stored in the memory of people and organisations, are all part of the routines themselves. In this research, routines will be considered to be rules codified in SOPs or scripts. A major consideration for this choice is that we are not so much interested in describing the routines as in identifying reasons why people do not follow routines or rules.

Another question we pose is whether rules are fixed and stable, sources of inertia, or open to change by human agency or influence. Recent research sees routines as complex systems that generate behaviour (e.g. Cohen et al., 1996; Feldman and Pentland, 2003; d'Aderio et al., 2009). For example, d'Adderio (2009) makes a distinction between 'representation' and 'performance'. Representation relates to the formal rule, like a SOP or a rule that not only determines a process but is also a part of it in its performance. In this way, d'Adderio seeks to describe the reciprocal influence of rule and practice. Her conclusion is that rules do determine performance or actual behaviour to a large extent. This view reflects institutional theory, which rests on the assumption that, although institutions are human-made, they govern human behaviour. However, recent critiques (Dillard et al., 2004; Cruz et al., 2009) of institutional theory are that it scarcely pays attention to agency in organisations. This has led to some studies showing how agency might alter institutions, such as those of Reay et al. (2006), who show how the acceptance of nurse practitioners in Canada was realised by individual agency of middle managers.

But before we can answer the question of how individual agency might alter institutions, the question of how and why individuals want to deviate from formal rules needs to be addressed. This will be the focus of our research: under what conditions, and why, do individuals wish to deviate from formal rules? Against this theoretical background, the research questions can be formulated as follows: to what extent does an orientation on past, present or future activate or explain individual agentic decision-making in a routinised context; and, to what extent do personality traits explain the individual agentic decision-making in a routinised context? The answers to these questions may be found in two areas: the concept of agency itself and personality traits. Both will now be explored in further detail.

Agency
Howard-Grenville (2005) uses a simple model to describe the stability and flexibility of routines by describing how under the influence of individual agency, routines are enacted in different ways on each occasion. According to agency theory, people do have a certain freedom to make decisions that influence their environment. Emirbayer and Mische (1998) separate agency into three dimensions. The first and most frequent is an iterational dimension, describing how decision-making is strongly related to one's history. Experiences of the past are schematised and these schemas are strong determinants of present behaviour. However, people also have an eye

on the future, having dreams and personal goals and expectations about future developments. This projective dimension or future orientation and the possible paths of arrival there form a second dimension in human agency.

The third dimension is the practical-evaluative dimension of agency. This orientation towards the present can best be described as an evaluation of the present situation. Elements of judgement, improvisation and sense-making are part of this. Weick (1995) describes how people's behaviour is only partly determined by fixed rules, but that especially in situations of change, practical evaluative interpretations of their environment also strongly influence a person's behaviour. The question of why people deviate from organisational routines can be evaluated using three elements of agency: a person's past experience; their practical evaluation of the present situation; and their expectations regarding the future. These elements might determine their decision to deviate from a given organisational routine. With regard to agency and the influence of this orientation on past, present or future, the following propositions may be formulated:
- H_1 = previous experience with a certain task will lead to a higher orientation on the past. As a consequence, people with previous experience in certain tasks will be more open to change and will be more willing to deviate from the prevailing organisational routines;
- H_2 = people with a strong future orientation will be actively searching for means to reach these future goals.

Personality traits
How employees interpret rules and react in different situations will be influenced by personality traits. Much research in the field of psychology has been done on the subject of personality traits. The Big Five theory is widely accepted in personality psychology and beyond (John and Srivastava, 1999). This five-factor model of personality is a well-established and widely used 60-item non-timed questionnaire which assesses the Big Five personality traits: extraversion; neuroticism; openness to experience; agreeableness/altruism; and conscientiousness. According to Costa and McCrae (1992), extraversion refers to characteristics such as being sociable, preferring excitement and stimulation, and enjoying interaction with a wide variety of people. Neuroticism refers to the tendency to experience negative emotions, feeling tense, irritable, malcontent, moody and shy. Openness to experience refers to personality characteristics such as an active imagination, curiosity, aesthetic sensitivity, preference for variety, excitability and intellectual curiosity. Agreeableness/altruism refers to characteristics such as being friendly, co-operative and being sympathetic towards others. Finally, conscientiousness refers to characteristics such as being responsible, being able to resist impulses, and exerting self-control (see Table 1).

Ones et al. (2007) assessed the relation between the Big Five self-report measures and the application for predictions and its applicability in the workplace. Their results confirm Murphy and Shiarella's findings (1997: 825) that 'there is considerable evidence that both general cognitive ability and broad personality traits (e.g. conscientiousness) are relevant to predicting success in a wide array of jobs'. The validity of non-cognitive predictors, including personality inventories, is 'practically useful'. Self-report personality measures are not only useful for predicting overall job performance in

Table 1: Explanation of the different domains' scales according to Costa and McCrae (1992)

Personality	Character traits
Extraversion	Sociable, forceful, energetic, adventurous, enthusiastic, outgoing, excitement, stimulation
Neuroticism	Tense, irritable, not contented, shy, moody, lacking self-confidence
Openess to experience	Curious, imaginative, artistic, wide interests, excitable, unconventional
Agreeableness/ altruism	Forgiving, co-operative, not demanding, warm, not stubborn, no show-off, sympathetic to others
Conscientiousness	Efficient, responsible, friendly, organised, not careless, thorough, not lazy, not impulsive

all its facets but can be used for understanding, explaining and predicting significant work attitudes like job satisfaction and organisational behaviours like leadership emergence and effectiveness, motivation and effort (Schmitt et al., 1997). Ones et al. (2007) made an extended study of the meta-analytic research documenting the usefulness of personality variables for a broad spectrum of organisational attitudes, behaviours and outcomes, and judged the usefulness of personality measures. They concluded that any theory of organisational behaviours that ignores personality variables would be incomplete.

Personality and the effect on routines
Chamorro-Premuzis and Furnham (2008) have investigated the relation between learning approaches and personality. Recent studies have highlighted the conceptual and empirical overlap between learning approaches and personality traits (Zhang, 2003; Chamorro-Premuzic et al., 2007). This study explains that between 20% and 45% of the variance in learning approaches can be accounted for by the Big Five personality traits. Specifically, openness can be linked to deep learning, whereas achieving learning has been linked to conscientiousness. Considering these relationships, more conscientious students will be satisfied earlier about their performance in the training than students who are more open to experience. The extraversion trait relates to dominance and energy and does not necessarily have any influence on routine behaviour (Ones et al., 2007).

Based on this, the following hypotheses regarding the influence of personality traits on behaviour in routinised conditions can be formulated:
- H_3 = persons scoring low on Agreeableness/altruism are less forgiving, more demanding, stubborn, and willing to show off their competences in practice. Therefore, they will feel a stronger need to deviate from existing routines;
- H_4 = persons with a high level of openness to experience have a strong tendency to deep learning. For this reason, they may be expected to have a higher tendency to deviate from the prevailing organisational routines;
- H_5 = persons who score high on Conscientiousness are efficient, responsible, friendly and organised. Therefore, it may be expected that they will follow the SOPs more

carefully and have a lower tendency to deviate from the organisational routines;
- H_6 = persons scoring high on neuroticism can be characterised as tense, not contented and not self-confident. It may be expected that they find it more difficult to adjust to prescribed routines, which will give them less freedom in carrying out their duties. Therefore, it may be expected that they will feel a stronger need to deviate from the existing routines.

Method

A case study was conducted in the housekeeping section of the practical training department of a hotel school. Practices in this housekeeping training department are strongly routinised by means of detailed manuals, making it a difficult environment for people who tend to deviate from routines, a characteristic which makes the department suitable for this research. One hundred female and twenty-eight male students were included in the research. These students worked in the housekeeping department as first-years who clean rooms or as second-years who occasionally clean but also supervise and instruct first-year students and act as floor supervisors in the housekeeping department. In this position, these students have the choice to adhere to or deviate from formal instructions. Of the 128 students who participated in the study, 90 students were Dutch, 24 German, 11 Chinese, 2 Dutch-Canadian and 1 Austrian. One hundred and ten students were following the regular route of four-year study, eleven students were following a shorter study route due to former education, and four students were following a longer study route. Sixty-two of these students indicated that they had no previous working experience in a housekeeping department, while sixty-six indicated that they did have working experience (six of these had more than a year's experience). Half of these reported that they had prior experience with manuals.

Student questionnaire
The research focussed on the questions of how and why students deviate from formal routines. Several questions investigated attitudes towards routines and agency on five-point Likert scales, and the students underwent the Big Five personality test. Other questions focussed on students' experiences with manuals in work situations other than the Stenden University Hotel (SUH) student training hotel, and their own future plans. Most of these questions were on a five-point Likert scale (1 = 'strongly disagree'; 5 = 'strongly agree'), excepting a question about attitudes to working with strict procedures and manuals other than in the SUH hotel (1 = 'strong favour for strict procedures'; 5 = 'strong favour for deviation').

Self-report measures
Participants were asked for background information such as age, previous study, work experience and experience with manuals. The NEO Five-Factor Inventory (NEO-FFI, Costa and McCrae, 1992), a 60-item self-report measure, was used to assess the personality domains of neuroticism, extraversion, openness to experience, agreeableness and conscientiousness. To ensure that personalities of hotel management school students do not differ from the norm score group, the Big

Five personality trait outcomes of the students on the NEO-FFI were compared to the averages and standard deviations of the research context norm scores comparison group of Hoekstra et al. (1996) of the NEO-FFI. As Table 2 shows, there is a strong comparison with this group of students.

The questionnaire included 12 items per domain that are answered on a five-point Likert-type scale (ranging from 'strongly disagree' to 'strongly agree'). There is wide consensus that the NEO-FFI is a good instrument for assessing the five major personality traits (Chamorro-Premuzic et al., 2008). Internal consistency coefficients for the domain scales are reported from several studies to range from 0.68 to 0.86, and normed means (Hoekstra et al., 1996) for college age are available (Dutch control group research context, <25 years of age). The Big Five personality trait outcomes of each individual student on the 12 items per domain were transformed into norm scores (1 = very low, 9 = very high) based upon the comparison group (n = 187) of Hoekstra et al. (1996). This was a group of adolescents who were <25 years of age (average age of the hotel management school group was 20.17 years (SD = 2.05).

Results

In the housekeeping department, it was surprising to find that many students (72) wished to interpret rules themselves, while they had maintained that the rules were logical and clear (94) and followed the rules (111). They considered the rules to be very strict; they did not see room for their own interpretation (63) and also saw no flexibility in the rules (83). Contradictory to the situation at the SUH hotel, in their real work situation, they do deviate from rules (78).

We could not find any relation between prior education, gender and nationality, on one hand, and the willingness to deviate on the other.

Agency
There was no support for the first two hypotheses: 'previous experience with a certain task will lead to a higher orientation on the past'; and 'people with a strong future orientation will be actively searching for means to reach these future goals'. The idea that people with previous experience in certain tasks will be more open to change and be more willing to deviate from the prevailing organisational routines was not supported in this study.

Calculations (t-test) for differences between students with experience in a housekeeping department elsewhere, or no experience besides in the SUH hotel, gave no significant differences for different questions (see Table 4) about their future plans and attitudes toward routines.

Calculations (t-test) for differences between students experienced with manuals and those without experience gave no significant differences for different questions (see Table 5) about their future plans and attitudes toward routines.

Personality traits
The following results describe the relation between the five personality traits and attitudes towards strict rules and procedures, and the willingness to deviate from routines. Initially, the reliability of the personality scales was tested. The internal consistency of the scales was high, except for the scale for openness (α = 0.55). Openness did not reach the lower bound of 0.60, argued by Nunnally (1978) for new scales. The Cronbach's alphas of the five personality scales can be found in Table 6 (diagonal), as well as the means, standard deviations and correlations of all the variables.

Table 2: Comparison of internal consistency of personality scales, means and standard deviations of the NEO-FFI scores of the research context group with the SUH hotel school group (research context <25 years of age)

	Reported alpha* (n = 1 539)	Present study (n = 128)	M (SD) reported (n = 187)	M (SD) present study (n = 128)
Neuroticism	0.86	0.68	31.6 (8.0)	32.6 (5.6)
Extraversion	0.77	0.78	43.2 (8.0)	43.5 (5.7)
Openness	0.73	0.55	37.3 (6.3)	36.4 (5.7)
Altruism	0.68	0.71	42.9 (5.8)	41.6 (5.3)
Conscientiousness	0.81	0.80	44.6 (6.0)	44.3 (6.0)

*Cronbach's alpha score reported by Hoekstra et al. (1996), of a USA test group

Table 3: Comparison between totals of students agreeing or disagreeing with statements

	Disagree	Agree	Undecided
Did you like to work according to strict procedures? (at real work)	14	43	22
Did you actually deviate? (at real work)	12	78	x
I followed the SUH rules	10	111	6
I like it when the rules in the SUH manuals are very strict	34	45	47
The manuals leave room for my own interpretation of SUH rules	63	33	31
There is enough flexibility to change the rules myself	83	16	28
I would like the freedom to interpret the SUH rules myself	21	72	30
Would you like to do your internship in a housekeeping department?	81	9	38
After education, being housekeeping manager	81	7	40
The rules and procedures are logical and clear	16	94	17
The rules in the manual are clear	9	104	15

Results (*t*-tests) indicate that there is no significant difference between males (*M* = 2.61) and females (*M* = 2.61) favouring deviation from routines (*t* (77) = 0.019, *p* = 0.985).

Results show partial support for Hypothesis 3: 'persons scoring low on agreeableness/altruism are less forgiving, more demanding, stubborn, and willing to show off their competences in practice. Therefore they will feel a stronger need to deviate from existing routines'. A significant positive relation was present for 'I like it when the rules in the manuals are very strict' (*r* = 0.24), and a significant negative relation was present for 'I would like the freedom to interpret the rules myself' (*r* = –0.21).

Against expectations, no support was found for Hypothesis 4: that persons with a high openness to experience have a strong tendency to deep learning and may therefore be expected to have a higher tendency to deviate from the prevailing organisational routines.

For conscientiousness, it was expected that people scoring high on conscientiousness, being efficient, responsible, friendly and organised would follow the SOPs more carefully and have a lower tendency to deviate from organisational routines. We found significant supporting evidence for Hypothesis 5, in the favouring of strict routines: 'did you like to work according to strict routines at work?' (1 = strong favour for working according to procedure; 5 = strong favour for deviating). This showed a negative correlation (*r* = –0.26), which indicated that people scoring high on conscientiousness do not favour deviating from routines. Results also show a significant positive correlation (*r* = 0.23) for 'I like it when the rules in the manuals are very strict'.

Regarding Hypothesis 6, there was no significant support for persons scoring high on neuroticism to find it more difficult to adjust to prescribed routines.

Discussion

It can be concluded from the results that a focus on or orientation toward the future does not influence students'

present behaviour. An orientation toward the past also does not affect present behaviour, insofar as students had substantial working experience. Since half of the students stated that they did have experience in housekeeping, the overall effect of the past remains small. An important determinant of student behaviour is 'sense-making', as our previous qualitative study showed. Students seem to have a strong tendency to show practical-evaluative behaviour, interpreting their situation and seeking pragmatic solutions rather than following rules prescribed in manuals. A probable explanation for the strong influence of the SOPs and the large difference in non-deviance in the SUH situation, compared to deviance in the 'real' work situation, can be found in the fact that students were being assessed on how they followed these rules, according to one of the interviewed practical instructors.

Based on the analysis of these results, we concluded that personality traits are indeed related to students' attitudes toward routines. Persons scoring low on agreeableness/altruism do not approve when rules in the manuals are very strict, and they do care more about freedom to interpret rules themselves than persons scoring high for this trait. In our previous qualitative study, we quoted for low scores on agreeableness/altruism a non-conform statement: 'I changed the turn-down service because the guests are not familiar with it'. This comment, from a student scoring low on agreeableness, clearly shows how a low score on this trait explains a strong tendency to deviate from routines.

We concluded that conscientiousness is related to students' attitudes toward routines. Persons scoring high on this trait had a lower tendency to deviate from organisational routines. There was significant support for their liking of strict routines and favour for working according to procedures and not wishing to deviate from routines. Our previous qualitative study indicated students scoring high on conscientiousness being very aware of their environment, a clear example being a student who cleans toilets more frequently during a busy day, even if not prescribed by the manual. This could indicate that a high score for conscientiousness is related to a

Table 4: Comparison between students with prior housekeeping experience (*n* = 66) and without housekeeping experience (*n* = 62)

	Experience with housekeeping	No experience with housekeeping	*t*	*P*
I like it when the rules in the manuals are very strict	3.05	3.08	–0.197	0.844
I would like the freedom to interpret the rules myself	3.52	3.53	–0.055	0.956
Internship	2.17	2.08	0.503	0.616
After education being housekeeping manager	2.20	1.94	1.540	0.126
Did you like to work according to strict procedures?	2.63	2.58	0.288	0.787
I followed the rules	3.92	3.98	0.513	0.683

Table 5: Comparison between students with prior manual experience (*n* = 64) and without manual experience (*n* = 64)

	Experience with manuals	No experience with manuals	*t*	*P*
I like it when the rules in the manuals are very strict	3.11	3.02	0.546	0.586
I would like the freedom to interpret the rules myself	3.43	3.63	–1.188	0.237
Internship	2.23	2.02	1.287	0.200
After education being housekeeping manager	2.13	2.02	0.639	0.524
Did you like to work according to strict procedures?	2.54	2.88	–1.341	0.184
I followed the rules	4.06	3.84	1.514	0.133

Table 6: Number of items, means (*M*), standard deviations (SD), reliability and correlations of the variables[1]

Variable	n	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Neuroticism	128	5.24	1.48	(0.68)											
2. Extraversion	128	5.13	1.89	−0.35**	(0.78)										
3. Openness	128	4.70	1.53	−0.00	−0.04	(0.55)									
4. Altruism	128	4.62	1.87	−0.22*	0.18*	−0.02	(0.71)								
5. Conscientiousness	128	4.76	1.92	−0.37**	0.16	−0.04	0.17	(0.80)							
6. Favour strict procedures at work	79	2.61	0.90	−0.07	0.01	−0.12	−0.18	−0.26*							
7. Followed the rules	128	3.95	0.822	0.13	0.03	−0.08	0.12	0.12	−0.21						
8. Like strict rules	127	3.06	0.98	0.04	0.01	0.01	0.24**	0.23**	−0.49**	0.32**					
9. Enough flexibility to change the rules	127	2.39	0.82	0.14	−0.14	0.02	0.02	−0.05	0.09	0.01	0.08				
10. Like freedom to interpret the rules	127	3.53	0.933	−0.10	−0.05	0.06	−0.21*	−0.02	0.26*	−0.14	−0.31**	0.00			
11. Internship	128	2.13	0.96	0.19*	−0.18*	−0.10	0.06	0.06	0.01	0.21*	0.15	0.21*	0.03		
12. Being housekeeping manager in future	128	2.07	0.97	0.10	−0.09	−0.09	0.04	0.07	0.03	0.16	0.17	0.06	−0.05	0.76**	
13. Manuals leave room for interpretation	127	2.72	0.92	0.07	−0.07	−0.13	−0.03	0.06	0.03	−0.02	0.19*	0.34**	−0.08	0.13	0.14

[1]Cronbach's alpha (α) is in brackets; (*$p < 0.05$; ** ; $p < 0.01$). All questions are: 1 = 'disagree', 5 = 'agree', except Question 6, about respondents' work experience: 1 = 'strong favour for strict procedures'; 5 = 'strong favour to deviate'

favouring of strict routines, but that these persons may want to deviate from manuals if a particular situation demanded this. This behaviour was not supported by our results, which does not mean that when a situation requires it, these students still feel the need to deviate. In general, they feel a stronger need to follow prescribed routines.

Limitations

In order to increase the validity of this investigation, more attention should be paid to triangulation. This could be realised by having the practical instructors or third-year supervisors keep a weekly diary and by participant observation.

Generalisation of the conclusions is limited due to the fact that research was conducted in only one department. Extending the research to other departments or different industries would increase generalisability.

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How economic crisis affects revenue management: the case of the Prague Hilton hotels

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This study explores revenue management practices in two Prague hotels throughout the past years of economic crisis. The purpose of the research was to inform hospitality managers and educators about revenue management practices in central Europe's emerging and challenging hospitality market. Data were collected through participant observation, accessing company documents, and by soliciting inputs from key informants. This study identifies the necessity for careful pricing strategies and to resist discounting. Rate dilution and price wars in the market should be avoided in order to prepare for times of recovery. To maximise revenue, forecasting should be accurate, group contract conditions should be monitored, and over-sales versus spoilage factors balanced. Strategies aimed at both direct and indirect channels should be aligned to maximise value and cost-effectiveness.

Keywords: economic crisis, hospitality management, revenue management

Introduction

The hotel industry in the USA was one of the first business sectors to feel the effects of the economic crisis in December 2008. Central and eastern European countries were next, and the effects of the crisis showed in declining hotel revenues and decreasing demand. In hotels, one of the main strategies for profit maximisation is revenue management. Within a healthy economy, revenue management is perceived as a 'well-running machine', while during low-demand periods, it is sometimes viewed as a low priority activity (Mainzer, 2009). It is under challenging conditions that revenue management becomes more important than ever. This study addressed revenue management during times of economic crisis by looking at the two Prague Hiltons, the Hilton Prague (HP) and the Hilton Prague Old Town (HPOT) . To successfully implement a revenue management strategy, a hotel needs detailed data on past demand patterns per market segment and methods of projecting current market demand.

With the economic downturn, many hotel revenue managers have been struggling to best manage declining demand and the pressures to reduce rates. Hotels have experienced decreasing occupancy, average daily rates and revenue per available room. Recently, a wealth of research has focussed on revenue management and its role in the hospitality industry in economic crisis (Kimes, 2008; 2009; 2010; Butscher et al., 2009; Caudillo-Fuentes and Li, 2009; Garrow and Ferguson, 2009). There were, however, few studies about the holistic effect that the economic crisis had on revenue management practices.

The main aim of this research was to identify how the economic crisis has influenced the application of revenue management and particularly the approach to managing distribution channels, forecasting, pricing strategies and overall demand generation and management. This study created an interesting discussion of revenue management as business strategy for hospitality management and academic study. The main research question for this study was: how did economic crisis influence the practice of revenue management in eastern Europe's hotel industry?

Literature review

Revenue management is a process of allocating the right service to the right kind of customer at the right price, so as to maximise revenue or yield (Zeithaml et al., 2006). Kimes (2003) defines 'right' as achieving the maximum revenue for sellers, and gaining the maximum value for buyers. This means offering discounted rates to stimulate demand for inventory that would otherwise go unsold, whilst limiting the availability of discounts to customers who are willing to pay higher prices (Kimes, 2003).

Cross et al. (2009) define revenue management as disciplined tactics that predict consumer behaviour at the micro-market level and optimise product availability and price, to maximise revenue growth. Revenue management originated from the airline industry in the 1970s, but was soon also applied in other industries. Salerno (2008) stated that the main purpose of revenue management in the airline business is to fill at least a minimum number of seats in order to cover fixed operating expenses. In the 1990s, revenue management emerged in the hotel industry, when hoteliers embraced the concept in order to increase overall hotel profits, not just room revenue (Bowden, 2006). Harewood (2006) asserts that firms adopting revenue management successfully share some common characteristics: (1) being able to segment the market;

(2) having high fixed costs and low variable costs. Netessine and Shumsky (2002) note that commitments should be viewed as important when future demand is uncertain. Revenue management fits the hotel business well, fixed amount of capacity being 'very perishable'.

Typically, hotels have two strategic levels for managing revenue: duration control and demand-based pricing. Common application of revenue management for transient customers is that rate and inventory availability is dictated by forecasted demand in the market. While this approach maximises the room revenue generated from a single transaction, it may not lead to optimal long-term gains. Sophisticated integration of sales and marketing and customer relationship management is needed to manage the process. Proactive revenue management implementation allows a hotel to achieve the highest possible revenue, not only in terms of room revenue but taking a holistic approach and including aspects such as food and beverage outlets, function spaces, casinos, spa facilities, and so on.

At the end of 2008, the global economic crisis created numerous problems for a variety of industries, including the hotel industry. The combination of growing room supply, shrinking demand for rooms and declining room rates led to an alarming drop in revenue per available room (Smith, 2008). Butscher et al. (2009) also point out the effect of stagnant investment in the hotel business sector because of reduced capital for new projects or renovations. They suggest that most hotel companies have already cut their fixed costs as much as they could by deferring hotel infrastructure ownership to third parties and outsourcing aspects of everyday hotel management. The recession caused the vast majority of hotels to re-examine their rates and the potential value they offer to travellers. Many hotels reduced overall rates, only to discover that lower rates do not create higher demand, resulting in lower overall revenue earned (Salerno, 2010).

Hotels in Prague, in response to the crisis, started searching for other business opportunities to compensate for the market decline around 2009, targeting demand for corporate meetings. This resulted in rate declines and price wars amongst hotels in the city. To provide insight into and understanding of the underlying processes, this research tried to establish what actually occurred in the practises of revenue management.

Methodology

For this research, a qualitative case study design was chosen, which can serve as a representative case and example for other businesses. Participant observation was used as primary data collection technique, supported by company documents and analysis of company websites. Observed actions concerning revenue management procedures were noted. Next, summaries were compiled and compared with company documents. The analysis allowed for the identification of main themes and formulation of conclusions. This research was organised as a case study so as to include actual situations within the context of revenue management. This allowed for retention of holistic and meaningful characteristics of actual events such as organisational and managerial processes and discovering unforeseen relationships and concepts, as suggested by Yin (2003).

To ensure the study's validity and reliability, we followed Yin's (2003) case study protocol: using multiple sources of evidence; establishing a chain of evidence; and having a draft case study report reviewed by key informants. The selection of the case company was driven by having direct access to the data because one of the two researchers held a revenue management-related position within both Hilton hotels in Prague.

Results

Prague Hilton revenue managers divide the hotel market into major and minor segments. This assists them in pricing, in order to maximise revenues and to avoid any revenue opportunity being overlooked. The two segments' definitions are primarily based on: the purpose of the stay; the category (business or leisure); and the size of the party (group or individual). We found that the pricing structure was tightly bound to the market segments, meaning that every market segment had its own price. The Prague Hiltons use rate fences to stimulate demand during need periods and to restrict it in high-occupancy periods. Certain rate fencing is also applied to package deals and promotions. Group pricing and decisions to accept group bookings are highly dependent on the transient customer base, events in-house and in the city for the given period. For leisure groups, meetings and conferences, prices are based on request (demand calendar). Conference and events rates are higher than leisure group rates, being in some cases in line with the public rates. Contracted rates are usually flat or seasonal, and fixed for a certain period, usually a year.

Seasonal rates, in the case of the Prague Hiltons, are contracted for individual and group leisure bookings. Pricing structure is usually based on identified market segments. Hotel initiatives during times of recession include special leisure offers of highly-discounted rates for certain markets, to adjust for decreased buying power. Such special offers are aimed, for example, at Israeli, Greek and Russian markets. Within the 'packages and promotions' segments, there were Global Hilton promotions such as the 'January Sale' or 'Summer Sale', and so on. Those promotional prices were usually 50% off the standard high or rack rate (high standard rate), and were dictated by the minimum length of stay of at least two nights as well as having certain advance purchase requirements with the lead time ranging from 7–21 days prior to arrival. In most cases, certain days of the week (usually weekends) were required days of stay. These promotions were always fully pre-paid, non-refundable and not open for alteration. The main purpose of these promotions was to gain a volume base during need periods.

The overall drop of the average daily rate between 2007 and 2009 was 26%. Rates for leisure groups were decreased, to avoid losing the business to competitors. Undertaking displacement analysis was increasing less common, because every opportunity for business was pursued. Demand forecasting, performed regularly in the Prague Hiltons, is crucial for sales strategies and price optimisation. There are two types of forecast in the Prague Hiltons: (1) the automated forecast, part of the revenue optimisation cycle and generated by the Ideas Revenue Optimization Software program; (2) the forecast performed by the revenue manager, based on

the same factors and serving as a validation of the system-generated forecast; the revenue manager adjusts it based on information that cannot be fed into the software system.

The main demand management tools used by the Prague Hiltons are pricing and overbooking. Additionally, capacity allocation is based on the business type and market segment. Each day, there is a certain number of rooms allocated and available for sale. Amongst the allocated rooms are the fixed portion (for travel agents and air crews, for example) and the variable portion (for tour groups, meetings and conferences). What remains is then sold directly at hotel level as well as through various distribution channels to corporate and some of the minor leisure segments.

Overbooking in the Prague Hiltons is actively used as one of the tools for demand management, capacity allocation and revenue maximisation. The HP has the biggest capacity in the city and is therefore not fully booked for many days in the year. The HPOT is smaller than the HP and cannot afford to aggressively overbook. The two sister hotels are located in relative proximity and provide similar products and services. A cluster selling strategy is employed by both hotels.

The Prague Hiltons deal with significant numbers of conferences and events, and use an attrition clause in contracts. This is part of cancellation conditions and stipulates fees payable in the event of the contracted number of rooms not being sold or Food and Beverage revenue being lost. Supply forecasting is done only on an ad hoc basis by the revenue manager, without the Ideas system input. Revenue mix and length-of-stay control settings are usually done by the Ideas program and are based on the business on the books. The revenue manager may then adjust them if necessary.

Forecasting and the factors taken into account remained the same during the economic crisis. What did change was the number of adjustments in the automated forecast done manually by the revenue manager, and the time spent on it. In the pre-crisis period, the ratio for system versus manual forecast was roughly 80/20; during the crisis, it was 50/50. Buying behaviour from the different market segments changed, resulting in shorter lead time and more uncertainty in the business planning. Business on the books, particularly rack and international business traveller segments, decreased significantly. During the crisis, unconstrained demand (actual demand added to no-shows and denials) gave a clearer picture.

Meeting-related business became the major issue. In both pre-crisis and crisis times, the portion of group business was roughly 70% (35% meeting-related, 35% group leisure-related). During the crisis, however, there were a higher number of cancellations and no-shows, and focus on the system set-up increased to ensure correct allocation of market segments and correct rate set-ups were in place. Both demand management and capacity allocation did not change during the economic crisis. What did change was the approach to the tools used to generate the demand. In most cases, it was aggressive discounting (by as much as 26%) to attract more customers by offering better prices.

During the economic crisis there was less overbooking, due to decline in demand. In many cases, cancellation fees were waived to encourage return business from the particular organiser. Cut-off dates mentioned in contracts were in many cases moved closer to arrival dates. During the economic crisis, virtually every business transaction was accepted and special requests like early check-in or late check-out were in most cases automatically confirmed. Due to decreased demand during the economic crisis, both revenue mix and length-of-stay controls became important revenue maximisation tools. Higher incentives for both reservations and front office were given for improved sales, which proved successful.

The biggest portion of individual and group bookings for both hotels came directly to the hotel, without any intermediaries, by telephone or e-mail. Statistics showed that the portion of direct bookings was the biggest for both hotels: the HP, 83% of volume and 81% of room revenue in 2007; the HPOT, 64% of volume and room revenue in 2008. The company website (Hilton.com) is one of the major online sources of bookings for both hotels, especially for the HPOT (15% of total volume and room revenue in 2008). This channel is very important for the company not only because it is one of the most cost-effective but also because it is one of the major marketing and selling tools. Both Prague Hiltons sell through all major global distribution system (GDS) channels: Amadeus, Sabre, Galileo and Worldspan. Statistics showed that the portion of GDS bookings in the HP in 2007 was 6%, bringing 8% of room revenue, and in the HPOT in 2008 11%, bringing 13% of room revenue.

As part of the Hilton Worldwide family of hotels, both Prague Hiltons have global partnership agreements with online travel agencies (OTAs) e.g. Expedia, Travelocity, Orbitz and Booking.com. With the majority of the OTAs, Hilton hotels operate on the direct connectivity basis, which provides access to the hotels' total inventory and public rates, including chain-wide promotions. OTAs provide useful service, promoting both hotels during low-demand periods. A very small percentage of all bookings (2%), however, come through OTAs and there is an effort from the global office to get that minority of bookings through Hilton.com.

The most cost-effective channel, in terms of distribution costs, is hotel-direct because of no additional costs other than the payroll for the reservation department. A reservation booked through a Hilton Reservations Call Centre costs one of its hotels $1.50. The company website booking cost is around $1. A GDS booking, depending on the particular GDS, costs a hotel roughly $3. All these costs are fixed, regardless of the value of the booking. In terms of OTAs and traditional travel agents, the booking fee is expressed in a commission percentage and varies, based on the value of the booking. The classic commission percentage is 10%. In special cases this percentage may be lower or higher, depending on a particular travel agency. Amongst all those channels, OTAs appear to be the most expensive for hotels to work with because not only is their booking cost variable, based on the percentage, it is usually higher than 10%, reaching 25% as a ceiling figure.

Both Prague Hiltons use a rate parity clause in contracts with travel agents, which obliges them not to disclose the confidential contracted rates and to add such margins that they comply with the rate parity. Rate parity compliance guarantees the fulfillment of the Hilton customer promise of the 'best rate guarantee', which means that the guest will not find a lower price on any other channel apart from the company website, enabling guests to book directly with the hotel. The promise includes the condition that the hotel will refund guests the difference in the rate booked and the lower rate found, plus an additional $50.

Social media was one of the emerging marketing tools and booking channels for the Prague Hiltons: both have their own Facebook page, upon which marketing departments publish various promotional materials, photographs and news updates, and generally engages with customers. A booking icon on the Facebook page enables fans and Facebook users to book directly from Facebook. Twitter usage was, during the research period, not yet as advanced as Facebook. The Prague Hiltons use paid searches (pay-per-click) that allow for purchase of an advertising space on various search engines such as Google or Yahoo. The advertisements are triggered by customers searching and using a range of keywords. The cost to the hotel when a customer clicks on the advertisement varies by search engine and is dependent on the keywords used – the more popular the keywords, the more expensive they are. The cost-per-click for each keyword can be as low as a few cents or as high as $5 or more.

In order to make revenue management procedures run smoothly, there are a number of IT systems the hotels work with. A basic one is PMS Fidelio, which allows for making and storing reservations, checking guests in and out, and making all necessary payment transactions. Besides Fidelio, there is a Cris two-way interface, which transfers all the booking data from the Central Reservations System HILSTAR to the hotels' Property Management System. The most important software program for the Prague Hiltons is the Ideas Revenue Optimization tool, which is mainly for pricing and forecasting purposes and as a result serves as a revenue maximisation and optimisation tool.

During the economic crisis, the portion of direct bookings did not change for the HPOT, while the HP experienced a 1% decline. The portion of Hilton Reservations Call Centre bookings decreased for both hotels, from 3% to 2% in the HP and from 8% to 6% in the HPOT. The portion of online bookings made through the company website showed growth of 1% in the HP and of 2% in the HPOT. During the economic crisis, the channel's strategy was to increase the number of company website bookings as part of distribution cost-saving but also as the most cost-effective way to acquire new customers. After the economic crisis hit the Prague market, as part of cost-saving initiatives, participation in the GDS promotions was terminated. Despite the high costs, sales through the OTAs were pursued. Hilton marketing managers were pushing for higher commissions for the OTAs, to increase the hotels' positioning and visibility. Customers became more demanding and customer reviews gained more value and directly influenced the hotels' listing on the OTAs' pages.

During the economic crisis, the focus on costs logically became more intense than before. Distribution costs through various distribution channels did not change but the strategy of selling through these channels did change. The main aim was to shift business from more expensive to less expensive distribution channels. Driving more revenue through the company website became a main objective during the economic crisis. It became more difficult to deliver the company promise of rate parity and to 'guarantee the best rate', due to breaching of contract conditions by wholesale partners. More frequently, the confidential wholesale rates were sold online by third-party OTAs.

Market segmentation in the Prague Hiltons was based primarily on customers' buying behaviour and purposes of stay, and differentiated as individual or group business. Suggestions from Helsel and Cullen (2006), in terms of blurring market segment borders, were not reflected in this research. The fact that some customers cunningly search for and book lower rates is obvious. Incentive groups posing and booking as leisure groups (for lower rates), for example, resulted in average daily rate and revenue dilution. This development explained a shift of customers from one segment to another, indirectly resembling market segmentation blurring.

Demand-based pricing strategies used in the Prague Hiltons is in line with the literature. Similarly, rate fencing as described by Vinod (2004) was actively used in these hotels. Group pricing strategies were generated based on (but not limited to) displacement analysis, as suggested by Cross et al. (2009). Demand forecasting was based on booking patterns, market segment behaviour, business on the books, time-frame and length of stay. Manual adjustment of the system-generated forecast became more crucial during the crisis, due to the rapid change of customer behaviour and new market conditions. These findings confirmed the studies of Bobb and Veral (2008) and Schwartz and Cohen (2004).

Demand management and capacity allocation in the Prague Hiltons were maintained primarily through pricing and overbooking controls. For particular segments such as meeting business, attrition condition contract clauses served as an insurance securing the dedicated inventory. This is in line with Vinod (2004; 2009), Bobb and Veral (2008), Harewood (2006), Toh and de Kay (2002) and Carroll and Noden (2010). However, asserted distribution channels as a capacity allocation tool was only indirectly confirmed in this research. Most of the channels have direct access to the hotels' total inventory, and are restricted only in rare cases.

Findings in terms of product distribution in this research resonated with the literature in terms of main distribution channel usage, cost of distribution, and rate parity issues (Choi and Kimes, 2002; Mainzer, 2004; Gazolli et al., 2008; Vinod, 2009; Mourier, 2010). The emerging of social media was noted in the Prague Hiltons, but not to the extent that Carroll and Noden (2010) mention. We believe, however, that it is only a matter of time until the usage of social media in the practice of revenue management progresses further into the Prague market. In line with the literature, IT systems play an important role in storing, processing and analysing vast volumes of data, as suggested by Orkin (1988) and Mainzer (2004).

In summary, it can be said that market segmentation did not change during the economic crisis in the Prague Hiltons. Pricing, on the other hand, was exposed to discounting and significant rate decreases by as much as 26%, in response to overall low demand, which declined by 20%, resulting in room revenue dropping 41%. Major changes in demand forecasting occurred in booking patterns, which made forecasting based on previous periods irrelevant and projecting accurate forecasts challenging. In order to obtain the most accurate forecast, the revenue manager had to validate each Ideas-projected demand forecast, which increased the number of the revenue manager's adjustments to the system. In terms of demand management and capacity allocation during the economic crisis, aggressive discounting and overbooking were practised in the Prague Hiltons.

Contrary to the revenue management principles, all reservations were accepted, to fill the hotels' capacity. The waiving of cancellation fees served as deal-breakers for meeting events, as well as flexible cut-off dates. Special requests such as late check-outs or early check-ins were confirmed, without ensuring whether these were feasible, purely to obtain business. During the economic crisis, the focus was also on upselling as one of the revenue maximisation tools, supported by an incentive programme for the reservations and front-office employees.

There were no major changes in the product distribution in the Prague Hiltons. There was a slight decrease in volume from the Hilton Reservations Call Centre, which was a result of overall low demand, in combination with decreased popularity of this booking channel. Online bookings increased, as a result of shifting business from offline channels. Distribution costs received strong management focus, while the lack of business led management to accept business from all channels, regardless of the costs involved. Rate parity and the 'best rate guarantee' policy, however important, were difficult to maintain in tough and highly competitive market conditions.

Conclusions

This section provides a discussion of the findings and conclusions and the contribution as well as limitations of the study, together with recommendations for future research. Based on the analysis of the market segments, we found that the market segmentation structure did not change during the economic crisis. What changed was the buying behaviour of customers from different market segments. This implied, in some cases, temporary migration of some customers from one segment to the other in search of better price offers, either directly or through different strategies. Overall individual segment borders have somewhat blurred because in the search for lower rates, corporate customers could easily book special promotions found online, or worse, opaque rates up to 50% lower than the public or corporate contract rates. This resulted in rate dilution and overall decrease in revenue.

Individual wholesale promotions were aimed at increasing the occupancy base and average length of stay, and allowing for ancillary revenue streams through potential spending on food and beverages, spa facilities and other hotel services. Drastic decreases in public rates raised price war concerns from the players in the market. Several newspaper articles appeared, in which the Prague Hiltons, in particular, were accused of decreasing rates too much, and as a result forcing other establishments to follow suit. Lower leisure rates left scope for travel agencies and event organisers to manipulate bookings, which made the revenue manager and the leisure groups team more alert to groups' requests when typically higher-priced incentive groups posed as leisure groups to secure lower rates.

When the market showed signs of slow recovery and volume began to increase, it was difficult to increase rates to pre-crisis levels. In the meeting and conference segments, the situation worsened; these types of business are usually contracted some time in advance. Those meeting events in the hotels during the recession saved revenue because the rates contracted were still rather high. For meetings booked during the crisis, however, it was difficult to increase the ADR when business began to pick up, and this kept revenue-earning under pressure.

The short-term effects of decreasing rates may have been to fill rooms that otherwise may have remained open, but an establishment runs the risk of rate erosion and consequently lower revenues. In the long-term, the effect of rate-decreasing may be destructive for hotels as well as for the market they operate within. Discounting rates in order to increase occupancy inflates costs involved on a per-room basis and decreases profit margins, and leads to price wars and struggles for fair hotel market share. The reality is, however, that lower rates may not necessarily attract more customers to the establishment. When demand increases, it is generally challenging to reinstate previous rate structures: customers have then been 'educated' by hotels in finding lower prices and are more price-sensitive than they were previously.

Analysis of the forecast, and its dependability under different economic conditions, showed that the reliability of the computer system-generated forecast decreased significantly, making the forecasting process more like a 'crystal ball exercise' during times of recession. This resulted in more manual interference from the revenue manager, caused by the changing or sometimes erasing of booking patterns of the market segments. The high wash factor during the economic crisis remained one of the most important points for forecasting considerations, which resulted in higher overbooking levels, in order to avoid dilution of business and diminish the spoilage factor.

The more the Prague hotel market seemed to stabilise, the lower the 'actual wash' was for both meetings and leisure bookings. In some cases, groups converted with 100%, which resulted in a high level of business that had to be walked out. Eventually, this resulted in revenue loss due to the 'turnaway costs' in financial terms, and tarnishing of the company image and loss of goodwill for the Prague Hiltons. Waiving cancellation fees, changing cut-off dates and including cancel-and-replace clauses prevented revenue management from accurately predicting the occupancy rate and setting an optimal selling strategy for any of the group dates, which are in essence hidden factors in lost revenue. Automatic confirmation of special requests like early check-ins or late check-outs triggered service issues and failed to fulfil the customer promise, when the hotels were unable to accommodate those requests; this resulted in guest dissatisfaction and, on occasion, loss of revenue. Focussing on upselling and length-of-stay controls, on the other hand, favoured revenue and occupancy increases.

Results for the product distribution and distribution channels showed that the economic crisis had not changed much in terms of product distribution in the Prague Hiltons. Although the portion of Hilton Reservations Call Centre bookings decreased during the economic crisis, we believe that this was due more to the overall decreasing popularity of the 'voice' channel for making reservations and the growth of the Internet as primary choice for customers making hotel bookings. The increase in the portion of company website bookings supports this theory. This increase, however, also comes from efforts to convince customers booking through other channels to book using the company website.

The decline in the GDS portion of bookings was caused not only by the economic crisis, weaker buying power and lower company budgets but also by the lowering of public rates and introducing considerable discounts in the form of promotions. The number of OTA bookings in the HPOT increased due to the efforts aimed at this channel, which was contrary to the overall cost-saving strategy and also a result of the business shift from one hotel to another within the Prague Hiltons.

Multiple cases of failure to deliver the 'best rate guaranteed' not only involved direct costs of having to pay customers the promised rate difference and additional $50, but also issues in terms of service recovery, reputation and goodwill. As a result, those cases were brought to the attention of the contract-breaching wholesale partners, which in most cases was difficult because the OTAs involved would usually not disclose their rate sources. In such cases, the only way to establish which partner had breached the contract was to make a reservation through this channel, and establish which travel agent would send the relevant booking. Further investigation of such cases usually affected relationships between the business partners: frequently, those happened to be the most valued business partners of the hotels.

Although the sample of this study only represented the two Prague Hiltons, which does not allow for generalisation of the results, some interesting implications were formulated for both practice and education. The economic crisis in Prague's hotel market seemed, by the end of 2010 and beginning of 2011, to stabilise and show signs of recovery. There were, however, still 'aftershocks' and it may only have been a matter of time until the crisis resurfaced. Besides that, hotels usually find themselves in similar situations during low-demand periods, even in a stable market economy. This study, therefore, has several implications for revenue management practitioners in hotels.

The most important implication identified in this research was the need to maintain rates as far as possible. Discounting may save the day in the short term period but can be quite destructive for the overall business strategy in the long run. Rather than discounting only, hotels can offer additional value to customers without compromising the rates too much. Additional features such as free Internet use, breakfast and parking are examples to consider including in the rate. Another significant suggestion to practitioners would be to carefully follow contract conditions such as attrition clauses, cut-off dates and cancellation conditions. This is especially important for hotels which have substantial meeting-related bookings, which will not only secure the committed inventory but also assist with accurate forecasting.

Practitioners should prioritise the accuracy of demand forecasts to support their business decisions, particularly those related to group sales. There should also be extensive focus on correct segmentation and, when discounting, identifying those market segments where it is least damaging to lower rates. In terms of forecasting, the focus should not only be on the following 90 days but also on a 12-month strategy. Revenue managers should monitor the pace of booking when the arrival date approaches, in order to adjust forecasts accordingly. The use of technology remains important in revenue management practices even when booking patterns change constantly; having up-to-date systems will benefit practitioners in terms of time-saving and affording room

for manoeuvre with the data available, to achieve forecast accuracy and effective pricing strategies.

Another conclusion from this study is related to cost-effective channelling. During challenging low-demand periods, focus should remain on the direct sources of business and the hotel's own website. Chain-connected hotels usually have a strong company website and therefore invest in it more. This saves on distribution costs and secures the acquired customer base in terms of a long-term perspective. Finally, both direct and indirect channels are customer requisites and therefore strategies for both should be aligned to maximise value. If, in the long run, a hotel can build a reputation for price parity irrespective of the distribution channel, customers will, in most cases, book directly through the hotel's website. The cost of distribution should not be viewed in isolation but as part of the cost of acquiring new customers.

A suggestion for further research is to conduct a similar study, using a different research methodology, including interviews. This could enrich, validate and diversify our research findings. Secondly, the scope of the research could be broadened, to compare several markets or hotels. The same type of study could be conducted in other service sectors as well, such as small commercial businesses or the larger airline or telecommunication businesses that are usually actively involved in revenue management strategies. We see several challenges for the hotels in the recovering Prague market, besides price wars and battles for a fair market share.

Prague hotels also face external challenges; firstly, Prague's popularity as a destination has, in recent years, decreased. According to the Czech Statistical Office, the number of visitors has decreased by 7% on a year-to-year basis. Economic crisis is one of the reasons; another reason, however, is lack of investment in promotion of the city and country as a tourist destination but also as a conference and event destination. Investment in the infrastructure and congress and conference premises in the city would be necessary. Prague hotels have, through the Czech Association of Hotels and Restaurants (AHR), made several attempts to collectively address the Ministry of Tourism about development, in order to attract more visitors to the Czech Republic. The government and the Ministry of Tourism have, however, thus far not been active in this process.

Another challenge for Czech hoteliers is the strong domestic currency. In the past, the Czech Republic and Prague have been popular not only for their attractions and history but also for being relatively cheap destinations. This is no longer the case: the Czech Crown has continuously strengthened and, relative to the Euro and US dollar, has strengthened significantly over the past few years. The fact that many hotels quote prices in Euros and US dollars for foreign markets, while charging and reporting in Czech Crowns, makes the Czech Republic even less attractive and competitive compared to other European cities like Budapest or Vienna.

From 2012, the decreased VAT rate for most services and commodities will be reversed by the government, leading to a VAT rate increase from 10–20%. The announced intention of the government is expected to further deepen the crisis effects for the tourism industry and may lead to a sharp reduction of jobs in tourism. This increase in VAT percentage will also affect accommodation, thereby further reducing

the competitiveness of accommodation services relative to other EU countries. Within 24 of the 27 EU countries, reduced VAT rates are applied for accommodation services. Amongst the last states to implement this change was neighbouring Germany. Even more alarming is the fact that the overall increase in both household costs and company expenses will lead to further investigation of consumers and reduce their interest in discretionary spending, such as hotel services. This fact will ultimately lead to further job cuts in the tourism industry and thus increase unemployment and have a negative effect on the Czech Republic's economy, tourism and hotel sector.

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Embodied houses and the initiation of hospitality experiences in the Zuiderzee Museum

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It can be argued that many potentialities within society are left unused by organising hospitality venues according to modern planning practices. These planning practices regard the setting as a rational space which is predictable and manageable. By applying modern management principles to spaces of hospitality an important function of spaces of hospitality can easily be overlooked and that is that spaces of hospitality can be regarded as spaces which provide 'difference' for both host and guest. This difference in spaces of hospitality entails that hospitality space gives an opportunity to experiment with different futures, or in other words with different becomings. This article focuses on hospitality in an open air museum, the Zuiderzee Museum in Enkhuizen, The Netherlands. This is the hospitality offered by the volunteers who 'inhabit' the houses. The author researches the museum space through the concept of *urban vitalis* (Pløger, 2006)[1] in conjunction with the concepts of flow and flux to address the nature of the hospitality experience. Outcomes indicate that by 'inhabiting' houses, new hospitality experiences are initiated.

Keywords: hospitality, Macdonaldisation, sociological experimentation, *urban vitalis*, Zuiderzee Museum

[1] Pløger J. 2006. *Urban vitalis. Space and Culture* 9: 382–399.

Introduction

The Zuiderzee Museum in Enkhuizen, The Netherlands, was founded in 1948. The decision was made to develop an open air museum at the end of the 1960s. The Museum Park was completed in 1983, after years of preparation. This prov,des an image of how people used to live and work around the Zuiderzee between 1880 and 1930 (source http://www.zuiderzeemuseum.nl). The Museum aims to offer a dynamic art and culture experience. Current Zuiderzee and Ijsselmeer area subjects are often opted for with new exhibitions and activities. Water management, town and country planning and recreation open up the Museum's boundaries. The Zuiderzee Museum employs around 150 people and also boasts 140 volunteers.

This article focuses on one particular form of hospitality, found at the Zuiderzee Museum, namely the hospitality offered by the volunteers who 'inhabit' the houses. This is in contrast to the (commercial) hospitality offered by the restaurants in the museum, which is based on modern hospitality management principles. In this study, this type of hospitality is termed 'hospitality practices' to stress the rather undefined nature of the interaction. This article reflects research conducted in the spring of 2009 into the nature of the hospitality experience created by volunteers inhabiting the museum houses during the daytime. The Zuiderzee Museum was selected since it works with volunteers who inhabit the houses.

Weil (2002: 75) indicates that museums can legitimise their existence roughly through three concepts; these include the museum as 'social enterprise', the museum as 'treasure house' and the museum as 'establishment'. The museum as a social enterprise has a responsibility towards the visitor and

the visitor's experience in order to legitimise its existence. A good example of this can be found in the work of De Jong (2009), who asks the question how museums can fulfill their roles as managers of collections and interpreters of culturally sensitive Native American objects. De Jong's work covers a range of topics including design criteria for representing spirituality to visitors and sharing authority with native communities. The role of social enterprise is in contrast to the museum as treasure house and to the museum as establishment. The museum as treasure house regards its collections as ends in themselves and the museum as establishment draws heavily on its own right of existence.

Based on the fact that the Zuiderzee Museum's intent is to enter into debates with the visitor and facilitate contemporary discussions concerning societal issues, the Zuiderzee Museum can be regarded as a social enterprise and this article fits into the wider discussion of museums as a social enterprise (Weil, 2002). Weil indicates that the museum as a social enterprise draws its legitimacy from what a museum does rather than what it is (2002: 75). This article examines the nature of the experience for the museum visitor to the Zuiderzee Musuem in Enkhuizen. The approach of the article is to look at the museum through the concept of hospitality.

Lashley (2001: 4) defines hospitality as a set of behaviours which originate with the very foundations of society. Lashley argues that sharing and exchanging the rewards of labour, together with mutuality and reciprocity, associated originally with the hunting and gathering of food, are at the core of collective organisation and communality. Although he refers to later developments where there is an apprehension, fear

of, and need to contain the stranger, hospitality is primarily concerned with mutuality and exchange, and thereby feelings of altruism and beneficence. Lashley et al. (2006) introduce the concept of the hospitality lens. The hospitality conceptual lens focuses on hospitality interactions in order to analyse society. The lens focuses on the themes: host–guest transactions, inclusion/exclusion, social and cultural dimensions, laws, performance, domestic discourse, politics of space, types and sites, and commerce. Derrida states that hospitality is not a concept that readily lends itself to an objective knowledge; however, it is always at the threshold (2000: 5).

Grit (2010) uses the hospitality lens (Lashley et al., 2006) and the concept of hospitality of Derrida (2000) to study the nature of the home exchange experience. Through the lens, Grit (2010) identifies how the practice of home exchanging can be regarded and studied as an act of hospitality. However this act of hospitality can paradoxically never be fixed, which makes it the right tool to address interpersonal interactions. To address the themes highlighted by the lens, Grit (2010) develops the methodology of sociological experimentation, which is based on sociological impressionism (Lynch, 2005). In this study, Grit indicates that open-ended planning phases (Pløger, 2006) in hospitality practices can lead to valuable reflexive experiences. Grit also indicates that one of the key elements is that hospitality practices should embrace a certain degree of unpredictability. This contradicts the ideas behind modern management techniques which have, as a goal, to eliminate all insecurities by rules, scripts, procedures and regulations. Unpredictable processes in hospitality practices include own initiative, spontaneous staff members, uncontrolled narratives, mistakes and misunderstandings.

This article is particularly interested in the question: How do visitors experience the meetings in the 'inhabited' houses with regards to predictable and unpredictable interactions? The idea behind this question is that unpredictable meetings can lead to museum practices which facilitate the forming or creation of new potentialities in society. The structure of the article is as follows: first, the research methodology will be explained; second, the findings will be presented; third, literature which can help to address the experience will be introduced; and lastly a discussion is started which assesses the Zuiderzee Museum as a social enterprise. This research is the follow up of research into the nature of the home exchange experience by Grit (2010). This study of the home exchange experience aimed to contribute to exploring the dynamics of open-ended planning processes in spaces of hospitality in order to reflect upon how to open up spaces of hospitality to new potentialities.

Literature review
The first part of the literature review addresses the concepts of the *urban vitalis*, flow and flux. These are concepts derived from the work from Simmel and reflect Simmel's observations of Berlin around the dynamic developments at the beginning of the twentieth century. These concepts can help us to understand the drivers of contemporary and future museum visitors. The second part of the literature review covers concepts which address the predictable nature of the experience of the hospitality practice and include-modern hospitality practices (Zwaal, 2003: 25), experience economy (Pine and Gilmore, 1999) and processes of Macdonaldisation (Ritzer, 2000).

Since open-ended planning processes in hospitality practices are a rather unexplored area of study, this section draws attention to the work of social urban geographers who address open-ended planning processes in urban spaces, including the concept of *urban vitalis*. Although modernism is still dominant in urban planning processes, authors on urban planning processes, such as Peck (2002), Pløger (2006),Sap (2002) and other contemporary urban studies scholars, argue for new thought in terms of movement, dynamics and alternative forms of organisation. They object to the idea of a fixed make-ability and plan-ability of society, the city and space, and argue for open-ended planning processes. Peck (2002) argues that planning for chaos and continual unplanned interactions needs to be done. Pløger (2006: 393) argues that the planning process in urban environments must therefore open itself up to mutually agreeable provisional solutions that participants can agree on, without closing the debate or the decision process at that point. Pløger is of the opinion that the presence and extent of vitalist forces is what will distinguish cities in the future.

Pløger (2006) uses the concepts of proximity and masses in the work of the early twentieth-century German philosopher Georg Simmel to define specific urban vitalistic forces for the twenty-first century. By differentiating these forces, Pløger (2006) recognises resistance to being a mass, to being unnoticed, being no-one, as well as working toward living a life and the striving for individuality. Grit (2010) argues that the concept of *urban vitalis* is also applicable to the planning of hospitality practices and the concept of the museum as a social enterprise. This argument by Grit (2010) is grounded on the argument that both host and guest should be granted a certain degree of freedom. This degree of freedom makes the hospitality practice more unpredictable and relates to the concept of flux, which has a direct relationship with flow. This relationship between flow and flux is described by Simmel. Flow is a simpler harmonic gathering (Lash 2005). On the other hand, flux, according to Urry, who refers to Simmel, involves tension and conflict, a dialectic of technological social life at complex intersections of mobilities and immobilities. Urry (2007: 25) also points out that there is no simple or pure flow but rather more a vitalistic flux.

Modern hospitality practices are very much related to the concept of flow since the experience of the guest can seemingly be reduced to procedures which can be explained through the quintessence model (Zwaal, 2003: 25). In traditional hospitality management, the quintessence model can be applied by conducting an organisational diagnosis for any company in the service business sector (Zwaal, 2003) and it refers to efficient and effective systems.

Hospitality practices in the experience economy (Pine and Gilmore, 1999) are represented as stages. This demonstrates that the realm of experiences has become part of the money economy and that scarce experiences in the twenty-first century are worth money. A cup of coffee on the San Marco square in Venice becomes more expensive than the same type of coffee in the Merchant City in Glasgow. Pine and Gilmore (1999: 2) state that when people buy a service, they are purchasing a set of tangible activities which are carried out on their behalf. On the other hand, they argue that when

people buy an experience, they are engaged in a personal way by paying money to spend time enjoying memorable events staged by a company, like in a theatrical play. However one of the drawbacks of portraying the hospitality practice as a theatrical play is the highly predictable nature and the repetitive planned nature of the practice. This relates directly to flow. In the slipstream of *The experience economy* (Pine and Gilmore, 1999), several books have appeared, such as *Experiential marketing: how to get customers to sense, feel, think, act* (Schmitt, 1999); and *The dream society: how the coming shift from information to imagination will transform your business* (Jensen, 2001).

Ritzer (2000) argues that many potentialities within society are left unused by organising space based on modern planning practices. In planned or predefined hospitality space, the host and guest seem to represent stable roles and processes can be presented as staged performances. Ritzer's (2000) concept of McDonaldisation criticises modern planning processes. According to Ritzer, a constant drive to increase efficiency leads to predictable experiences. This process is defined as McDonaldisation.

Grit (2010) encourages educators, policymakers and scholars to rethink contemporary hospitality management discourses, which automatically adopt a focus on the control and management of hospitality space without considering what space does. This is in line with the museum as a Social Enterprise.

Methodology

The empirical research underlying this article was conducted through the research methodology termed 'sociological experimentation' (Grit, 2010), which is based on a focus on the evocative, predictable and unpredictable interactions in hospitality practices. The research method conducted by the observer was covert participative observation.

During the fieldwork, the research participant recorded interactions and made field notes. Richardson (2000: 525) stresses that field notes should have a private and intimate character; one can innovate, make false starts and flare up with emotions without feeling an anonymous audience at one's shoulder. Moreover, she indicates that she tried to stay close to her observations and tried to be as comprehensive as possible. I was inspired by the expression from Richardson (2000: 525) which stressed letting the imagination roam around the event and to search for patterns and larger chains of significance. The interactions are 'caught' in a triangular observation which focuses on three aspects of the event. These include a description of the event, feelings about the event, and expectations about the next event. The description of the event includes attention to the history of the event. The feelings are evocative thoughts about the event, and the expectations indicate a potentiality or future. The representation of the research findings is through evocative ethnographic writing based on the observations of three participants. The story as presented is thus constructed.

Results

It is early spring time, 2009, and I am visiting the Zuiderzee Museum in Enkhuizen with another adult and my six-year-old daughter.

What I note, walking through the open air museum are the red and white chains and the empty rooms. I enter the house, bakery, farm, etc., and all the rooms are closed off by a red and white chain and the rooms always appear to be disembodied. It is almost like the last days of Pompeii when the people had to flee from the houses. The pictures are still there, the pan is still on the stove, the coffee pot is still on the table but the people have fled for some unknown reason. Standing behind the red and white chain, I can easily imagine myself living in the village and having a warm cup of chocolate milk in the house, around the fire. It is easy to imagine, since all the elements are there. In an open air museum I always feel like a voyeur and an uninvited guest, who is somehow being stopped at the threshold. However, I like the tension of walking between the present and an imagined history. Somehow, open air museums provide me with nice opportunities to tell stories to my daughter, to connect with her in a pleasant way.

It is weekend in the museum and it is rather busy. We visit some houses and walk through the streets and enjoy the early spring sun, the small ducks, the newborn lamb and the little streets and I talk about how the village children would collect the eggs from the ducks and the chickens. We decide to have a drink and we go to have hot chocolate milk in a restaurant, which is indicated by a sign with a fork and spoon. The only thing I remember of the inside of the restaurant is the colour of stainless steel and the long distance my tray travels along a trail of cakes, fries and salads. At the end of the trail stands a busy looking employee who collects the money. The line is so long that the foam of my two chocolate milks disappears. My daughter orders chicken nuggets with fries. I also receive two cookies in a wrapper and a silent 'enjoy your meal'. We finish the 'meal' and find a place where we can hand in our trays.

We continue to walk through the streets of the museum and I feel bored. I have told all my stories about my partly imagined childhood based on books and movies. I look for some more inspiration to tell the next story to my daughter. I see fragments of nineteenth-century lives under a pale blue sky but have some difficulty in tying them together.

Suddenly, I see someone moving in one of the houses. My daughter looks through the window and we see a friendly face inviting us into the house. We walk to the door and go in. By entering the house, the house seems to become a home. The home smells of coffee and in the corner there are imitation nineteenth-century children's toys. My daughter runs to the toys and starts playing in a warm environment. The woman who invited us in appears to be in her early sixties. She offers us tea and invites us to join her at the kitchen table in front of the window. We accept the invitation and sit down. She serves freshly made tea with home-made cookies and starts a pleasant conversation. I look out of the window and my world changes. I have suddenly become a part of the village; I see people walking past my window and I see the little ducks, and hear my daughter interacting with the lady. We enjoyed each other's company and stay in the house for two hours. The lady is a volunteer who lives in the house. We speak about studying and living abroad. My daughter says that she has found a new grandma and wants to come back. We leave the house and walk through our street. The museum is closing and it is getting dark.

Discussion

The example of the hospitality offered by the volunteer in the Zuiderzee Museum shows what museums are capable of and that they can find a direction which moves away from predefined flow experiences, McDonaldisation and the experience economy whereby interactions are seen as prepared and pre-produced and thereby fixing the idea of hospitality.

This article had as a research question: How do visitors experience the meetings in the 'inhabited' houses with regards to predictable and unpredictable interactions?

The findings of this research show that the hospitality experience for both volunteer and museum visitor are not based on a 'simple' organisational exchange mechanism but originate from a desire deep within to interact with others. The 'simple' museum interactions relate to flow. Temporary inhabitants 'embody' the houses in the open air museum, creating new layers of significance and thereby moving the experience to flux. The concept of *urban vitalis* (Pløger, 2006) can help us to understand the interaction. Visitors in the museum search for recognition and interactions which go beyond the planned commercial interaction at the end of the restaurant's kitchen where the trays pass the cash register. The findings show that visitors are looking for possibilities to build their own temporary 'organisations' on top of exiting organisations and to live through these by creating new museum spaces based on open-ended planning space whereby both volunteer and visitor have the potentiality to interact more freely. The museum becomes a less predictable practice, invites flux experiences and enhances new potentialities in society.

As indicated in the introduction, the museum as a social enterprise has a responsibility towards the visitor and the visitor's experience in order to legitimise its existence. By facilitating flux experiences, a museum takes this responsibility and facilitates a space where yet unknown interactions might take place. However, in engaging these complex flux interactions, the museum needs to make sure that it somehow manages these forms of hospitality. This process of managing creates an exciting, paradoxical situation. Implications for museums include the rethinking of their hospitality management strategies.

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The role of the hospitality industry in balanced use of natural resources on Bali

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Popular tropical islands often face problems with water supply, especially islands like Bali where 80% of the economy depends on tourism and a healthy water supply. Mismanagement of natural water resources leads to a water crisis. This articles focus on sustainable water use by the hospitality industry.

Keywords: sustainability, drinking water, rainwater, solar water disinfection (SODIS)

Introduction

Each hotel room in Bali represents a consumption of 3 000 litres of water a day, compared to the 200 litres used by the average Balinese (Burrows, 2012), therefore the greatest gain with respect to reducing water use is achieved by transforming water use in the tourist industry. With Indonesia reaching sixth place of the world ranking of consumption of bottled water (Rodman, 2010), it is time to investigate whether the production, transport and use of all those bottles is really necessary.

The watering system of the rice paddies of Bali, dating from the eleventh century (Lansing, 2007) is under pressure. Hotels have dug deep wells, with electric pumps, so that they do not have to rely on the public water supply. Water tables have dropped because of these high demands,making the shallower wells of the local people useless. Meanwhile, 260 of 400 rivers have run dry and Bali's biggest natural reserve of water, Lake Buyan, has dropped 3.5 metres in three years (Fogarty, 2007). 'During the wet season, lots of water flows to the sea and then in the dry season we face a bad problem. That's the main issue, how we manage the water so that it can be used throughout the year' (Dalem, as quoted by Fogarty, 2007).

With this article, I want to focus on the basic water needs for drinking and food preparation. What measures can be taken to reduce the impact of the hospitality industry and prevent damage to the historical self-sufficient resources available on an island? And why should hotels and resorts do this?

Drinking water considerations

Making a choice – what sort of tourism do you want?

Quality water is required for drinking purposes, post-mix lemonades and soft drinks, ice cubes, tooth brushing and non-boiled food preparation. For many other purposes, grey water or water of lesser quality will do. This leaves more water for local production of food. Food that you can produce locally doesn't need to be imported, lessens the carbon footprint, provides affordable food for locals, and preserves local touristic features like rice paddies. It's also a matter of what you want to offer to the visiting tourists – another golf course that demands 3 000 000 litres of water a day, or a characteristic picture in front of a rice paddy, local food and a balanced life for the locals.

Bali does have sustainable local water resources. For example, all the water of the taps in the Bali Eco Stay are from a volcanic spring. They even provide it to hikers passing by to fill up their bottles, and to local villagers. Their business embeds both sustainable and social values. Their drinking water provisions contribute to the wellbeing of local villagers as well.

Bali has rainfall throughout the year, with above 300 mm per month in December through March and even 35 mm in the driest months, July and August. I investigated rain water as one of the purest sources of tasty drinking water with little chance of contamination if a few simple precautions are taken when harvesting and storing the water. These precautions include the following:

- Choose appropriate roofing as a harvesting surface – a metal surface can get hot enough to sterilise itself in subtropical regions, which is an advantage (zinc is suitable, whereas lead is not recommended), while concrete is very rough so that debris sticks onto it and natural materials like leaves provide little run-off efficiency;
- Install gutter screens if a lot of leaves fall onto the roof;
- Use a first-flush system, where the first part of rainfall run-off with dust or bacteria will not enter the storage tank;
- Prevent mosquito activity and light from entering storage tanks by closing them off. Underground tanks are a good option;
- Minimise overhanging trees to prevent animals such as rodents, monkeys and cats from getting up onto the roof. Birds should also be discouraged where possible; and
- The infection vector from bird and animal contamination is relatively small, however, and the first-flush system plus disinfection by chlorination, artificial UV radiation or the more environmentally friendly natural solar radiation can eliminate this.

Rainwater harvesting becomes unsuitable only where there is a lot of contamination in the air because of industrial activity or a volcanic outburst. Taste-wise, rainwater can compete with A-brand mineral waters. Nowadays, this quality still water can easily be carbonated to make sparkling water or used in hot water systems. The chances of contamination are very low because rainwater is not polluted by industry, nor by human or animal waste, as groundwater may be. Expressed in terms of carbon footprint,rainwater harvesting really makes a difference,especially if the water is served in reusable bottles. It also reduces the transport of plastic bottles, which mostly end up in landfills and which otherwise increase the carbon footprint by the energy required for their manufacture, assembly and recycling.

Small-scale methods with high potential
Non-governmental organisations (NGOs), charities and aid initiatives have been very active in developing small-scale sustainable solutions for providing healthy drinking water. Their research has contributed in many ways to eco-friendly water provision that is easy to adapt to small-scale eco-hotels and resorts. It is also an eye opener for larger properties to see what they can learn or how they can support the local community.

There are two major sustainable developments that I would like to mention here. First, there are the home rainwater harvesting methods (Thomas and Martinson, 2007) that have improved many lives around the world,resulting in lower levels of diseases and time saved for children to attend school instead of having to collect and carry water.

The second method is disinfection by UV radiation if further disinfection of the available water is required. This method is called SODIS (solar water disinfection) and is used worldwide to clear drinking water from bacteria, viruses and parasites, thereby eliminating cholera, dysentery, typhus, giardiasis, hepatitis, polio and diarrhoea. This is the most eco-friendly disinfection method, not using any chemicals but only the sun's rays. The most favourable regions are located between 15° N and 35° N and 15° S and 35° S. The second most favourable region is between the equator and 15° N/S. Bali is situated around 8° S. Because of the humidity,the sunlight is more scattered but still amounts to around 2 500 hours of sunshine annually. If you fill a clear plastic bottle or very clear glass bottle like borosilicate glass and leave it in the full sun for six hours (double the time on cloudy days)it will be disinfected. In the next two days,the guests will have the tastiest, most sustainable and reliable drinking water they ever had. Large-scale natural solar systems have been tested over the last few years. Artificial UV radiation is an easy-to-control alternative available at the moment for larger properties.

Practical reusable bottles for the hotel environment
In the restaurant, you can serve drinking water in a carafe, fill the glasses from a bottle, or put small bottles next to a guest's glass. You can serve the water sparkling or still. What about a tap next to the pool,where the guests can refill their own reusable bottles (provided or bought at the check-in). Let guests change their water bottles for clean ones. If they have mini-bars in the room, provide them with recyclable bottles as well. Let them fill up the bottles if they go out of the resort and visit other places without the need to buy commercial bottled water on the way.

I investigated many recyclable bottles for over a year for their suitability for the hospitality industry. There are several products which fulfil professional hotel requirements,for the following reasons:

• Wide mouthed	• Replaceable lids
• Professional dishwasher proof	• Social engagement of producer/supplier
• Hygienic	• Options for logo or message on bottle
• Responsible raw materials	
• Colour-fastness	• Different bottles for different styles (e.g. eco or design style)
• Responsible production process	• Durability.

Why serve sustainable drinking water?
A recent survey (Cole, 2012) showed that less than 20% of tourists had noticed their accommodation making any efforts to conserve water or encouraging tourists to do so. However, 95% of tourists thought they should. The pressure to change is unlikely to come from tourists as nearly *90% of the 110 tourists surveyed thought Bali had plenty of water*. Encouragingly, nearly 70% said they would make an effort to conserve water and wanted more information to help them; 36% would be prepared to pay an environmental tax on their bill to help save water and a further 12% would make a voluntary contribution.

A similar study on the holiday island of Zanzibar (where hotel room water usage is 16 times that of the average local family and half of the rural population has no access to a water resource) found that less than half of the indicated tourists said that they were aware of water issues in Zanzibar. Although 60% described themselves as committed to environmental sustainability, most delegated responsibility to their hotels. However, over half felt it would be acceptable to increase the cost of their holiday to pay for improved water infrastructure.

Recent research has shown that:
1. A large,worldwide study with over 10 000 respondents in ten leading countries found that when price and quality are about the same, 94% of consumers of are likely to switch brands to one associated with a good cause (Cone/Echo CR Opportunity Study, 2011).
2. In the same study,88% of respondents agreed that the role of business in society is to change it. The key factor of companies' responsibility they found the way the business operates 31%. So the message is: adapt your operations!
3. One of the six key motivators for people to spend more on a holiday is the eco-friendliness of their stay. A growing number of holiday search websites have included this aspect in their search options. From the bookings made with TripAdvisor, a study revealing travel trends concluded that 12% of travellers based their bookings on it (TripAdvisor, 2012).
4. Additionally, the International Ecotourism Society has found that more than two-thirds of US travellers consider active protection of the environment to be part of a hotel's responsibility. Hotel guests are starting to view environmental initiatives as a basic feature of a hotel (Chafe, CESD, Ties, 2005)
5. 'Greenwashing' is a concern to one in three travellers. It has been found (Seven sins of greenwashing) that 31.5% of

travellers felt that some green practices were just for public relations and had little substance. So you need to explain what you are doing and why you are doing it. People want to learn about the issues both before they travel, and while they are at their destination. That it saves the business money is a bonus.

Discussion

There are many local opportunities to serve sustainable drinking water on tropical island resorts and hotels. Implementing them can increase sales, improve image and reduce costs, carbon footprint and negative local impact. Consumers and guests see it as the role of the hotel to take this initiative.

Sustainable drinking water is a unique (social) marketing tool to distinguish one business from another. At the moment, it is underrepresented in terms of attention, but the economic, social and ecological potentials are huge.

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Umami in wine

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The positive effects of *umami* on flavour are widely documented, but as far as the author is aware, wines are not mentioned in *umami*-related literature; *vice versa*, in wine-related scientific publications, references to *umami* were not found. In the fermentation and subsequent ageing of wines there is ample opportunity for *umami* compounds to develop. *Umami* refers to the taste of free glutamic acid (Glu), an amino acid that can be present in the taste of wine as a result of the grapes used and the applied vinification techniques. Some techniques are likely to enhance the presence of Glu in wines, especially fermentation on yeast lees, a common procedure in the manufacture of many prestigious Chardonnay wines. During the malolactic fermentation, the relative content of Glu is also likely to increase. Sweet wines like Port and Madeira are also reported to have considerable amounts of Glu. In dairy fermentations, such as in cheese, there is sophisticated knowledge about the specific flavours and textures that are formed by different starter lactic acid bacteria. They provide desired enzymes which yield small peptides and free amino acids that give a certain cheese its specific character. As amino acids are also precursors of various volatile flavour compounds such as aldehydes and alcohols the development of specific wine yeasts that could impart specific desirable characteristics to a wine could prove to be an important venture in the production of successful wines.

Keywords: amino acids, fermentation, flavour, glutamic acid, palatability

Introduction

Umami *and flavour*

Umami was discovered in Japan in 1908 by Professor Kikunae Ikeda who noticed a taste compound that was distinctly different from sweet, sour, bitter or salty. It is not an outstanding taste and often hard to identify, but indispensable in creating harmony with other tastes. It gives a sense of fullness and roundedness in the mouth. It is also described as 'balancing and blending', giving 'continuity', thickness and, in general, a feeling of satisfaction. These effects on flavour are attributed to glutamic acid (Glu), one of the most abundant of all amino acids found in food protein (Yamaguchi and Ninomiya, 1998). *Umami* does not need to be specifically identified by the consumer. Its flavour-enhancing effect occurs even if the concentration is too low to allow the taster to detect its specific taste (Bellisle, 1999). Ikeda named this taste quality *umami*, which means 'delicious' in Japanese. He originally proposed 'glutamic taste' for the English term which was, however, seldom used however, and initially *umami* as a taste quality did not attract much public attention. On the other hand, the food industry quickly discovered its interesting properties and the sodium salt of L-glutamic acid, monosodium glutamate (MSG), was almost immediately produced commercially and is now manufactured worldwide on a large scale. Monosodium glutamate is increasingly used in processed foods in the West as well as the East although traditionally in the East, the per capita daily consumption is higher than in the West. In the USA, the mean daily intake is estimated at 550 mg, and in Korea at around 4 g (Yamaguchi, 1998; Bellisle, 1999).

The extensive use of MSG as an additive could lead to a one-sided view of *umami* as a taste quality. Monosodium glutamate and Glu are closely related, and yet they are different. The first is the sodium salt of the second. Regarding the consumption of MSG, it has been suggested that there are health risks involved. Nevertheless, the Food and Drug Administration (US) and the World Health Organisation consider the use of MSG to be safe. There are many natural products and well-known fermented products that elicit the *umami* effect, many of which have been used for ages. In general the following categories of *umami* sources can be identified:
• fermented sauces
• lactic acid bacteria fermentations
• ageing and ripening
• concentrated extracts
• natural products

Fermented sauces

The Romans produced *Garum* or *Liquamen* in Pompeii: a fermented fish sauce which was extensively used for seasoning. The procedure for making it was very similar to the way it is still made today in many Asian countries: salt is mixed with fresh fish or shellfish and fermented for various lengths of time, to enable enzymes to digest the meat. The residue is filtered and the obtained sauce is rich in Glu and is used to give the desired *umami* taste to dishes. Fermented seasoning sauces have many origins: not only fish but meat or beans (soy) can be used. In fact, commercial MSG is produced by the hydrolysis of proteins

in wheat gluten or soy or from sugar beet molasses. Kikkoman soy sauce is probably the best known example of this category (Yoshida, 1998). In such fermented sauces, free glutamate is a result from an enzymatic process that decomposes protein during fermentation.

Lactic acid fermentations
These can be another source of GLU. A well-known example of this category is aged cheese, especially traditional Parmesan, which matures for two years. In this maturation process, freshly made cheese loses its firm, tough and curdy texture to become at first soft and mellow. In further ripening, it dries and the flavour becomes concentrated. In this process, protein is progressively broken down into smaller peptides, while there is a gradual accumulation of free amino acids. Of these, the content of Glu is often predominant (Ninomiya, 1998; Lawlor et al., 2002). In culinary practice, Parmesan cheese is not only savoured as cheese but also used as seasoning. Sauerkraut, cucumber and other vegetable pickles and olives are other examples of lactic acid fermentations (Steinkraus, 1997).

Ageing and ripening
 Glu is also known to accumulate in the ripening of hams and sausages (Ninomiya, 1998; Hierro et al., 1999). In general, amino acids are common in microbially-fermented foods and drinks, which implies that micro-organisms like bacteria and yeasts are major (but not exclusive) sources of free amino acids (Brückner et al., 1995).

Concentrated extracts
Concentrated extracts like broths and stocks are another source of Glu. All major world cuisines use some kind of stock as a base ingredient. In Japan, it is called *dashi* ('boiled extract'); in China *tang*; and in France *glace de viande*. Further reductions of stocks result in pastes like Marmite, which is popular in the United Kingdom. The laborious process of making a good stock has always been an indispensable part of a cook's training, all over the world (Yoshida, 1998).

Natural products
Besides the abovementioned types of products that provide *umami* taste, free Glu is naturally present in all kinds of foods like milk (including human milk), eggs, beef, poultry, seafood, seaweed, tomato, potato, mushrooms, green asparagus, green peas, cabbage, cauliflower, garlic and corn. Animal protein may contain from 11–22% and plant protein as much as 40% glutamate by weight (Tapiero et al., 2002). Of the vegetables, tomatoes are especially rich in Glu, the content of which progressively increases during ripening. High levels are found in fully ripe and overripe tomatoes, particularly in dried tomatoes (Ninomiya, 1998). Clearly, tomato sauces of all kinds are the *umami* component of Italian cuisine.

   Besides its own taste, Glu is known to affect the perception of other tastes: sweetness and saltiness are enhanced, while sourness and bitterness are diminished (Tapiero et al., 2002). In the literature, there are many reports that oligopeptides also elicit *umami* taste. Although it may be expected that L-glutamyl oligopeptides do have *umami* taste, van den Oord and van Wassenaar (1997) reported that such peptides did not, implying that the *umami* effect of Glu is highly specific. Peptides have other organoleptic and 'functional' properties,

like solubility, viscosity, gelation, emulsification and foam formation. As such, they may be important for *umami* to emerge (Siebert, 2001). However, of the amino acids and related structures, it is exclusively the L-form of Glu which evokes the *umami* taste. Besides Glu, there are three kinds of 5'-ribonucleotides that contribute to the *umami* sensation: IMP (inosinic acid, found in animal sources), GMP (guanylic acid, more abundant in plant-based foods and mushrooms), and AMP (adenylic acid, which is present in fish and shellfish). There is a strong synergy between Glu and these ribonucleotides, implying that the *umami* taste is strongly enhanced by a combination of the two (van den Oord and van Wassenaar, 1997; Ninomiya, 1998; Sclichtherle-Cerny and Grosch, 1998).

   Just small amounts are needed to enhance palatability. Yamaguchi (1998) reported that only 0.6 g of *umami* substances were needed to significantly increase the feeling of satisfaction during a meal. Foods with *umami* are considered to be more palatable and are spontaneously eaten in greater amounts, as evidenced by a faster eating rate, less chewing, quicker swallowing and shorter times between bites (Bellisle, 1999). The presence of *umami* compounds is one of the Critical Success Factors that determine the palatability of foods (Klosse et al., 2003). Remarkably, in many *umami*-related publications, wines are not mentioned; *vice versa*, in wine-related scientific publications, *umami* has never been mentioned, as far as I am aware. Yet, in the fermentation and subsequent ageing of wines, there is ample opportunity for *umami* compounds to develop.

Umami *sources in wine*
The presence of amino acids in wines has been reported, as well as the presence of Glu specifically. Yet, in these reports no direct references are made to *umami*. Rather, amino acids seem to be considered as interesting differentiators to classify wines. This possibility is reported by Kim et al. (1996), Košir and Kidrič (2002) and Soufleros et al. (2003), the last-mentioned citing many such analyses in his report. Differences in grape variety, vintage years, grape-growing regions, fermentation and ageing lead to different profiles of amino acids and, subsequently, of peptides and other related compounds. As the focus of these studies was not on the effect that these compounds specifically have on the flavour of wine, no comprehensive overview of these effects was found. Results that were found are hard to compare, due to differences in analysis and objectives. Fragments are presented here and compared to *umami* effects that have been described in other foods.

Grape variety and maturity
The maturity of grapes is strongly related to both the amount and composition of amino acids to be found. Arginine (Arg), proline (Pro), alanine (Ala) and Glu have been reported to be the major free amino acids in many *Vitis vinifera* grapes. Their concentration generally increases with berry maturity. Glu is predominantly found in the grape skin (Lamikanra and Kassa, 1999).

   Soufleros et al. (2003) reported that in their research into Greek wines, chardonnay grapes yielded the highest mean concentration of primary amino acids (total of means: 618 mg/l). Arginine was highest, followed by Ala, Glu and γ-AB (γ-aminobutyric acid). They compared these results

to a study on chardonnay wines from the cool Somontano region in northern Spain (the Pyrenees) where 265 mg/l was reported as a mean value, with the same four amino acids being dominant. The large difference between these mean values can possibly be attributed to the difference in climatic conditions in Somontano and Greece.

These observations point to the conclusion that wine made from berries that were not fully mature due to climatic conditions or harvesting choices (i.e. harvested before full maturity is reached) have less *umami* potential. Next, that red wines are likely to be richer in Glu compared to white wines, as grape skins are by definition included in the vinification. 'Skin contact' (or in French *macération pelliculaire*) before fermentation is likely to enhance the *umami* effect in white wines, as grapes are pressed before fermentation, leaving only the juice to ferment. Late-harvest choices are likely to be beneficial to *umami* potentiality in both white and red wines. A prerequisite is that Glu is not (fully) consumed during the alcoholic fermentation.

Alcoholic fermentation – influence of yeast
Wine is the result of an alcoholic fermentation of grapes. Basically, in this process, sugars are rapidly converted to ethanol and carbon dioxide by yeasts which are found on the grape skin. During the alcoholic fermentation, amino acids are an important source of nitrogen for the yeast to grow. In this respect, several amino acids undergo a series of biotrans-formations, giving higher alcohols, aldehydes, esters and ketonic acids. As such, amino acids are both important for the success of the fermentation process and for the result of it in terms of aroma, flavour (including texture) and alcohol. After fermentation, the same amino acids are as abundant in wine as in grapes. Generally, Arg, γ-AB, Glu and Ala are reported as being the primary free amino acids in wine (Soufleros et al., 2003). Although the amount of each amino acid in wine varies widely according to variety, yeast and bacteria strain, region, treatment and age, these differences withstand the alcoholic fermentation, which supports the use of amino acids analyses for differentiation purposes (Nouadje et al., 1997).

The role of yeast in the alcoholic fermentation requires special attention. Indigenous yeasts are found on the surface of grape berries and they will spontaneously start a fermenta-tion process. As the outcome of such a spontaneous process is highly unpredictable, most modern professional winemakers use specially selected starter cultures of the *Saccharomyces cerevisiae*. Pretorius and Bauer (2002) reported that pioneering winemakers demand starter culture chains with a whole range of specialised properties that can add value to the final product. Such demands are common in the making of cheese, where the use of special starter lactic acid bacteria is a common procedure. There is a need for the development of wine yeasts that could impart specific desirable character-istics to a wine (Pretorius and Bauer, 2002); they mention a number of targets for the genetic improvement of wine-yeast strains. Typically, no specific references are made to the contribution of yeast in the development of Glu. I propose to add this target to the already extensive list.

Malolactic fermentation
Yet another type of fermentation that can be applied to wines is the malolactic fermentation, in which the organic malic acid

is converted to the softer, also organic, lactic acid. Soufleros et al. (2003) reported that in this lactic bacteria action, the amino acid concentration generally reduced, from 490 mg/l to 315 mg/l. Interestingly, the Glu content remained about intact (36.3 mg/l *versus* 36.5 mg/l after malo). This implies that its relative proportion increased by 70%, from 7% to 12%.

Special types of fermentation: sweet wines and méthode traditionnelle
Sweet wines are often made by stopping the fermentation naturally or by the addition of alcohol, and are characterised by much higher amino acid values than dry wines. Soufleros et al. (2003) reported 810 mg/l for sweet wines and 351 mg/l for dry wines. The use of overripe grapes, not fully fermented, may account for this observation. In port wines, a mean value was reported of 1 345 mg/l and in port imitations, 2 016 mg/l (Herbert et al., 2000). Brückner et al. (1995) reported high amounts of Glu in fortified wines, in general (madeira, sherry, port), which is also related to the maturation of these wines for several years.

Sweet wines are also made from very mature grapes that have been affected by the *Botrytis cinerea* or 'noble rot', a fungus which grows on the skin of the grapes. It gradually punctures the skin, enabling moisture to escape, while concentrating other elements such as amino acids.

In the traditional method of making sparkling wines ,such as champagne, a sweet substance with yeast is added to still wine. A second fermentation takes place in the bottle, preventing the CO_2 from escaping and also leading to an increase in amino acids, as a result of autolysis of dead yeast. Sparkling wines produced with the *cuve close* method (not in bottle, but in large vessels) exhibited lower amino acid concentrations (Soufleros et al., 2003). Prestigious champagnes are aged up to five years or even longer on their lees. The flavour of these wines is notably softer and more complex than wines that have aged less long. I hypothesise that analysis will show a considerable rise in Glu.

Other sources: ageing, 'sur lie' and 'batonnage'
The same process as mentioned above is seen in the vinifi-cation of white wines which are kept on 'their lees', such as white burgundies and muscadet sur lie. Wine lees consist mainly of dead yeast cells. After some weeks, an enzymatic process called autolysis commences. This process yields nitrogen compounds, polysaccharides and glycoproteins and can be enhanced by stirring the wine (in French, *batonnage*), thus keeping the lees in suspension. Feuillat (1994) reported that in this process, the amount of amino acids is likely to increase over 60%, but these were not specified in this paper. From an organoleptic point of view, several studies have indicated that wine ageing on lees led to well-balanced and smooth wines (Salmon et al., 2002).

The accumulation of amino acids is also reported to continue with ageing. However, this aspect has been poorly studied longitudinally and the results are difficult to interpret due to the many variables involved (Ancín et al., 1996; Nouadje et al., 1997).

Future ventures
Wine is a complex mixture of several hundred compounds. Besides water, principal components are alcohol and

organic acids; residual sugars, CO_2 and tannins may also be present. The flavour profile of a wine is the result of a balance between these principal components (Peynaud, 1980). Therefore, the flavour profile of wine cannot solely be explained with an analysis of amino acids, although their role in flavour is likely to be underestimated. The positive effects of Glu on flavour are well documented. Nevertheless, the *umami* connection in regard to the flavour of wine has apparently not been made. It is likely that Glu would render wines that are complex and rich in flavour. The potential amount of Glu is likely to be influenced by many variables such as grape variety, fermentation methods and ageing. In view of the fact that there is a chronic overproduction of wine (estimated at five billion litres annually) and that consumer preference has shifted from basic bulk wines to premium wines or even better, the wine market has become highly competitive. To be commercially successful in such an environment, wine producers must produce palatable wines that can meet consumer demands. Innovation at all levels of the value chain is a necessity (Pretorius and Bauer, 2002).

In this respect, the wine world might benefit from years of experience and scientific development in the dairy sector. In dairy fermentations such as in cheese, there is sophisticated knowledge about the specific flavours and textures that are formed by different starter lactic acid bacteria. They provide desired enzymes that yield small peptides and free amino acids that give a certain cheese its specific character. As amino acids are also precursors of various volatile flavour compounds such as aldehydes and alcohols, it is considered important to study the reactions of lactic bacteria, not only to ensure the required result but also to prevent the development of undesirable, off-flavours (van Kranenburg et al., 2002). Taking advantage of the biological properties has led to a substantial rise in value, both organoleptically and in the greater safety and nutritional value of bread and cheeses. They provide proof for what is possible when fermentation processes are well understood (Desiere et al., 2002).

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RHM

A traditional versus a constructivist conception of assessment

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This paper reports a study on conceptions of assessment held by students and instructors. The conceptions of assessment are considered to be one of the four interrelated sets of conceptions which together constitute the conception of education. The three other sets are the conceptions of (1) knowledge, (2) learning, and (3) instruction. Conceptions of knowledge were measured using an adapted version of the Epistemic Beliefs Questionnaire (EBQ). Conceptions of learning and instruction were measured with the Teaching and Learning Conceptions Questionnaire (TLCQ) developed by Elliott (2002)[1], and Chan (2004)[2]. Since no instrument was available to measure conceptions of assessment, an experimental Conceptions of Assessment Scale (CAS) was developed and tested. Students filled out a 32-item forced-choice version, while instructors filled out a 25-item version in a four-point rating format. On all three instruments a dichotomy was created to distinguish subjects with 'traditional' conceptions from the ones with more 'constructivist' views. Results indicate that students and instructors hold different conceptions of assessment. Students have more traditional conceptions of assessment than instructors. With regard to conceptions of knowledge, students are more traditional than instructors. The conceptions of teaching and learning also show students to be more traditional than instructors. With respect to the congruency of conceptions of education, students seem to be equally (in) consistent as the instructors. An important implication of the present study is to pay more attention to the alignment between the educational philosophy of an institute and the conceptions of education held by its students and instructors.

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Introduction

Conceptions of education

Every educational programme can be considered to be an operationalisation of a particular educational philosophy. Using the main areas of philosophy as a framework, we could say that the educational philosophy consists of particular ideas about knowledge and knowing (epistemology), the nature of being (ontology), acting (ethics), reasoning (logic), and the supernatural (metaphysics). In this paper only the first of these five areas will be more closely examined. While epistemology is often defined as covering both the nature of knowledge as well as the nature of knowing (Hofer and Pintrich, 1997; Hofer, 2000), we prefer to split the two parts. Our definition of epistemology will be restricted to the first part, which concerns a subject's conceptions of knowledge. The second part, on the nature and process of knowing, will be categorised as conceptions of learning. Both sets of conceptions are supplemented by two further sets of conceptions, about instruction and assessment, together creating what we identify as a conception of education (see Figure 1).

We further assume that all conceptions of education are located on a continuum ranging from a traditional to a constructivist orientation toward education (Samuelowicz and Bain, 2002). Some indicators for each of these two broad orientations are included in Figure 1.

The success of a particular conception of education as propagated by a particular institution will depend on the successful implementation of its principles and policies. Implementation in turn will depend on the acceptance and actions by staff and students. We hypothesise that if the institutional and individual conceptions of education are in alignment, improved performance will be realised.

Beside the match between the conceptions of education held by the institution on one side and by the students and instructors involved on the other, we are also interested in the internal structure of the four constituent parts of a subject's conception of education. More specifically, we like to find out whether someone can have a traditional conception of knowledge while at the same time embracing a constructivist view on assessment. Is the orientation on all four subsets of conceptions independent of or dependent on each other?

First, the different sets of conceptions will be explained, starting with conceptions of assessment.

Conceptions of assessment

Conceptions of assessment have to do with the format,
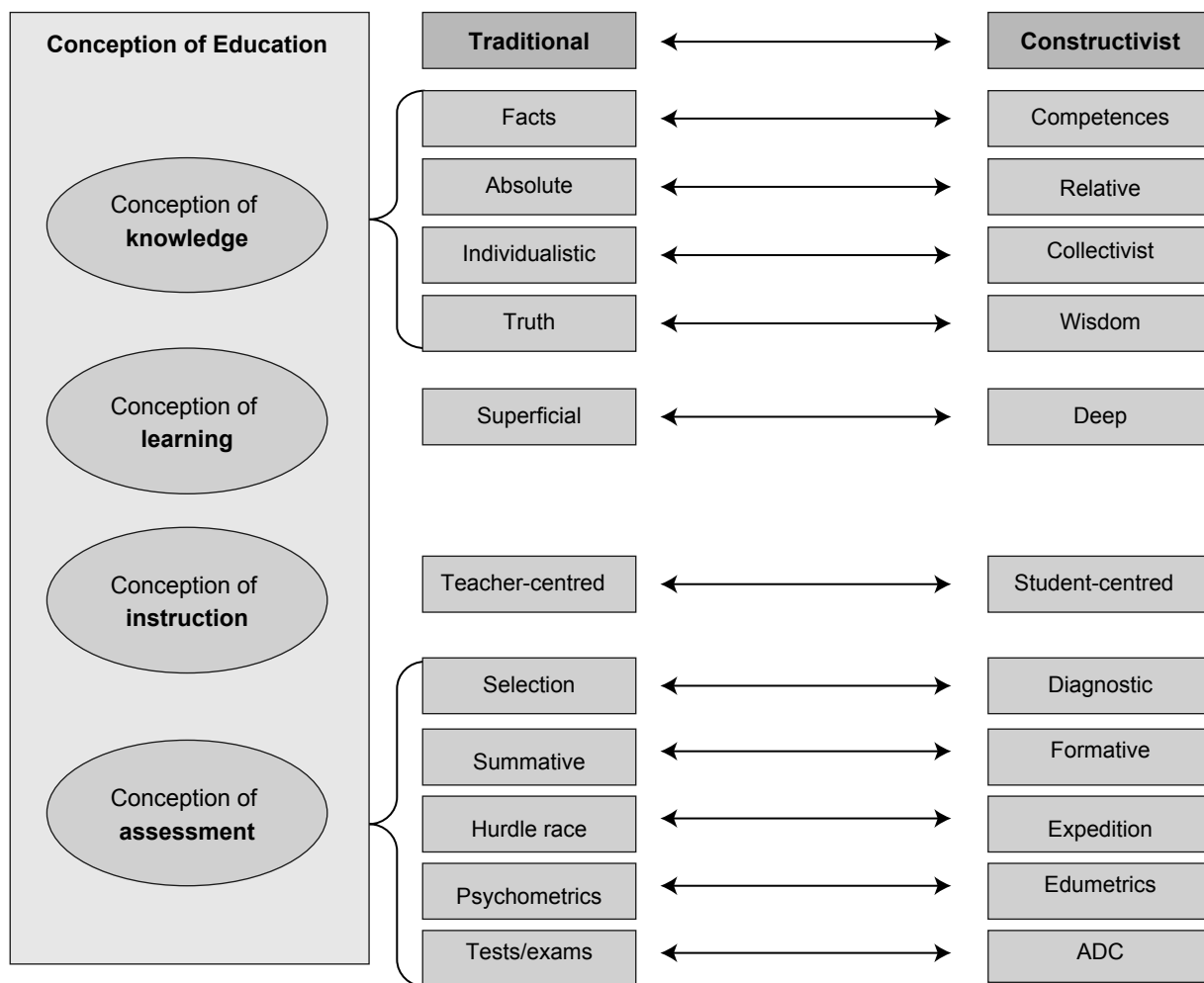
Figure 1. The four constituent parts of a subjects' conceptions of education

function and timing of assessment. The goals of assessment and the content of the subject matter will determine the format and tools to be used. In a traditional orientation, the focus is expected to be on acquiring factual knowledge, which is measured by tests and exams. Constructivist assessment is expected to focus more on competencies (as integrated units of knowledge, skills and affections) and more complex tools like assessment and development-centred exercises. With respect to the function of assessment, a distinction can be made between summative and formative uses, the former focusing on pass/fail decisions and selection, the latter more targeted at diagnosing strengths and weaknesses, assessment for learning and adapting programmes to students (allocating them to appropriate tasks). The timing of assessment can differ from the more traditional approach, in which the test is disconnected from and put at the end of the learning process, to the constructivist stance, where assessment is closely linked with learning and instruction, including active participation through self and peer assessment. Testing in the traditional approach can be seen as an individualistic hurdle race, in which students can fail at any new hurdle, while in the more constructivist expedition model, students and instructors

both take up the responsibility to get to the finish as a team. A final distinction made in Figure 1 is a shift in focus from traditional psychometrics toward what has been called edumetrics, expanding the traditional criteria of reliability and validity with aspects like consequential validity and learning-value.

Overall, the development from a traditional to a constructivist conception of education has been summarised, particularly with respect to assessment, as a shift from a test culture to an assessment culture (Birenbaum and Dochy, 1996) or from a measurement model toward a standards model (Taylor, 1994; Maclellan, 2001). To be able to make a successful transition from the traditional toward the constructivist conceptions of assessment, there needs to be alignment with the other sets of conceptions (Biggs, 2003). And although much research is available documenting the notion that assessment has a profound influence on the behaviour of both students and instructors, much less is known about the mutual relations between conceptions of assessment, conceptions of knowledge, and conceptions of teaching and learning. Can students and instructors combine a traditional conception of knowledge with a constructivist view of assessment? Does the trend toward a constructivist conception of

education equally affect all sets of conceptions? And what about the differences in conceptions between students and their instructors?

One of the few studies on conceptions of assessment was performed by Brown (2004), who identified four different conceptions held by teachers: improvement of teaching and learning, school accountability, student accountability and treating assessment as irrelevant. On average, teachers agreed with the improvement and school accountability conceptions, disagreed that assessment was for student accountability and rejected the view that assessment was irrelevant (Brown, 2004). Improvement, school and student accountability conceptions were positively correlated (Brown, 2004) but no link was made with conceptions of knowledge, conceptions of learning, or conceptions of instruction. In another study on academics' orientations to assessment practice, Samuelowicz and Bain (2002) came up with six categories, each with a different profile on six belief dimensions. The six orientations were clustered into three groups: (1) assessing the students' ability to reproduce information presented in lectures and textbooks; (2) assessing the students' ability to reproduce structured knowledge and apply it modified situations; and (3) assessing the students' ability to integrate, transform and use knowledge purposefully (Samuelowicz and Bain, 2002: 180–181). With respect to the relationship between orientations to teaching and learning and orientations to assessment practice, they remark: 'The Spearman rank correlation between the two sets of orientations was 0.81, confirming that, in our sample, orientations to assessment practice were closely related to orientations to teaching and learning' (Samuelowicz and Bain, 2002: 192).

In her study on the perceptions about assessment for learning of tutors and students, Maclellan (2001) asked about the purpose, content, timing, mode, marking, feedback and assessor. Results showed 'considerable differences between staff and students. On a Mann–Whitney *U*-Test, perceptions of assessment were significantly different on 32 out of the 39 items'(Maclellan, 2001: 313). In her attempt to deduce the respective 'views' of the two groups she indicates several inconsistencies in the opinions expressed by staff and students separately and comparatively. She seems to be particularly worried about 'the very underdeveloped conception of what assessment is' held by the students (Maclellan, 2001: 317). An important aspect of getting students involved in the process of self-directed learning would be to get them seriously engaged in the assessment process. Training students to become qualified self- and peer-assessors was tested in a study by Bloxhamand West (2004). In their study, a team's grade for a poster presentation was determined by (a) the grade awarded to them by other students, and (b) the quality of the feedback they themselves provided to another team. Results showed no significant differences in marks awarded by students and tutors and a greater understanding of performance and the use of assessment criteria (Boxham and West, 2004: 726). That the initial perception of assessment tools will change as soon as students have had positive experiences with it was demonstrated in a study by Struyven et al. (2006).

Gijbels, et al. (2005) performed a meta-analysis on the effects of problem-based learning (PBL) from the angle of assessment. Problem-based learning can be considered to incorporate all the principles of a constructivist conception of education (Otting and Zwaal, 2006). Gijbels et al. (2005) investigated the differential effect of PBL on 'the three levels of the knowledge structure: (a) understanding of concepts, (b) understanding of the principles that link concepts, and (c) linking of concepts and principles to conditions and procedures for application. Problem-based learning had the most positive effects when the focal constructs being assessed were at the level of understanding principles that link concepts' (Gijbels et al., 2005:27). In their study on the effect of PBL on students' learning approaches, Nijhuis et al. (2005) conclude that when changing a course from an assignment-based format into a problem-based format, a significant decrease in deep learning occurred and that the PBL course led to a significantly higher incidence of surface learning (Nijhuis et al., 2005: 82). Another study in a PBL context (Segers et al., 1999) showed a significant correlation between students' scores on a Knowledge Test and their scores on the Overall Test, which according to the authors, implies that 'we should not relinquish traditional assessment techniques' (Segers et al., 1999: 281).

Conceptions of knowledge
Research on conceptions of knowledge or epistemological beliefs, a core set of beliefs about knowledge and knowing, can be traced back to the work of Perry (1981), who initiated the study of personal epistemology by conceptualising the epistemological development of students during their years in undergraduate education. Perry found that students developed from simple and certain views of knowledge to more complex and relativistic ways of understanding knowledge and knowing. However, his conceptualisation of knowledge was unilateral and was afterwards replaced by ideas about the multi-dimensionality of epistemological beliefs. Schommer (1990; 1994) and Schommer and Easter (2006) conceptualised personal epistemology as a system of multi-dimensional epistemological beliefs. These epistemological beliefs (structure of knowledge, stability of knowledge, source of knowledge, speed of learning, and ability to learn) are more or less independent.

The dimensionality of epistemic beliefs is an issue of controversy both from an empirical and from a theoretical point of view. Besides the dimensionality, several studies address the domain in general and the domain or discipline-specific nature of epistemological beliefs (Hofer, 2000), or explore the dimensionality of epistemological beliefs in different classroom contexts (Hofer, 2004). Lately, new and improved epistemic beliefs questionnaires have been developed (Schraw et al., 2002; Chan and Elliott, 2004).

The study of epistemological beliefs is important because epistemological beliefs may play an important role in influencing students' learning behaviours and practices. Constructivist approaches to education and the immersion of students in constructivist learning environments promote awareness of and changes to epistemological beliefs (Howard, 2000; Brownlee et al., 2003). Sophisticated epistemological beliefs are positively influenced by constructivist approaches to knowledge and learning, whereas naïve epistemological beliefs are linked to the traditional transmissive approach to teaching (Tickle et al., 2005). Epistemological beliefs interact with and develop through students' participation

in educational practices. Therefore, teachers should pay sufficient attention to the development of these beliefs. Students with naïve epistemological beliefs are more likely to hold beliefs that knowledge is simple and unchanging and can be quickly learned, whereas students with a more sophisticated personal epistemology believe that knowledge is uncertain and complex. The acquisition of knowledge requires the students' engagement in more complex reasoning and knowledge construction processes.

Conceptions of teaching and learning
Students' conceptions of teaching and learning can be seen as a framework through which students describe and experience the learning environment. The study of the conceptions of teaching and learning is important because these conceptions may influence what and how students learn and their consequent academic achievements. The present conception of teaching and learning has been influenced by research in cognitive science. Recent insights in learning (Segers, 2004; Dolmans et al., 2005) have shown that:
• Learning should build on the student's prior knowledge and should be a constructive process;
• Learning should be a self-regulated and self-directed process;
• Learning should be context-bound and should be a fundamentally social process;
• Learning should be more than a process of knowledge acquisition. It should be a collaborative process and a process of enculturation in a community of learners and practitioners; and
• Learning should not only be a cognitive process but also a motivational and emotional process.

Research in the area of conceptions of teaching and learning suggests different categorisations of teachers' and students' conceptions of teaching and learning. The shift of focus from a teacher-centred and content-oriented model to a student-centred and learning-oriented model can be seen as a continuum. Kember (1997) has proposed a five category model of teaching and learning.His model of conceptions of teaching and learning distinguishes betweentwo teacher-centred orientations, a transitional orientation, and two student-centred orientatïons. However, research by Samuelowicz and Bain (2001) shows that there seems to be a 'hard' divide instead of a 'soft' transitional stage between the teacher-centred and student-centred orientations. In this paper, we will use a simplified categorisation: a traditional and a constructivist conception of teaching and learning. The traditional conception of teaching and learning is generally described as a teacher-centred approach to teaching,stressing information transmission combined with a surface approach to learning,whereas the constructivist conception of teaching and learning is seen as a student-centred approach to teaching, focusing on conceptual change, and has been linked to a deep approach to learning (Trigwell et al., 1999; Samuelowicz and Bain, 2001; Chan, 2003; Chan and Elliott, 2004).

Research questions
There have been few, if any, empirical studies on conceptions of assessment. So our first objective is to test and validate the Conceptions of Assessment Scale (CAS). The objective is to establish a preliminary key for the CAS, using the TLCQ as a

frame of reference (concurrent validity). Construct validity is measured by investigating the relational structure between the CAS, TLCQ and EBQ, each representing one subset of conceptions of education.

The main question addressed in the present study is about the differences and similarities in conceptions of assessment held by students and instructors. We will also check whether there are any systematic differences in conception of assessment between men and women, students of different nationalities and juniors versus seniors.

The second topic is the congruency in the three sets of conceptions of education: (1) knowledge, (2) teaching and learning, and (3) assessment. To what degree do students and instructors demonstrate a consistent constructivist or traditional orientation toward the three sets of educational conceptions?

Method

Three instruments were used to measure the three constituent parts of students' conceptions of education. The adapted epistemic beliefs questionnaire (EBQ) as developed by Chan (2000) and Chan and Elliott (2002) was used to assess conceptions of knowledge. The EBQ is an adapted version from Schommer's (1990) original 64-item instrument. It contains 30 statements about 'the nature of knowledge' and 'the nature of knowing' (Hofer, 2000), rated on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree).

The teaching and learning conceptions questionnaire (TLCQ) was also adopted from Chan (2003) and Chan and Elliott (2004). The TLCQ is a 30-item questionnaire that measures two different conceptions of teaching and learning: a traditional and a constructivist conception of teaching and learning.

The conceptions of assessment scale (CAS) was developed by the authors and is based on an extensive literature review and empirical testing among students and instructors. In the student version of the CAS, 32 items were included and students were forced to choose either the first (A) or second (B) statement (forced-choice format). To determine which of the two statements should be considered to reflect the constructivist orientation, we applied two methods. First, some experts in the area of educational measurement were asked to indicate which of the two alternatives A or B would reflect a more constructivist orientation. Based on sufficient agreement among the expert judgments, a provisional key was accepted. The second approach was to use the outcomes of the TLCQ as a criterion. The two groups identified as the 'traditionalists' and 'constructivists', using the two TLCQ scales, were examined with regard to their preferences for either of the two alternatives (A or B) on each of the CAS items. Inspection of the cross-tabulation and chi-square test indicated that seven items did not sufficiently discriminate between constructivists and traditionalists or should be keyed in reverse to the expert opinion. None of these seven items were included in the instructor version of the CAS and were rejected from further analysis.

The format of the instructor version of the CAS was also adapted. The force-choice format was replaced with a 4-point rating scale, with the following description:
1 = I quite agree with the statement on the left
2 = I agree somewhat more with the statement on the left than I do with the one on the right

3 = I agree somewhat more with the statement on the right than I do with the one on the left

4 = I quite agree with the statement on the right.

To enable comparison of the conceptions of students and instructors, the four-point scale was dichotomised, with 1 and 2 indicating a preference for statement A and options 3 and 4 reflecting a preference for statement B.

The procedure of examining the differential preferences of the 'traditional' group as compared to the 'constructivist' group – both created based on the two TLCQ scales – was repeated. Results indicated that 15 items showed a significant relationship between conception of teaching and learning and preference for either of the two statements in the CAS. We interpreted this as a kind of concurrent validation of the CAS key.

The 15 items of the CAS are shown in Table 1.

For some items, the first statement is keyed as representing the constructivist conception of assessment, while for other items the first statement would indicate the traditional conception. All answers are coded with +1 for endorsing the constructivist statement and −1 for choosing the traditional option, so the sum score can range from −15 (traditionalist) to +15 (constructivist).

Procedure

The questionnaire was filled out by the students and instructors during PBL sessions, lectures, workshops or at home. Adequate time was provided for finalising the questionnaire. The participation of students and instructors was voluntary. In total, 617 students and 85 instructors participated in this study.

Results

Subjects

The subjects in this study were 617 students (33% male) and 85 instructors (35% female) from a middle-sized university in the Netherlands. The age of the students ranged from 17 to 29 (mean = 20.4; sd = 2.11) and of the instructors from 20 to 63 (mean = 43.8; sd = 10.6). Students came from 15 different countries, with the vast majority (85%) having Dutch nationality. Among the instructors, five nationalities were represented, with 94% being Dutch.

Conceptions of assessment

The observed range of CAS scores in the current sample of 617 students runs from a minimum of −11 to a maximum of +15 (mean = 4.7; sd = 4.9). In the sample of 85 instructors the range in CAS scores is from −11 to +14, with a mean of 5.95 and sd of 4.7 (see Table 2).

A t-test was performed to compare the mean CAS score of students and instructors. Results show that instructors score significantly higher than students ($t = -2.11$; df = 697; $p = 0.03$). Students have more traditional conceptions of assessment than instructors.

We also examined whether any systematic differences in conception of assessment exist between men and women, Dutch and non-Dutch students and junior versus senior students.

Results indicate that female students score significantly higher than male students ($t = -2.48$; df = 371.6; $p = 0.025$), a gender difference which cannot be detected amongst the instructors.

Senior students score significantly higher on the CAS than their junior counterparts ($t = -4.63$; df = 612; $p = 0.00$).

Table 1: Conceptions of Assessment Scale (CAS)

1	A. Assessment should indicate whether you passed or failed B. Assessment should provide information on your strengths and weaknesses (C)
2	A. A test should rather ask for facts than for competencies B. A test should rather ask for competencies than for facts (C)
3	A. Assessment should focus on discovering the truth B. Assessment should focus on developing wisdom (C)
4	A. Assessment is all about understanding (C) B. Assessment is all about measurement
5	A. Competency is better tested with tests and examinations B. Competency is better tested with assignments and projects (C)
6	A. If a subject isn't tested I will not spend any time on it B. If I am interested in a topic I will study it, even if it isn't tested (C)
7	A. Assessments should cover just one discipline or subject area B. Assessments should be multi-disciplinary and cover several subject areas (C)
8	A. Assessment should be focused on learning processes (C) B. Assessment should be focused on learning results
9	A. Assessments are accurate indicators of student learning B. Assessments only give a rough indication of student learning (C)
10	A. Assessments measure higher order thinking skills (C) B. Assessments measure facts and details
11	A. Frequent assessments stimulate the learning process (C) B. Frequent assessments hinder the learning process
12	A. My peers have more information about my learning achievements than the lecturers (C) B. The lecturers have more information about my learning achievements that my peers
13	A. I am unable to evaluate the learning process of my group members B. I am able to evaluate the learning process of my group members (C)
14	A. Working in teams decreases my study results B. Working in teams increases my study results (C)
15	A. I'd rather do an individual test than work on a group assignment B. I'd rather work on a group assignment than do an individual test (C)

Note: (C) indicates the statement keyed as the constructivist option.

Finally, the Dutch students score significantly more constructivist than the non-Dutch students ($t = 2.35$; df = 612; $p = 0.019$).

Conceptions of knowledge

First, we examined the factor structure of the 30-item EBQ administered to the sample of students ($n = 617$). A principle component analysis with Oblimin rotation was run and did not replicate the four factors as hypothesised by Chan and Elliott (2004). Since our primary focus is on the dichotomy between a traditional versus a constructivist conception of education, we decided to run a two-factor solution (Eigenvalues of 3.11 and 2.61 respectively; together explaining 19% of variance). Inspection of the items with loadings > 0.30 in each factor clearly shows a traditional conception of knowledge versus a more constructivist conception of knowledge. The traditional factor contains 12 items reflecting a focus on innate ability,

Table 2. CAS scores by students (*n* = 617) and instructors (*n* = 85)

	Students	Instructors
Mean	4.74	5.95
Male	4.09	6.11
Female	5.08	5.67
Junior	3.91	–
Senior	5.75	–
Dutch	4.94	–
Non-Dutch	3.60	–

expert authority, and certainty of knowledge. The constructivist factor contains 11 items on learning effort and the learning process. The mean score on the 12 items in the traditional factor and the 11 items in the constructivist factor were used to classify subjects into four different groups: (1) traditionalists (scoring above the mean on the first factor and below the mean on the second factor), (2) constructivists (scoring above the mean on the second factor and below the mean on the first factor), and two mixed groups: (3) above average on both factors, and (4) below average on both factors. The two-factor solution of the EBQ is shown in Table 3.

Students scored significantly higher (2.81) than instructors (2.43) on the traditional scale (*t* = 7.13; df = 700; *p* < 0.001) while their scores on the constructivist scale are similar (students = 3.51, instructors = 3.56).

For further analyses of differences in EBQ scores between males and females, Dutch and non-Dutch students and junior versus senior students, we refer to Otting and Zwaal (2006).

Conceptions of teaching and learning
A principle component analysis with Oblimin rotation on the 30-item TLCQ yielded a two-factor solution (Eigenvalues of 5.42 and 3.46; together explaining 29.6% of the variance). The two factors, one indicating a constructivist conception of teaching and learning, the other a traditional conception of teaching and learning, exactly replicated the two factors identified by Chan and Elliott (2004) except for two items. The item 'I have really learned something when I can remember it later' in this study is transferred to the constructivist factor, while the item 'The major role of a teacher is to transmit knowledge to students' is considered to be misplaced and was rejected from further analyses. The two-factor solution of the TLCQ is shown in Table 4.

The mean score on the 16 items in the traditional factor and the 12 items in the constructivist factor were used to classify subjects into four different groups: (1) traditionalists (scoring above the mean on the first factor and below the mean on the second factor), (2) constructivists (scoring above the mean on the second factor and below the mean on the first factor), (3) above average on both factors, and (4) below average on both factors.

Students scored significantly higher (2.74) than instructors (2.05) on the traditional scale of the TLCQ (*t* = 11.57; df = 700; *p* = 0.001) and significantly lower (3.77) than instructors (4.11) on the constructivist scale (*t* = –6.11; df = 700; *p* < 0.001).

For further analyses on differences in EBQ scores between males and females, Dutch and non-Dutch students and junior versus senior students we refer to Otting and Zwaal (2006).

The relationship between conceptions of knowledge, conceptions of teaching and learning and conceptions of assessment
To assess the relationship between the conceptions of knowledge, the conceptions of teaching and learning, and the conceptions of assessment, we calculated the correlation between the scores on the different scales used to measure the several conceptions. The results of the correlation analysis are shown in Table 5.

The score on the scale measuring the traditional conception of knowledge (EBQ-TRAD) has a significant positive correlation with the score on the traditional conception of teaching and learning (TLCQ-TRAD) (*r* = 0.545). The traditional conception of knowledge is not correlated with the constructivist conception of knowledge (*r* = 0.011, ns) but significantly negatively correlated with a constructivist conception of teaching and learning (*r* = –0.263).

The score on the scale measuring the constructivist conception of knowledge (EBQ-CONSTR) is significantly correlated with the score on the constructivist conception of teaching and learning (TLCQ-CONSTR) (*r* = 0.384). A traditional conception of teaching and learning is negatively correlated with a constructivist conception of teaching and learning (*r* = –0.30), while no relation with a constructivist conception of knowledge was detected.

Higher CAS scores are significantly related to lower scores on the traditional scales of both theEBQ (*r* = –0.336) and TLCQ (*r* = –0.381). The CAS score is positively and significantly correlated with the constructivist conception of knowledge (*r* = 0.112) and teaching and learning (*r* = 0.377).

Since the correlationpattern described above holds true for both groups of students and instructors when examined separately, they are not included here.

Congruency in conceptions of education
The second research issue was aimed at the question of whether students' and instructors' conceptions of education are congruent, that is: do they show a consistent traditional or constructivist orientation toward all three sets of conceptions? To address this question, we classified subjects into groups, based on their position on the two factors on the EBQ and TLCQ and their score on the CAS. For the EBQ and TLCQ, subjects were assigned to one of four different groups according to their position on the two scales. Subjects scoring above average on the traditional scale AND scoring below average on the constructivist scale were classified as 'traditional'. Subjects were labelled 'constructivist' if they scored above average on the constructivist scale AND below average on the traditional scale. All other subjects formed two 'mixed' categories, with either low scores on both scales or high scores on both scales. For the CAS, all subjects scoring above the mean were classified as constructivist, all others as traditional.

Results of the categorisation on all three instruments (EBQ, TLCQ and CAS) are shown in Table 6.

Chi-square analysis shows a significant relationship between conception of knowledge and conceptions of teaching and learning among students (χ^2 = 124.6; df = 9; *p* = <0.001). For instructors, the association is non-significant.

Table 3. Pattern matrix of the two-factor solution for the EBQ (*n* = 617)

	Component	
	1	2
There isn't much you can do to make yourself smarter as your ability is fixed at birth.	0.636	
I still believe in what the experts say even though it differs from what I know.	0.583	
Scientific knowledge is certain and does not change.	0.572	
Students who begin school with 'average' ability remain 'average' throughout school.	0.560	
Our abilities to learn are fixed at birth.	0.513	
The really smart students don't have to work hard to do well in school.	0.466	
I am very aware that teachers know more than I do and so I agree with what they say rather than rely on my own judgment.	0.433	
I have no doubts about the experts' opinions.	0.421	
One's innate ability limits what one can do.	0.410	
The ability to learn is innate/inborn.	0.378	
Some students are born incapable of learning well in certain subjects.	0.362	
Scientists will ultimately get to the truth if they keep searching for it.	0.305	
How much you get from your learning depends on your effort.		0.565
People will learn better if they focus more on the process of understanding rather than on the facts to be acquired.		0.543
Everyone needs to learn how to learn.		0.523
If people can't understand something right away, they should keep on trying.		0.499
If one tries hard enough, then one will understand the course material.		0.494
Wisdom is not knowing the answers, but knowing how to find the answers.		0.479
Learning something really well takes a long time or much effort.		0.383
One learns little if one does not work hard.		0.372
Knowing how to learn is more important than the acquired facts.		0.360
Anyone can figure out difficult concepts if one works hard enough.		0.345
Getting ahead takes a lot of work.		0.306

Note 1: Extraction method: Principal component analysis. Rotation method: Oblimin with Kaiser normalisation. Rotation converged in 6 iterations.
Note 2: Traditional scale (12 items) with a mean of 2.81 and alpha of 0.695. The constructivist scale (11 items) has a mean of 3.51 and alpha of 0.620.

Congruency or consistency in conceptions of education can also be calculated as the number of subjects in the diagonal cells, in particular the two shaded cells. Inspection of Table 6 shows that 77 (11%) subjects have a consistently traditional-conception of knowledge, teaching and learning, and assessment, while 62 (9%) are consistently constructivist in their conception of knowledge, teaching and learning, and assessment. Separate analyses for students and instructors provide similar figures (Students: 11% TRAD (69), 9% CONSTR (56); Instructors: 9% TRAD (8) and 7% CONSTR (6)). With respect to the congruency of conceptions of education, students seem to be just as inconsistent as instructors.

Discussion

Do students and instructors hold similar conceptions of education?
With regard to all three sets of conceptions, students show a more traditional orientation than instructors do. There could be different explanations for this result. First, it could be a matter of age – instructors being older on average than students. Why would people become more constructivist with age? Maybe because age is correlated with more experience, different formal and informal teaching and learning contexts, more time to reflect on own and others' learning processes and a growing awareness of the relative nature of knowledge. Particularly instructors who have received explicit training in educational sciences might have a more elaborated and sophisticated set of conceptions of education. A third determinant of the difference

in orientation could be the different perspectives of students and instructors, as consumers and providers of education, respectively. In a constructivist context, students are expected to become actively engaged in the educational process as co-producers of the programme. If prior education has not prepared students to take up that role, they might resume to a consumer role.

With respect to conceptions of knowledge, the conceptions of teaching and learning, and conceptions of assessment, senior students prove to be significantly more constructivist than first-year students. To what extent this is caused by participating in a constructivist context (PBL) or by maturation, would require a longitudinal design and a comparison of a constructivist with a more traditional institutional setting.

The maximum acceptable level of discrepancy between conceptions of instructors and students and between institutional and individual conceptions of education are important issues which would warrant further research. More behavioural output measures need to be incorporated into such studies too, like the impact of conceptions of education on study results, time on task, teacher performance, satisfaction scores, and academic achievement.

Do gender, nationality and seniority make a difference?
When examining the CAS scores to see whether any systematic differences in conception of assessment exist between men and women, Dutch and non-Dutch students and junior versus senior students, it turns out that female students score significantly higher than male students, Dutch students

Table 4. Pattern matrix of the two factor solution for the TLCQ (*n* = 617)

	Component	
	1	2
Good students keep quiet and follow the teacher's instruction in class.	0.607	
It is best if the teachers exercise as much authority as possible in the classroom.	0.581	
Teaching is to provide students with accurate and complete knowledge rather than encourage them to discover it themselves.	0.576	
Good teaching occurs when there is mostly teacher talk in the classroom.	0.545	
The traditional/lecture method for teaching is best because it covers more information/knowledge.	0.542	
Learning mainly involves absorbing as much information as possible.	0.540	
Learning means remembering what the teacher has taught.	0.540	
Learning to teach simply means practicing the ideas from lecturers without questioning them.	0.530	
Students have to be called on all the time to keep them under control.	0.527	
A teacher's task is to correct learning misconceptions of students right away instead of allowing them to verify them for themselves.	0.522	
Teachers should have control over what students do all the time.	0.517	
A teacher's major task is to give students knowledge, assign them drill and practice, and test their recall.	0.512	
No learning can take place unless students are controlled.	0.480	
Teaching is simply telling, presenting or explaining the subject matter.	0.458	
During the lesson, it is important to focus on the textbook.	0.412	
Learning occurs primarily from drilling and practice.	0.409	
Students should be given many opportunities to express their ideas.		0.669
It is important that a teacher understands the feelings of the students.		0.620
The ideas of students are important and should be carefully considered.		0.597
In good classrooms there is a democratic and free atmosphere, which stimulates students to think and interact.		0.585
Good teachers always encourage students to think for answers themselves.		0.570
Learning means students have ample opportunities to explore, discuss and express their ideas.		0.551
I have really learned something when I can remember it later.		0.524
Instruction should be flexible enough to accommodate individual differences among students.		0.518
Effective teaching encourages more discussion and hands-on activities for students.		0.509
Good teachers always make their students feel important.		0.496
Every student is unique or special and deserves an education tailored to his or her particular needs.		0.432
The focus of teaching is to help students construct knowledge from their learning experience instead of knowledge transmission.		0.423
Different objectives and expectations in learning should be applied to different students.		0.313

Note 1: Extraction method: Principal component analysis. Rotation method: Oblimin with Kaiser normalisation. Rotation converged in 7 iterations.
Note 2: Traditional scale (16 items) with a mean 2.73 and alpha of 0.822. The constructivist scale (13 items) has a mean of 3.77 and alpha of 0.801.

Table 5. Correlation between conception of knowledge, teaching and learning, and assessment (*n* = 702)

	EBQ-TRAD	EBQ-CONSTR	TLCQ-TRAD	TLCQ-CONSTR
EBQ-TRAD				
EBQ-CONSTR	0.011			
TLCQ-TRAD	0.545**	0.011		
TLCQ-CONSTR	−0.263**	0.384**	−0.300**	
CAS	−0.336**	0.112**	−0.381**	0.377**

**Correlation is significant at the 0.01 level (2-tailed).

significantly higher than non-Dutch students, and senior students significantly higher than their junior counterparts. These findings raise several new issues for further research. One would be the issue about the relationship between the well-established outcome that female students generally outperform their male counterparts with regard to academic achievement and their respective conceptions of education. A second topic for further study would be the analysis of cultural differences in prior educational systems and their impact on students' conceptions of education.

Are conceptions of education congruent?
A traditional conception of knowledge is significantly correlated with a traditional conception of teaching and learning, while a constructivist conception of knowledge is significantly correlated with a constructivist conception of teaching and learning. Similarly, the CAS scores are significantly negatively correlated with the traditional conception of knowledge and teaching and learning and show a significant positive correlation with the constructivist conceptions of knowledge and teaching and learning.

Table 6: Cross-tabulation of 'conceptions of knowledge' and 'conceptions of teaching and learning'. Shaded cells indicate congruency between conceptions of knowledge and teaching and learning

			EBQ				
			Both low	Traditional	Constructivist	Both high	Total
CAS Traditional	TLCQ	Both low	15	20	11	14	60
		Traditional	19	77	14	34	144
		Constructivist	5	5	11	9	30
		Both high	11	17	8	27	63
		Total	50	119	44	84	297
CAS Constructivist	TLCQ	Both low	39	17	16	11	83
		Traditional	18	25	12	20	75
		Constructivist	54	14	62	36	166
		Both high	8	11	28	34	81
		Total	119	67	118	101	405

These results suggest a rather consistent profile within the conceptions of education. A constructivist orientation toward knowledge is correlated with a similar orientation toward teaching and learning and toward assessment, and vice versa for a traditional orientation.

If we classify subjects as constructivist or traditional using the mean on the different scales as a cut-off point, a significant relationship occurs between conceptions of knowledge and conceptions of teaching and learningfor the students in our sample. For instructors, the association is non-significant. If congruency or consistency in conceptions of education is expressed as the number of subjects having a consistently traditional conception of knowledge, teaching and learning and assessment, then 11% have a consistently traditional conception of education, and 9% are consistently constructivist in their conception of education. Although these figures are hard to interpret, they suggest that students are just as consistent as instructors. Further research is needed to validate the statement that a subjects' conception of education can be accurately predicted based on their EBQ, TLCQ or CAS scores. Further research should also test whether a dichotomy (constructivist vs. traditional) as applied in the present study is sufficient to classify the different conceptions of education.

Implications for education
An important implication of the present study is to monitor the alignment between the educational philosophy of an institute and the conceptions of education held by its students and instructors. Discrepancies in conceptions between the different stakeholders might cause an educational philosophy to fail, because its principles are misunderstood, misapplied or even rejected by students and instructors. It seems like a good idea to regularly check their conceptions of education, using the tools applied and developed in this study.

Although the results of the study seem to substantiate the idea that the constructivist principles of PBL are supported by instructors and students, further research is needed to compare traditional and constructivist educational systems, and their respective pay-offs. A related issue is to demonstrate in what way constructivism is better than traditional education.

PBL and assessment
Matching learning and assessment in problem-based learning requires the introduction of innovative methods of assessment that are in line with the constructivist framework behind problem-based learning. Students' experiences with the attempt to align learning and assessment are not always perceived as positive. A study of Winning et al. (2005) on students' experiences of assessment in problem-based curricula shows that the majority of students had negative experiences. Especially, the amount of clarity and feedback, the consistency of grading, and the clarity of expectations were mentioned as major shortcomings. Clear explanations of the assessment concepts and goals combined with support for students to improve their (self- and peer-) assessment skills are needed for a better understanding of a broader range of assessment methods.

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RHM

Mind the gap: researching 'sustainability in hospitality' at the edge of academic and industry interests[1]

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This paper describes the development of the research line 'sustainability in hospitality' for Stenden University of Applied Sciences (the Netherlands). To comply with the official requirements for a Dutch university of applied sciences (UAS),a research line should be based on an explicit or latent knowledge demand from the industry; it should add to the academic debate and its design should enable both undergraduate students and staff to get involved as researchers. This study aims at developing a research line 'sustainability in hospitality' that fulfils these requirements. To reach this aim and considering the existing gap between academic research and practitioners' interests, a mixed methodology was used: an analysis of academic journals and in-depth interviews with 14 key informants from the hospitality industry. Data obtained were compared to look for commonality of interests. Results confirm that there is also a gap in hospitality management studies between academic and industry interests, and suggest that professionals are less interested in environmental issues than academics and that they are in need of guidance for a more integrated approach to sustainability. Future research should further explore the relevance of major academic themes for practitioners and investigate the role of management literature in forming the understanding of professionals about sustainability and its challenges.

Keywords: hospitality, research line, sustainability

Introduction

The panorama of higher education in the Netherlands is dominated by two types of academic institutions: research universities and universities of applied sciences (UAS). The former offer theory-oriented curricula and conduct basic scientific research, while the latter provide education with a professional orientation (Nuffic, 2009). In 2002, however, a new law on higher education allowed UAS to develop research programmes under the leadership of a 'lector'. The central task of a lector is to design and conduct research on the edge of theory, education, and practice by involving students, faculty, and professionals in research projects focused on an explicit or latent demand from the professional field (see Figure 1). PhD level research is still a prerogative of research universities (HBO-Raad, 2007).

In the eyes of the Ministry of Education, the main role of a lector is to close the gap between fundamental research and businesses, in order to better support a knowledge-based economy and business innovation (Nuffic, 2009). Indeed, it has frequently been noted that research results do not trickle down to businesses. Armstrong (2003, 2004) and Armstrong and Pagell (2003), for example, found that only 3% of academic papers on forecasting contain useful findings, i.e. findings that

have the potential to improve practice by supporting better decision making. In the same vein, Forster (2007) concluded that the impact of academic research outputs on senior Australian business leaders is almost non-existent. Several factors coincide in rendering academic research unintelligible to professionals, including a myopic fixation on quantitative methods, a short-sighted obsession with citation indices, a bias against replication research and the influence of all these factors on academic success and the reward system for researchers (Geuens, 2011; Armstrong, 2003).

Against this background, UAS in the Netherlands should develop research that is relevant for and useful to practice. From this stems the preference for the terms 'practice-relevant' or 'practice-oriented' research over the term 'applied' research. The purpose of practice-oriented research is similar to the models of applied research described by Gibbon et al.'s Mode 2 (1994) and Saunders et al. (2000), yet differs from the latter because its context does not necessarily involve negotiating with an originator or meeting tight time schedules (Hazelkorn, 2004; Koupriouchina and Van der Rest, 2011). Moreover, dissemination of practice-oriented research results takes place not only – and certainly not exclusively – via academic journals, but also via professional magazines, newspapers, the internet and other (social) media.

The choice for a wide range of communication channels does not imply that practice-oriented research is less methodologically impeccable than basic research. This being said,
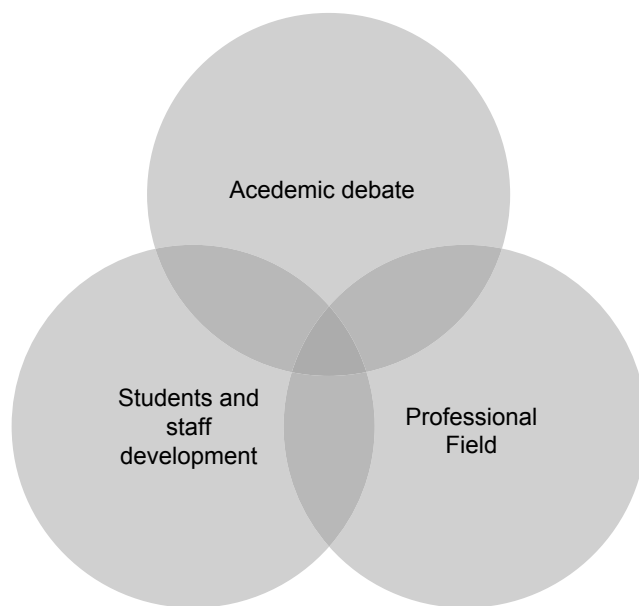
Figure 1: Expected impact of research programmes at Dutch universities of applied sciences

in practice-oriented research, a higher priority can be set on contextualisation rather than generalisation of findings.

In line with its practice-oriented character, the utilisation and valorisation of research results by UAS stakeholders (such as staff, students, professionals and the surrounding community) is considered a criterion for quality (see Figure 1). Every six years, Dutch UAS are formally assessed on the quality of their practice-oriented research. In line with the above-mentioned criteria, a key evaluation item of the Dutch research quality assessment system for UAS is the extent to which central research questions are based on explicit or latent knowledge demands from professionals (HBO-Raad, 2007). Dutch UAS cannot thus rely solely on the academic debate to design their research strategy: they also need to directly interact with the industry.

Taking the Dutch context into account, the aim of this study is to explore the knowledge needs of hospitality professionals regarding sustainability and to get insight in the (eventual) divergence between academics' and practitioners' interests concerning future directions for research in this field. The final purpose isto develop a research line 'sustainability in hospitality' that fulfils the following requirements:
1. Adds to academic knowledge;
2. Supports the transition toward sustainability of the hospitality industry;
3. Allows both undergraduate students and staff with limited research experience to participate.

In short, the research line 'sustainability in hospitality' designed for Stenden UAS should focus on topics relevant both to academia and the professional field, and should be in line with and support the development of UAS expertise.

The paper has three parts. Part one offers a definition of sustainability in general and as applied to the hospitality industry. The next section explains the procedure followed in the research (methodology), and the last one discusses the main results.

Literature review
As stated above, this brief literature review focuses only on the concept of sustainability in general and on its application to the hospitality industry.

Although the idea of sustainability can be traced back to the eighteenth century, scholars usually refer to the work of the UN World Commission on Environment and Development (WCED, also known as the Brundt land commission) when asked to point to a definition of the term (Cavagnaro and Curiel, 2012). The WCED defined sustainability as a form of development that 'meets the needs of the present without compromising the ability of future generations to meet their own needs' (1987: 8). Subsequently, three main dimensions of sustainability were identified: an economic, a social and an environmental dimension (Earth Summit II, 1997).

While the WCED saw governments as the major agent of change towards sustainability, from 1995 on, corporations have become increasingly involved in the sustainability debate. A turning point in this respect is the year 1997, when two very different companies – the Body Shop and Shell – published their first sustainability reports (Cavagnaro and Curiel, 2012). The same year witnessed the introduction of the triple bottom line concept by Elkington (1997). In the triple bottom line, Elkington translated the environmental, social and economic dimension of sustainability for businesses. He proposed to call the three dimensions respectively 'planet, people and profit'. Since Elkington introduced the concept, the triple bottom line or triple P, has been further developed and applied in a vast array of both profit and non-profit organisations.

Both the WCED and Elkington insisted that the three dimensions of sustainability are equally important. This notwithstanding, the environmental dimension has often received a higher weight than the social one. The major reason for this unbalance is the role that the environmental movement has taken since the late 1960s as a champion of sustainability (Cavagnaro and Curiel, 2012). It is therefore no surprise that– save for a few exceptions –the first companies that embraced sustainability were major players on the international field with a bad reputation on environmental issues, such as companies from the extractive and chemical industries. By and large, hospitality is not considered a target by environmentalists and other pressure groups due to the – incorrect – assumption that its impact on the environment is limited (Sloan et al., 2013). More pro-actively the tourism industry developed an own vision on sustainability already in the 1990s under leadership of the World Tourism Organization and, later on, of the Global Council for Sustainable Tourism.

For years, hotels, restaurants and other players in the hospitality industry have been lagging behind other organisations in terms of sustainability. They have recently joined the sustainability agenda, moved on one side by the large savings that a better management of resources can bring and on the other by clients' requests. In the Netherlands, specifically, in 2009 the Dutch government announced an ambitious sustainable procurement programme: by 2015 all goods and services bought by the Dutch government (nationally, regionally and locally) should meet sustainability criteria (NL Agency, n.d.). With a budget of 60 billion euros, the Dutch government is one of the major spenders in the Netherlands (Rijksoverheid, n.d.).

Sustainability in hospitality has been defined as a way to manage hospitality operations 'that manages resources in such a way that economic social and environmental benefits are maximized in order to meet the need of the present generation while protecting and enhancing opportunities for future generations' (Sloan et al., 2013: 22). This requires, first of all, an understanding of what resources are used in the hospitality process and their impact (positive or negative) on people, planet and profit. Then it requires action to mitigate the negative and enhance the positive effects by integrating sustainability principles in the vision, mission, strategy and operations of theorganisation under consideration. The 'icing on the cake' would then be reporting on the achieved results to all involved stakeholders (Cavagnaro and Curiel, 2012).

Although sustainability is quite a new topic in hospitality, the last few years have seen a growing interest in environmental and social issues both in the academic and the professional fields (Tzschentke et al., 2004; Rimmington et al., 2006; Cavagnaro and Gehrels, 2009; Sloan et al., 2013).

In the Netherlands, major hotels such as Radisson SAS (Schiphol), Okoura (Amsterdam) and NH Hotel (The Hague) have implemented several measures to reduce their impact on the environment and have obtained the Golden Green Key certificate in recognition of this (Cavagnaro and Koopman, 2010).

Universities of applied sciences offering hospitality education have also responded to this challenge, although mostly not systematically. In the new Dutch UAS context, where research and education should support each other, the development of a well-structured research line is of paramount importance.

Methodology

The aim of this study is to explore the knowledge needs of hospitality professionals regarding sustainability and to get insight into the (eventual) divergence between academics and practitioners about future directions for research in this field. The final purpose is the development of a research line 'sustainability in hospitality' that meets three main conditions: it is centred on topics that are of interest both to the academic and to the professional field; is open to the co-operation of undergraduate students and staff as researchers; and matches the competence of the UAS under consideration.

To achieve the above aim, two main methods were followed: a content analysis of articles published in tourism and hospitality academic journals covering subjects connected with sustainability on one hand, and in-depth interviews with key informants from the field on the other. Comparing ther esults so obtained, topics are identified that enjoy the interest of both the academic and the professional field. This topics' list fulfils the first criterion mentioned above. By matching these topics with Stenden's capabilities, a research agenda for this institution was developed. Finally, to cater also for the second condition, this study was conducted with the support of students as co-researchers. To date, over 40 students have contributed to this project.

More specifically, the methodology followed for this research consisted of four phases or steps. The first step aimed at getting an overview of areas of present (and future) research in sustainability for the hospitality industry. To this end, academic journals in the field of tourism and hospitality

were reviewed and articles related to sustainability, corporate social responsibility and similar topics identified and listed, following a pre-ordained scheme. Out of 17 journals, 173 articles were identified in the period 2006–2010. A scheme was created for listing the articles where researchers (Stenden IHM bachelor's students) noted information such as the name of the author(s), affiliation, title of the article, key words and abstract. During this phase, students were asked to devise key words when these were not present or very general. To elicit a list of topics illustrating academic interests in sustainability in hospitality and tourism, content analysis of each listed article was then conducted by two students separately (see Appendix 1 for a list of journals covered).

After this step, semi-structured, in-depth interviews were held with key respondents from the hospitality industry. The main aim of this second step was to elicit from professionals what they considered to be the main issues in sustainable hospitality and to confront them with the issues identified during the analysis of the academic journals. Starting with industry representatives who are members of the Advisory Board of Stenden UAS, the technique of snowballing was used to identify new respondents.

Of the 15 people approached to date, 14 agreed to be interviewed. Out of these 14, three respondents were female and eleven male. In term of work situation, nine respondents held a high management position in Dutch hotels, of which five were general managers; one was the (Dutch) owner of a Spanish hotel chain; three were consultants and one worked in a related industry. Three interviews were simultaneously conducted with two persons from the same organisation. This explains why for some (closed-ended) questions 14 results are presented and for others 11.

All interviews were recorded; transcribed and analysed following a content analysis approach. Closed-ended or questionnaire type questions asked during the interviews were set in frequency tables and means were calculated. On average, interviews lasted one hour.

After general questions about their position and career, the interviewees were asked to describe sustainability, to rate its importance for their organisation and to summarise its sustainability policy. Then the interviewees were asked to indicate the main sustainability challenges for the hospitality industry in the future. Finally, to explore the alignment between managerial and academic interests, respondents were confronted with a list of fourteen statements based on topics elicited from step one, and asked to rate them on a five-point Likert scale. A limitation here is that respondents were asked about *agreement* with these research topics, not about their *relevance* for their work.

In parallel with this second step, a third step was also attempted, i.e. an analysis of management journals and magazines. This analysis was deemed necessary after the review of academic journals and the first interviews: themes that are of interest for practitioners – such as, for example, waste reduction – seem not to have received the attention they deserve from academia, while they are discussed at large in the management literature. A difficulty encountered here was accessibility to management literature. Most libraries and internet databases keep only issues from the current year. As a consequence, the results from this step are not taken into consideration in this article.

The last step consists in a comparison of the results obtained in step one (academic journals review) and step two (interviews). The aim of this step is to evaluate convergence of academic and professional interests in research on sustainability in hospitality, and on this basis to identify research topics that are of interest to both.

This research project is an on-going project. At the time of writing, 2011 journals are being analysed and new key informants are being identified and interviewed.

Results and discussion

In this section, results from the review of academic journals are presented first and then results from key informants' interviews.

Review of academic journals
The review of academic journals revealed that, measured in absolute numbers, there was an increase in articles dedicated to sustainability topics in tourism and sustainability: from 30 in 2006 to 47 in 2010. Although this seems encouraging, in percentage terms the growth has been very limited: in 2006, 9.4% of all published articles were dedicated to sustainability, against 11.4% in 2010 (Figure 2).

Moreover, most of the identified articles are related to tourism or dedicated to general sustainability issues, such as climate change (see Table 1). From the same table, it can be concluded that environmental issues get the most attention from researchers. Though these results can be explained with reference to the strong environmental roots of the sustainability concept, it is still surprising for research on a business such as hospitality that strongly depends on people and on the maintenance of cultural heritage for its success (Sloan et al., 2012).

Finally, looking at the locus of research, it is interesting to note that, of all represented universities, the Hong Kong Polytechnic University is the most involved in the sustainability debate.

Semi-structured, in-depth interviews
One of the questions asked of the interviewees concerned their own understanding of sustainability. Interesting here is that interviewees clearly described sustainability as a tridimensional concept, often mentioning the triple bottom line or triple P (planet, people and profit) introduced by Elkington (1997). For example, the following interview fragment shows how an interviewee's understanding of sustainability developed from an environmental focus to a broader one including people:

> *My first idea was that sustainability was the same as Green Key. Yet now that I am more aware of the term, it is much broader. It is not only being green, but it is also schools, education… Thus it is for the natural environment and for the people. That…it should be good (interviewee D1, 29 December 2011, transcript ll: 43–49).* [2]

Figure 2: Total articles vs. sustainability articles

Table 1: Top four keywords

Keywords	Frequency
Sustainability; sustainable development, corporate social responsibility	40
Sustainable tourism; eco-tourism	32
Environment; environmental impacts/management; climate change; environmental accounting; eco-efficiency	32
Hotels; hospitality	10

Even more forcefully, interviewee B states:

> *To me, corporate social responsibility has more than one pillar. Thus, it is not only… to take your responsibility for the natural environment, and that you earn money and that type of thing. I think that CSR is also towards the social environment, the community, what you do for the community. What you do for other people, for your employees, for your team… (interviewee B, 06 December 2011, transcript ll: 90–95).* [3]

For an industry that only lately joined the sustainability challenge, this good understanding of the concept is remarkable.

In the same vein, interviewees agreed (two out of 14) or strongly agreed (12 out of 14) with the statement that it is important to implement sustainability within their companies. Answers to the question of whether measures are taken in their companies towards sustainable management, show a different picture. Here, only seven out of 14 strongly agreed, while six agreed. It seems that respondents consider that there is space for improvement in the application of sustainability. This is confirmed by their answer to the third statement, concerning whether more measures for sustainable management should be taken in their company. Only three respondents disagreed, while nobody strongly disagreed. As an example, interviewee F can be quoted. He states:

> *Where I feel that, yes, we have to do…better management of our…environment, the world is going in a direction that we do not want to go. Yes…we cannot continue going in this way (interviewee F, 12 December 2011, transcript ll: 266–269).*

2 'Ikdenkhé, eerstdat we heel erg aan Green Key, dat is voorons sustainability. Maar nu is zelfookmeer in aanraking ben met die term, is het eigenlijkveelbreder. En is het nietalleengroen, maar is het met name… ookscholen, onderwijs… Zoookvoor het milieu alsvoor de mens. Dat…het moetgoedzijn' (D1, 2011 12 29, transcript ll.43-49). English translation by E Cavagnaro.

3 'Ikvindmaatschappelijkverantwoordondernemen, daar zit ookeenander-epilersonder. Dusdat is nietalleen maar … je verantwoordingnemenvoor de environment en dat je centjesverdient en datsoortdingen. Ikvindook, maatschappelijkverantwoordondernemen is ook van, naar de omgeving, de comunitywat doe je voor de comunity. Wat doe je voor je medemens, wat doe je voor je personeel, voor je team of…' (B, 2011 12 06, transcript ll. 90–95). English translation by E Cavagnaro.

Table 2: Main issues raised by the interviewees

Issue	Description
a	Sourcing services and products locally (food, suppliers)
b	Indifference towards environmental issues (in past policy)
c	Booking sites do not provide information on sustainability per company
d	Sustainability requires an investment, which leads to resistance
e	Lack of governmental regulations (in certain countries)
f	Creating awareness amongst clients
g	Creating awareness amongst employees
h	Companies' short-term focus vs. sustainability long-term focus

Table 3: Comparative analysis issues / interviewees

Interviewees	Issues							
	a	b	c	d	e	f	g	h
A	X	X			X			X
B			X				X	X
C								
D 1 and D2							X	
E			X	X				X
F			X			X	X	
G1 and G2						X	X	X
H						X	X	
I		X	X		X			X
J								X
K1 and K2								
Frequency	1	2	2	2	3	3	5	6

During the interview, a list of statements was presented to the interviewees. This list was elicited from the analysis of academic journals, and from general articles on sustainability. Interviewees were asked to rate their agreement with these statements and were also asked to mention what they considered to be the main sustainability challenges for the future of the industry. Although, as was noted above, environmental issues are the most discussed in the academic literature, most interviewees mentioned *creating awareness amongst employees* as the most challenging issue regarding sustainability (see Tables 2 and 3).Consider, for example, interviewee G2:

> …[sustainability is] especially not about the environmental issues; it's a lot more about creating awareness among your staff that you can do it (interviewee G2, 07 December 2011, transcript ll: 58–59).

And interviewee H:

> What puzzles me is the opposition of some clients... And how we can get our employees involved (interviewee H, 06 December 2011, transcript ll:140, 146).[4]

Here the people dimension clearly comes to the fore.

The second major issue is that companies tend to prioritise profit rather than sustainability. Here, the suggestion was made by one of the interviewees to look at how to integrate

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[4] 'Watmijookverwonderd is de weerstand van klanten… En hoe krijg je ook je medewerkersmee' (H, 2011 12 06, ll. 140, 146).English translation by E Cavagnaro.

sustainability criteria in outsourcing contracts. This, he felt, could help in reconciling the profit dimension with the people and the planet dimension.

A third recurring theme in the interviews concerned the question about 'the next step' in sustainability. Managers pointed out, on one hand, the difficulty for them to foresee what the next claim of society will be on the industry, and on the other, the need for a more integrated approach to sustainability. As one of the interviewees said during the first report on the results in June 2012, 'We are doing sustainability bit by bit. We kind of miss the whole picture' (personal communication, 22 March 2012, interviewee H).

Conclusion and recommendations

To conclude, it may first of all be said that sustainability has gained a firm footing in the hospitality discourse, both in the academic and the professional fields. Even though this is so,this study confirms that there is a lack of alignment between academic and professional discourse on sustainability. While in the professional field a shift may be signalled from a mostly environmental orientation towards a more careful consideration of the people dimension of sustainability, the academic field still seems more concerned with issues related to the environmental dimension.

At this juncture, it is important to remind the reader that this study focuses only on academic journals in hospitality and tourism. In other fields, analysis of issues related to the people dimension is more common. For example, in environmental psychology, there is extensive research on understanding and influencing pro-environmental behaviour (see e.g. Lindenberg and Steg, 2007; Gardner and Stern, 2002). This might mean that to develop research that better connects to professional interests, researchers should consider a wider spectrum of disciplines than the ones usually connected with hospitality and tourism studies.

From our analysis, some research themes emerged that might be considered as relevant to both academia and practice: the development and evaluation of instruments to create or enhance awareness among employees and customers; the development and evaluation of means to reconcile the profit with the people and planet dimensions of sustainability; and the development of a more integrated approach to sustainability in the context of hotels to reach a 'fully sustainable hotel experience'.

Finally, some considerations for further research: as it was noted in the methodology, the relevance of major academic themes for practitioners should be further explored alongside the role of management literature in forming the understanding of professionals on sustainability and its challenges.

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Appendix 1: Journals searched for articles on sustainability in hospitality

Journal title	ISSN
Cornell Hospitality Quarterly	1938-9655
Hospitality Design	1062-9254
Hospitality Education and Research Journal	0741-5095
Hospitality/Lodging	0098-3306
Hospitality Research Journal	1060-9350
Hospitality Restaurant	0098-3292
International Journal of Contemporary Hospitality Management	0959-6119
International Journal of Culture, Tourism and Hospitality Research	1750-6182
International Journal of Hospitality Management	0278-4319
International Journal of Hospitality & Tourism Administration	1525-6480
Journal of Hospitality and Tourism Technology	1757-9880
Journal of Hospitality & Leisure Marketing	1050-7051
Journal of Hospitality, Leisure, Sports and Tourism Education	1473-8376
Journal of Hospitality Marketing & Management	1936-8623
Journal of Hospitality & Tourism Research	1096-3480
Journal of Human Resources in Hospitality & Tourism	1533-2845
Journal of Quality Assurance in Hospitality & Tourism	1528-008X
Journal of International Academy of Hospitality Research	1052-6099
Leisure and Hospitality Business	1472-5266
Lodging Hospitality	0148-0766
Progress in Tourism and Hospitality Research	1077-3509
Restaurant Hospitality	0147-9989
Scandinavian Journal of Hospitality and Tourism	1502-2250
Tourism and Hospitality Research	1467-3584
Worldwide Hospitality and Tourism Themes	1755-4217

RHM

Tutor performance in a problem-based Hospitality Management curriculum

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Tutors are of crucial importance for student learning in problem-based learning (PBL). They facilitate the development of students' self-directed and collaborative learning skills, and support students during their learning processes. The tutor's ability to understand students' learning needs and to further student learning is a prerequisite for successful facilitation of student learning. It is generally assumed that a short introduction to problem-based learning will suffice for qualified teachers to fulfil their role as a tutor. However, the necessary competencies and responsibilities of a tutor differ greatly from the role of a teacher in a conventional, lecture-based educational system. Participant observations of tutors in PBL sessions show a great variety of interpretations of the tutor role. Beginning tutors in particular feel the burden of uncertainty due to lack of experience in tutoring PBL groups. Therefore, we designed a training course for beginning tutors that focuses on the development of tutor competencies aiming at the facilitation of constructive, self-directed, contextual, and collaborative learning in PBL groups. In this study, students evaluated tutor performance in PBL groups and we compared the performance of beginning and experienced tutors.

Keywords: problem-based learning, tutor competencies, tutor training course

Introduction

Problem-based learning (PBL) was introduced to medical education at McMaster University in Hamilton, Canada, in the late 1960s (Barrows and Tamblyn, 1980; Taylor and Miflin, 2008). It was introduced to higher education in the Netherlands at the start of the Maastricht University's medical school in 1974 (Van der Vleuten and Wijnen, 1993). Since its introduction, there has been much research on a variety of aspects of problem-based learning. One of these research themes concerns the role and the characteristics of effective tutors. Studies on the role of tutors show that the tutor is one of the main drivers for successful student learning (Barrows, 1988; De Grave et al., 1999; Dolmans et al., 2002; Dolmans et al., 2003; Dolmans and Ginns, 2005; Hendry et al., 2002; Schmidt and Moust, 1995; Silén, 2006).

The underlying principles of problem-based learning are related to constructivist theories of learning (Hendry et al., 1999). In the PBL sessions, which take place twice a week, students construct knowledge in collaboration with other students. The tutor, who facilitates the students' learning processes, should not only have course content knowledge, but also have an open mind for the students' learning needs, and the ability to adjust his teaching behaviour to these needs. However, many beginning and experienced teachers don't have prior experience with problem-based learning and are not used to the tutor role as a facilitator of learning. Consequently, teachers who are not convinced of the PBL philosophy tend to fall back on the more familiar teacher-directed model when they experience difficulty in facilitating PBL (Dolmans et al., 2001). Tutor training is important to develop teachers' conceptions of problem-based learning and to become more effective in their tutor role (Hendry, 2009).

Studies on the tutor in a PBL curriculum show that the provision of tutor training or general staff development is of major interest for students' learning (Irby, 1996; Trembley et al., 2001; Dolmans et al., 2002; Jung et al., 2005). A tutor training course should reflect the comprehensive framework of problem-based learning as well as the constructivist principles that support a PBL approach to the curriculum. For instance, Irby (1996) described in his study five faculty development models ranging from a general skills model via a developmental and comprehensive model to an extended course-based model. The comprehensive model for faculty development proved to be the most valuable as tutor training and support. Other researchers (Schmidt and Moust, 1995; Dolmans et al., 2002; Van Berkel and Dolmans, 2006) emphasised the importance of inter- and intrapersonal competencies, and self-reflection in PBL tutor training. For instance, Van Berkel and Dolmans (2006: 735) argued that high priority should be given to training of tutor competencies that support student learning in a PBL group, because 'tutors are of crucial importance to the functioning of a group'. Though research has shown that experienced tutors have need for regular maintenance of their competencies (Trembley et al., 2001), beginning tutors expressed an even bigger need of training and support (Jung et al., 2005). To meet beginning tutor's needs, we have designed a specific tutor training course emphasising the development of the competencies that are essential for facilitation of learning in PBL groups. The tutor training course is based on the guiding principles of problem-based learning and reflects a focus on constructive, self-directed, contextual, and collaborative learning.

In this paper, we evaluate the performance of beginning tutors in the PBL group and compare their performance with the performance of more experienced tutors.

Method

Context
Inspired by the success of the problem-based learning approach at Maastricht University, Universities of Applied Sciences in Netherlands have introduced problem-based learning into their curricula. The International Hospitality Management programme (IHM) at Stenden University of Applied Sciences was amongst the first to introduce a fully-fledged PBL curriculum (in 1987) and up to this point problem-based learning forms the foundation of the hospitality management curriculum. Until 1991, every new teacher participated in a PBL tutor training course at Maastricht University. Afterwards, PBL tutor training was provided by a variety of Stenden trainers, but over the years the commitment to tutor training faded away and PBL training courses came to a complete stop in 2004. Though the urge was felt for tutor training and coaching, it was not until 2008, after a merger with a non-PBL University of Applied Sciences, that training of teachers in problem-based learning became policy issues again and new training courses in the different aspects of PBL were developed.

Tutor training course
In this study, we report about a training course for beginning tutors that aims at enabling teachers to facilitate student learning in PBL groups by raising awareness of the foundations of constructivist learning and by training of the teachers' competencies. The course is designed around the core elements of PBL: constructive and active learning, self-directed learning, contextual learning, and collaborative learning. Through facilitation and scaffolding (De Grave et al., 1999), the trainers offer a collaborative learning context in which participants are invited to participate as self-directed learners who formulate their own learning objectives and are self-responsible for gaining results. The beginning tutors' conceptions, assumptions, and opinions about teaching and learning are the starting point for their PBL learning process. Course participants gain understanding of problem-based learning and student-centred learning, and learn how to facilitate group processes. In the tutor training, the Maastricht model of problem-based learning, including the seven-step approach to problem solving and the application of a variety of analysis techniques, are central issues (De Boer and Den Dulk, 2008). The course starts with an individual literature study, followed by a two-day intensive group-training, three observations of experienced tutors during a PBL session as well as being the tutor of a PBL group during a 10-week module period. Individual feedback from one of the trainers is given on the course participant's functioning as a tutor in the PBL group. The beginning tutor course is rounded off with a half-day group session for reflection, questions and feedback.

Participants
Participants in the beginning tutor courses were 17 newly appointed teachers from the international hospitality management programme with a variety of qualifications and working experience within the field of education and outside. Some of the teachers had prior experience with PBL as a student; others had no experience at all. Participation was supported and funded by the programme directors.

To compare the results of 17 beginning tutors with more experienced tutors, 16 experienced tutors with at least one year of experience in guiding PBL groups voluntarily participated in this study. Students in the PBL groups filled out a questionnaire to evaluate the performance of their tutor. In total, 850 students voluntarily participated in the evaluation of their tutor's performance. The questionnaire on the performance of beginning tutors was filled out by 541 students and 309 students completed the questionnaire on the performance of experienced tutors.

The performance of beginning tutors was measured at the end of the first module period in which they took full responsibility as the tutor of a PBL group. Performance of experienced tutors was also measured at the end of the module period.

Instrument
The evaluation of tutor performance was measured by a tutor feedback questionnaire (TFQ) designed and validated by Dolmans et al. (2003). The 22-item questionnaire provides tutors with feedback from students on their tutoring in PBL groups and is used as a means to measuring beginning and experienced tutor performance. Research by Dolmans et al. (2006a) showed that students are well able to differentiate between different tutoring deficiencies. Confirmatory factor analysis showed that a five-factor model with the factors 'active learning', 'self-directed learning', 'contextual learning', 'collaborative learning', and the teachers' 'inter- and intra-personal behaviour' fitted the data best (Dolmans et al., 2003).

Results

Evaluation of questionnaire
To confirm the applicability of the tutor feedback questionnaire to our sample, confirmatory factor analysis with EQS 6.1 (ROBUST option) was performed. The validation of the instrument showed satisfactory goodness of fit indices with root mean square error of approximation (RMSEA = 0.042, CI: 90%, 0.037–0.047), root mean square residual (RMR = 0.027) and standardised root mean square residual (SRMR = 0.038). These indices meet Hancock and Mueller's (2005) target values and confirm the validity and applicability of the TFQ for this study. Criteria of other fit indices, goodness of fit (GFI = 0.94), and adjusted goodness of fit (AGFI = 0.93), were also met (Fan and Sivo, 2005).

Tutor performance
Number of items, mean score, standard deviation, Cronbach's α, and Pearson correlation between the five TFQ dimensions and an overall judgment are given in Table 1. The mean scores of the five TFQ dimensions are in the range between 3.45 and 3.89 on a five-point scale, indicating adequate tutoring performance. The average scores on the factors correspond with the findings of Dolmans et al. (2003), who found average scores between 3.6 and 3.9. A mean of 7.69 on a 10-point scale reflects a very positive overall judgment of their tutor by the students. Cronbach's α of the subscales ranging from 0.689 to 0.822 demonstrates good internal consistency.

Table 1: Number of items, mean score, standard deviation, Cronbach's α, and Pearson correlation between the factors (*n* = 850)

| Factors | | | | | Pearson's correlation | | | | | |
| | | | | | Factors | | | | | |
	No. items	mean	SD	Cronbach's α	1	2	3	4	5	6
1. Active learning	5	3.83	0.56	0.764	–	0.604**	0.658**	0.459**	0.582**	0.638**
2. Self-directed learning	3	3.85	0.64	0.689		–	0.536**	0.532**	0.549**	0.570**
3. Contextual learning	4	3.80	0.59	0.728			–	0.455**	0.564**	0.564**
4. Collaborative learning	4	3.45	0.76	0.792				–	0.559**	0.536**
5. Interpersonal behaviour	5	3.89	0.64	0.822					–	0.713**
6. Overall judgment	1	7.69	1.09							–

** Correlations are significant at the 0.01 level (2-tailed)

The Pearson correlations among the five factors (Table 1) vary between 0.455 and 0.658. Moreover, all five factors are significantly correlated with the students' overall judgment about the tutor.

Students evaluated the performance of beginning and experienced tutors (Table 2). The results of *t*-tests showed that beginning tutors differed significantly from experienced tutors on two factors. Students rated beginning tutors significantly lower (*t* = –2.866, df = 848, *p* = 0.004) on the factor 'active learning' (*M* = 3.78) than they did experienced tutors (*M* = 3.90), indicating that experienced tutors more effectively facilitate active and constructive student learning. On the factor 'self-directed learning' (*t* = –4.183, df = 848, *p* = 0.000), the beginning tutors also received significantly lower scores than experienced tutors, which is an indication that beginning tutors have difficulty in giving students responsibility for their own learning processes. The mean scores of the beginning tutors on the factors 'collaborative' (*M* = 3.42), 'intra- and interpersonal learning' (*M* = 3.88), and 'contextual learning' (*M* = 3.77) indicate that beginning tutors score well above the midpoint of the scale, which indicates that students are generally satisfied with the beginning tutor behaviour on these factors, but that they still fall behind the scores of the experienced tutors. The overall grading of the students shows a significant difference in performance between the two groups of tutors (*t* = –3.03, df = 846, *p* = 0.003). Experienced tutors (*M* = 7.84) outperform beginning tutors (*M* = 7.61). Notwithstanding significant differences in the scores that students assign to the overall performance of beginning and experienced tutors, the results show that students give a positive assessment of the performance of both the beginning and the experienced tutors in facilitating learning in PBL groups.

Discussion

The tutor feedback questionnaire (TFQ) developed by Dolmans et al. (2003) proved to be a valid instrument for the appraisal of tutor performance. The confirmatory factor analysis of the TFQ showed that the five-factor model meets the various target values for a well-fitting model and could be used in this study for the evaluation of tutor performance. Student ratings of tutor performance are valid indicators and a useful source of information on tutor performance, but should certainly not be used as the only source of information for the appraisal of teachers (Dolmans et al., 2006b).

Beginning tutors were positively graded by their students. However, the positive results of the evaluation of beginning

Table 2: Mean score and standard deviation of beginning and experienced tutors

| | Evaluation of beginning tutors (*n* = 541) | | Evaluation of experienced tutors (*n* = 309) | |
Factors	mean	SD	mean	SD
Active learning	3.79	0.54	3.90	0.57
Self-directed learning	3.79	0.64	3.97	0.60
Contextual learning	3.77	0.59	3.85	0.59
Collaborative learning	3.42	0.73	3.50	0.79
Intra-interpersonal behaviour	3.88	0.62	3.91	0.68
Overall judgment	7.61	1.05	7.84	1.14

tutor performance cannot directly be attributed to the PBL training, because these tutors were not compared with other beginning tutors who did not participate in the introduction course on tutoring in problem-based learning. However, the course contributed positively to the overall tutor performance and the mean scores on all factors are well above the midpoint of the scales. The mean scores on the five factors ranging from *M* = 3.45 and *M* = 3.89 are comparable with the mean factor scores found by Dolmans et al. (2003) and are within the range between a score of 3 and 4 which they used as an indication for satisfying tutor performance. Beginning tutors seem to benefit from a relatively short introduction course to the various aspects of facilitating problem-based learning.

Tutor performance is not always a stable factor and may vary between differently performing PBL groups. It seems that tutor performance is both tutor specific and situation specific (Dolmans et al., 1999). Therefore, tutors should be trained in dealing with different kinds of PBL groups and learn how to experiment with new teaching behaviour to further students' learning productivity. Tutor training should become an indispensable aspect of the professional development of teachers in a PBL curriculum.

The overall conclusion of this study is that the participants in the beginning tutor training course were able to attain a very satisfactory level of performance in facilitating students in problem-based learning. The higher scores of the experienced tutors on the overall performance score and the scores on the different factors show that beginning tutors might benefit from follow-up courses in various aspects of problem-based learning. When we acknowledge the importance of tutors for student learning and aim at excellence in tutoring

at a high performance level, both beginning and experi-enced tutors might benefit from a comprehensive model for tutor development incorporating a variety of courses at different levels and addressing different subjects. Successful student learning in problem-based learning demands highly qualified tutors. Therefore, teacher participation in follow-up courses on various aspects of problem-based learning, for instance, curriculum development, finding and writing up problems, facilitation of the seven-step method, techniques for analysing problems, and application of new forms of assessment including self and peer assessment, might not only lead to better qualified and more competent tutors but might also improve the overall performance of students in a PBL curriculum.

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RHM

Music as an environmental factor in hospitality: what is the impact of background music on perceived atmosphere and sales in a school cafeteria?

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Extending the research of North and Hargreaves (1998)[1], this study investigates the influence of three different musical styles, namely lounge, pop and jazz on perceived atmosphere and sales in a school cafeteria. Interviews and questionnaires were conducted to acquire information about the patrons' perception of the characteristics of the cafeteria. Results indicate that there is significant differences between perceived characteristics and the three different musical styles. However, there was no significant difference between the music styles played and the purchases made during the testing period nor between the product items sold and the music played. The results of this research contribute to the better understanding of the consumer behaviour and can be used for commercial purposes.

[1] North AC, Hargreaves DJ. 1998. The effect of music on atmosphere and purchase intentions in a cafeteria. *Journal of Applied Social Psychology* 28: 2254–2273

Keywords: musical styles, perceived atmosphere, sales, school cafeteria

Introduction

Music is an element within the life of people that is constantly encountered in social and commercial contexts (North and Hargreaves, 1998). Customers expect to hear music in every establishment and physical setting they are interacting in (Magnini and Thelen, 2008). Thus, understanding peoples' everyday life as well as understanding the role of music within their lifestyle is important for the hospitality industry including bars, restaurants and other related services (North and Hargreaves, 1998). Music has the unique power to create stimulation and ambiance, manipulating emotions and behaviour in customers minds without their becoming aware of it (Blackmon, 2011; Blazer, 2006). Furthermore, music represents an establishment's design, also called 'musical fit', accentuating a company's culture (Hertzfeld, 2010). Therefore, the hospitality industry can make use of the capability of the music within their establishments to create memorable experiences and a pleasant atmosphere (Blackmon, 2001).

There are two different approaches when using music in a restaurant – background and foreground music (Blackmon, 2011). Background music is played mostly in high-end (gourmet) restaurants Background music' is played at low volume in order to create a peaceful and elegant atmosphere. On the other hand, foreground music seeks to create an exciting and lively atmosphere for patrons. It is a statement to reinforce the theme and experience of the business by reaching desired customers (Blackmon, 2001).

Numerous studies have been carried out on the impact of music in restaurants on the buying behaviour of guests and their perception of atmosphere. Others studies have measured the shopping behaviour of customers in supermarkets. Yet, investigations of the impact of music on students are very limited.

Therefore, a replication study was carried out on the impact of music on perceived atmosphere and purchase intention of students in the student cafeteria in the Stenden University, Leeuwarden.

Effect of music on perceived atmosphere

Atmosphere is an all encompassing term used to embody the experience felt. It can be consciously designed to reinforce buyers' responsiveness towards the consumption of a product. Thus, atmosphere is considered as more influential and powerful than the unrefined establishment itself (Kotler, 1973/1974). Atmospherics enhance the establishment's ambiance and character, specifically brightness, size, shape, volume, pitch, scent, freshness, softness, smoothness and temperature (Kotler, 1973/74). By introducing the concept of store atmospherics, a conscious designing of space to construct certain effects in buyers, was established (Kotler, 1973/74). Within this concept of atmospherics, music is seen as prodicing effective and powerful stimuli and an influential force with the capability of manipulating the customers' mindset (Magnini and Thelen, 2008). The stimuli influence arousal, a level of activation, and pleasure contribute to patrons' state of feeling by manipulating their emotions (Magnini and Thelen, 2008). Thus, a relationship between music and the listening circumstances in an environment exists (North and Hargreaves, 1998).

An appropriate use of loudness as well as a good fit in style of music makes the guest feel comfortable within the setting

they are part of (Blazer, 2006). In addition, Kellaris and Kent (1992) found that music can influence customers' time perception in positive ways. Other studies show that that pleasant music made the waiting lines seem shorter for the customers, leading to a reduced likehood of negative attitudes towards the length of waiting (Magnini and Thelen, 2008).

North and Hargreaves (1998) investigated the customers' 'liking' of the played music within a cafeteria and found that , relaxed and calm impression was associated with an enhanced liking level and variation of musical conditions changed the subjects' perception about the cafeteria.

Other research focused on the importance of diverse musical styles, where distinct styles produced a difference in perceived characteristics of a restaurant. (Wilson, 2003). The nature of the subjects' feelings demonstrated a connection to the understanding of music. The work of North and Hargreaves (1998) showed that the more the subject perceived the music as fun the cafeteria was perceived as fun. In addition, easy listening music, 'lounge music', achieved few positive effects on responses to the cafeteria environment. Classical music was perceived as contributing to an elegant environment whereas no music had the most peaceful impact on the subjects. By playing pop music, the subjects sensed the atmosphere as upbeat, assertive and less peaceful.

Effect of music on sales
Several studies proposed that music is likely to influence product choices and shopping behaviour, specifically the volume, speed and style of the music are identified as the main factors (Wilson, 2003; Milliman, 1982; Magnini and Thelen, 2008).

Regarding shopping behaviour, Magnini and Parker (2008) stated that the use of proper music made the customer spend more money. They showed that slow background music in a supermarket is associated with a slower shopping pace as well as increased sales. Under similar condiitons, restaurant guests dined longer, which is directly connected to higher beverage sales.

Other studies have also reported a connection between musical tempo and consumers' shopping pace. Milliman (1982) illustrated that rapid music shows similar results, arguing that more money is spent within a slow-music condition. In a subsequent study, Milliman (1986) controlled the tempo of music played in a restaurant, which showed that fast music led to quicker eating by the diners whereas slow music led to a slower eating pace. Additionally, volume has an impact on the time spent in a supermarket, music played at a low volume resulted into a longer stay while loud music within the environment led to a shorter stay (Magnini and Thelen, 2008).

Supplementary studies suggest that the style of music played is likely to have an additional significant effect on customers' perception and choices (Bruner, 1990), which is as well-supported by the investigation of Yalch and Spangenberg (1990). Furthermore, the appropriate 'fit' of music to context relates to an enhanced persuasion of consumers, for instance, classical music played in a wine cellar led to consumers buying more expensive wine. (Areni and Kim, 1993). Wilson (2003) proposed that there are differences in purchasing between no music played, jazz, easy listening, classical and popular. These studies verify that

certain music styles might control the assortment of certain products as well as different purchase approaches.

Overall, North and Hargreaves (1998) declared that their study proposition requires validation by future research and investigations. In reply, the current study investigates the effect of music on perceived atmosphere and purchase intention in a school cafeteria and poses two research questions:
• Does musical style influence perceived atmosphere of the school cafeteria?
• Does musical style influence the sales in the school cafeteria?

Methods

Participants
The cafeteria was situated in the Stenden University in Leeuwarden, the Netherlands. Consequently, all students and teachers who were present at the Stenden University's cafeteria were selected as the population for this project. The cafeteria offered sitting areas for up to 65 persons. Subjects were presented with a set of questionnaires and interviews during the 4-week experiment phase, 3 days a week. The testing took place between 12:30 until 14:00 on the busiest days of the week – Tuesdays, Wednesdays and Thursdays.

Materials and design
Field research has been carried out with the help of the authors as participating observers. The authors observed and recorded data through interviews and questionnaires. During the 12 days quasi-experiment, each day an 80 minute CD of the representing musical styles – lounge music, pop music and jazz music – was played. Normally, there was no music played in the cafeteria before the experiment. For the research, the music was played on a high quality CD player through one speaker in one corner, in the dining area of the cafeteria. The volume was set on medium level, allowing the patrons to hear the music clearly in the dining area and at the same time let them talk over it comfortably. However, the music could be heard only slightly from the queues at the cashier. The music was played continuously throughout the experimental time frame.

A time-series design has been used for the research, in order to observe the dependent variables which, in this research, were customers' perceptions of the of the cafeteria's characteristics and the product items sold. The differences were examined throughout the four weeks, with the rotation of the musical styles' order, the interviews and the questionnaires carried out. In week one and three the order of music styles presented were lounge music, pop music, and jazz music. This order has changed in the second and the fourth week to jazz music, lounge music, and pop music.

Changes in purchase intentions with style of music were measured through observing the most purchased items.

Questionnaires
The sample group was asked personally by the authors to fill in the questionnaire. The questionnaires were handed out during the stay of the customers at the cafeteria and were self-administered by the guests themselves. Questionnaires included 20 characteristics of the atmosphere in the cafeteria, and were asked to choose the characteristics on an 11-point scale (0 = *I personally think that the cafeteria does not possess*

this characteristic; 10 = I personally think that the cafeteria definitely possesses this characteristic) (see Appendix 1) .The 20 adjectives used in the questionnaire were derived from the original study by North and Hargreaves (1998).

Interviews
The sample group was also interviewed through a two-way systematic conversation, in order to collect information for the research. The type of the interview was 'focused', allowing the authors to execute an interview which concentrated on the customers' cafeteria experience due to the music's effect. Firstly, the subjects were asked whether they recognized the music while dining. Subsequently, the guests had to identify the type of music played as well as to determine their prefer-ence regarding the music styles (or no-music played) in the cafeteria. Moreover, they were asked to indicate whether music adds value to their cafeteria experience or not.

Data analysis
Collected data from the questionnaires were analysed following the methodology of the original study of North and Hargreaves (1998), using IBM SPSS Statistics ®. An analysis of variance was carried out to investigate differences between the three musical styles on the customers' ratings of the characteristics of the cafeteria, and between product items sold in the cafeteria and the three different musical styles and the three musical styles and the total sales. A *t*-test was used to test if purchases were made due to music played.

Results

Questionaires were completed by 120 students andteachers at the university (56 males, 64 females; mean age = 22.3 years, SD = 4.11).

The analysis of variance revealed that there was a significant difference in perceived characteristics of the cafeteria between the three musical styles (Table 1). Characteristics that were differentially rated are: exciting, spiritual, up-market, restful, sophisticated, happy, rebellious, youthful, fun, feminine, invigorating, aggressive, fashionable and sensual. These findings indicate that pop music contributes to the perception of the cafeteria as youthful, exciting, fashionable and invigor-ating. If the music style is changed to jazz, the cafeteria is perceived as happy, restful, peaceful, feminine, fun, sensual and cerebral. Furthermore, if lounge music is played the cafeteria is perceived as up-market and sophisticated.

Table 2 illustrates that there is no significant difference in perceived characteristics between the three music styles on the aspects: masculine, cerebral, fresh, down-market and peaceful.

Total sales
Analysis of Variance was carried out to determine any signifi-cant differences between the total sales and the three musical styles. The test reveals that there is no significant difference in total sales between the three music conditions (F = 2.037, df = 2, p = 0.155).

Furthermore, a *t*-test was carried out to assess whether purchases were made due to the music played by comparing sales during periods with or without music. The result shows no significant difference between the presence of music and the total sales (t = 1.979; df = 5,659, p = 0.098).

Table 1: Characteristics perceived significantly different between three music styles.

| Characteristics | Mean Score | | | | |
	Lounge	Pop	Jazz	$F(2,117)$	p
Youthful	5.13	7.95	7.58	27.542	<0.001
Happy	5.80	7.00	7.83	10.925	<0.001
Fun	5.43	7.63	7.38	14.617	<0.001
Exciting	4.00	7.60	7.30	59.769	<0.001
Fashionable	5.78	7.23	6.23	5.540	0.005
Restful	5.83	4.83	7.05	8.695	<0.001
Invigorating	5.15	6.60	5.80	6.952	0.001
Feminine	4.83	4.53	6.25	7.627	0.001
Up-market	6.23	4.03	5.38	9.336	0.000
Sensual	4.78	3.70	5.63	6.162	0.003
Sophisticated	5.23	3.95	3.55	5.907	0.004
Spiritual	3.83	2.80	4.60	4.427	0.014
Aggressive	1.58	3.93	1.80	16.639	<0.001
Rebellious	2.03	3.63	2.48	6.894	0.001

Table 2: Characteristics not significantly different perceived in three musical styles

Characteristics	$F(2,117)$	p
Masculine	0.023	0.978
Cerebral	2.965	0.055
Fresh	2.060	0.132
Down-market	0.242	0.786
Tacky	0.512	0.601
Peaceful	0.544	0.582

Products sold
In each of the musical conditions the highest sales were made with Turkish toast, cappuccino, and coffee crème (Table 3). An analysis of variance showed no significant variations between sales of the l almost all products under the three conditions of musical style. Coffee crème was an exception (F = 3,624, df = 3, p = 0,040).

Discussion

Perception of the cafeteria
The aim of this study was to identify any impact of background music on perceived atmosphere in a school cafeteria, specifically how patrons perceived the cafeteria's environment due to three musical styles played. Results reveal that different musical styles influenced the subjects' percep-tion of the cafeteria environment, since ratings differed significantly between the three conditions for 15 of the 20 adjectival scales. These finding are consistent with the original study of North and Hargreaves (1998).

The characteristics showing a significant difference are exciting, spiritual, up-market, restful, sophisticated, happy, rebellious, youthful, fun, feminine, invigorating, aggressive, fashionable and sensual whereas masculine, cerebral, fresh, down-market and peaceful are rated non-significantly different. The above mentioned findings provide evidence that the five adjectival characteristics do not suit the cafeteria's atmosphere.

Furthermore, several patterns emerged per music styles regarding perceived characteristics. Pop music was associated

Table 3: Sales of several products under three different musical styles

Product Items	Sales (€)			F*	p
	Lounge	Pop	Jazz		
Salmon Wrap	103.75	132.00	92.25	1.314	0.309
Bun Healthy	157.50	189.00	181.50	2.091	0.147
Bun Filet American	222.75	204.75	207.00	3.138	0.059
Bun Cream Cheese	166.50	227.25	166.50	1.287	0.317
Bun Italian Ham	335.00	317.50	362.50	0.140	0.934
Turkish Toast	1 001.00	1 075.25	1 020.25	0.707	0.564
Foccacia Tomato/Mozzarella	272.50	252.50	310.00	2.514	0.101
Toasted Ham/Cheese	261.00	267.00	237.00	1.378	0.290
Coffee Crème	351.00	356.25	383.25	3.624	0.040
Espresso	27.00	31.50	32.25	0.479	0.702
Cappuccino	415.65	408.00	408.00	0.080	0.970
Tea	97.20	104.40	73.20	0.318	0.812
Drink Yoghurt	53.55	54.40	40.80	0.433	0.733
Earth Water (Still)	137.00	131.00	108.00	0.576	0.640

* df = 3

with the environment being perceived as generally youthful, exciting, fashionable and invigorating, and least spiritual. Lounge music was related to the atmosphere being perceived as up-market and sophisticated, and least aggressive.

Moreover, with the change of the musical styles to jazz, the subjects perceived the cafeteria's environment as restful, peaceful, feminine, fresh, sensual and cerebral, and least aggressive, similar to the response to lounge music.

Actual sales

No conclusive evidence was found that sales were affected by the musical styles played. Furthermore, there was no relationship between the purchases made and the presence or absence of music. These findings contradict the formal study of Wilson (2003), indicating that there are differences in purchasing daring periods with and without music and also among different music styles.

Furthermore, it was questioned whether the musical styles influence the individual product items bought in the cafeteria. The study of Wilson (2003) has implied that music is likely to influence the product choices and shopping behaviour of the patrons, opposing the findings of this study..

Even though the purchases were not affected by the presence of music or by the different musical styles played, through an interview, it was discovered that 94.16% of the patrons agreed that music a value to the perceived experience in the cafeteria.

Limitations

During the quasi experiment, the authors have faced several drawbacks. Firstly, there has been only one speaker available for this experiment situated in one corner of the dining area. The volume was set on a medium level allowing the subjects to hear the music in the background. However, the music was not audible in the entrance area. Hence, the music could not be heard while the patrons were waiting in a queue to make their purchases.

Another limitation of this study was the short amount of time students/patrons were prepared to spend in the cafeteria due to classes and other educational obligations. The time spent by students in the cafeteria is relatively short; hence,

they purchase food/beverages and leave directly. Moreover, the students are not sensitive to the different musical styles played. The genre of the music did not make a difference to them, as apparent during the interviews.

Implications

Since the atmosphere was perceived differently per musical style, it can be speculated that music has an impact on the patrons' views and feelings in an environment. This finding corresponds with that of Magnini and Thelen (2008) who stated that music is seen as an influential force with the capability to manipulate the customers' mindset. Furthermore, the original study of North and Hargreaves (1998) supports this speculation by indicating that there is a relationship between music and the listening circumstances within an environment. However, the results showed that the diverse musical styles did not affect the patrons' purchases which may indicate that patrons behave differently to music in a cafeteria environment than in a dining restaurant. It can be expected that the intentions of the patrons change per venue. Additionally, the product items sold were also not influenced by the musical styles, which is in contradiction with the findings of Bruner (1990), who demonstrated that different musical styles have a significant effect on patrons' choices.

Nevertheless, the present results show coherence with the customers' perception and the music played, but not with the product choices. The reason for this outcome could be that students in the investigated environment already have a preference over products regardless of music played, and therefore, there are not sensitive to different genres of music. Even though the purchases and total sales were not affected by music played, almost all customers agreed that music adds value to their stay. Hence, it enhances the environment's ambiance.

This study supports the practical application that music may affect the perceived characteristics of any dining venue. Firstly, it can be suggested that different musical styles influence the establishment's ambiance. Thus, store managers may use this advantage to enhance an establishment's design emphasising the company's culture and resulting in an ultimate musical fit. Moreover, it is recommended to investigate the most

influential and preferred musical styles in order to create a specific atmosphere which will differentiate the environment from its competitors. Importantly, the image of the company may be reflected and represented by music. Nevertheless, the main idea behind playing music in dining venues is to create an enjoyable experience for patrons. Store managers should ensure that they select the type of music in the store with care, taking into account the different tastes regarding musical styles of various customer segments.

Although in the present study, the total sales were not influenced by the presence of music in the school cafeteria, music creates additional value to the already existing dining experience. There are obvious practical applications to using music as a commercial tool in various school dining outlets. Concerning school cafeterias, the music system has to be set up properly in order to reach every customer in the entire dining area. Furthermore, a more relaxed atmosphere has to be provided to make students stay for a longer period of time and eventually purchase more.

Generally, the present study reveals that students do not prefer any particular musical style. Hence, it is recommended to replicate this study in a different environment with another student sample to further investigate whether background music has an effect on sales and purchase intention in the school cafeteria.

To conclude, this research has illustrated that music is an influential environmental factor. Hence, it influences the perceived characteristics of the environment in which it is played. Additionally, it gives evidence that different musical styles create different atmospheres in an environment. In that way it is obvious that music aids commercial processes. However, this study did not provide enough evidence in change of sales influenced by different musical styles.

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RHM

The effects of education and income on consumers' motivation to read online hotel reviews

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An increasing number of consumers are using the Internet for online advice and recommendations. Consumers read these electronic word-of-mouth (eWOM) comments for various reasons. The current study is an extension to that of Kim, Mattila, and Baloglu (2011)[1], with the aim of measuring the effects of income and education on eight motives for reading online reviews as described by Hennig-Thurau and Walsh (2003)[2]. A 20-item survey was administered to a sample of 56 Dutch respondents. The results indicate that income and education do have an effect on some of the motives. It has been found that more highly educated individuals tend to be less influenced by eWOM, and people with a lower income tend to use eWOM particularly for dissonance reduction. However, results should be interpreted with caution as not all educational levels and income categories were equally represented.

[1] Kim EEK, Mattila AS, Baloglu, S. 2011. Effects of gender and expertise on consumers' motivation to read online hotel reviews. *Cornell Hospitality Quarterly* 52: 399–406.
[2] Hennig-Thurau T, Walsh G. 2003. Electronic word-of-mouth: motives for and consequences of reading customer articulations on the Internet. *International Journal of Electronic Commerce* 8: 51-74.

Keywords: consumer motives, education, eWOM, income, online reviews

Introduction

The emergence of the Internet has made it easier for consumers to share their experiences, via word-of-mouth (WOM), regarding products or services that they have purchased (Black and Kelley, 2009). Websites such as TripAdvisor allow consumers to review the various WOM comments of other consumers on specific products or services. Through the emergence of the Internet, traditional WOM, which is defined by Hawkins and Mothersbaugh (2010) as 'individuals sharing information with other individuals in a verbal form' (p 238), has developed into a form called electronic word-of-mouth (eWOM). Electronic word-of-mouth is defined by Hennig-Thurau et al (2004) as 'any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet' (p 39). Dellarocas (2003) described a combination of three aspects that differentiate eWOM from traditional WOM:
- eWOM has a larger scale than traditional WOM, which is made possible by the Internet's low costs and the two-way communication capabilities, and it is an essential future for the effectiveness of the communicated WOM information;
- eWOM enables businesses to accurately monitor and control their operations, for example, by determining whether to provide particular WOM information or not; and
- eWOM has as a challenge the interpretation of information due to distinctive characteristics of the Internet, such as the ease of changing online identities.

Various studies have been conducted about the impact of eWOM on consumers' decision making. Solomon (2011) points out that knowledge about products or services is mainly gained via WOM rather than from company advertisements. For example, a, friends share a lot of product-related informa-tioduring conversations . In general, informal sources, such as peers, are more credible than formal sources, such as advertise-ments, due to the perception that the source does not benefit from the transaction of the product or service they endorse (Schiffman et al., 2008; Solomon, 2011). In addition, the study of Bansal and Voyer (2000) suggests that WOM information will have a greater influence on a consumer's purchase decision if it was actively sought. Moreover, negative WOM comments are weighed more heavily in the product or service judgment of consumers than positive WOM comments (Solomon, 2011).

In the beginning of 2011, a study was conducted that measured the effects of gender and expertise on the consum-er's motives to read online hotel reviews (Kim,et al. 2011). Such online hotel reviews are of growing importance in the hotel industry, as proven by Sidali et al. (2009) in an experiment where respondents chose online reviews more frequently than other information sources such as travel guides. However, the study of Kim et al. (2011) was limited in that the respond-ents were from a higher educational and income level than the general visitors of the tourist destination. In order to find out how important education and income actually were as variables in the study of Kim et al. (2011), the current descrip-tive study was undertaken, with the main purpose of investi-gating the effect of education and income on the consumers' motivation to read online hotel reviews.

Literature review

Motives for reading eWOM
Based on previous studies that elaborated on the needs of consumers for seeking WOM information, Hennig-Thurau and Walsh (2003) identified eight motives for reading eWOM. These are: risk reduction;, reduction of search time; determination of social position; dissonance reduction; belonging to a virtual community; to learn what products are new in the marketplace; remuneration; and to learn how a product is to be consumed.

The risk reduction motive implies that in order to make the right buying decision, consumers seek assurance from the experiences of other consumers with regard to a certain product or service. The dissonance-reduction motive refers to consumers seeking confirmation of their buying decision through reading other consumers' experiences after purchasing a certain product or service. Consumers may also want to seek assurance by comparing their own evaluation of a certain product or service to that of others, which is called the determination-of-social-position motive. Consumers who enjoy participating on a platform where experiences about products or services could be shared, demonstrate the belonging-to-a-virtual-community motive. If consumers are being paid for evaluating the contributions of other consumers, then the motive is that of remuneration. Consumers could also consult opinion platforms in order to find out what new products or services are being offered, which is the motive of learning what products are new in the marketplace. The reduction-of-search-time motive refers to situations when consumers perceive it to be quicker to obtain information on the quality of products or services via opinion platforms, and prefer to obtain this information in advance. The final motive is that of learning how a product is to be consumed, which concerns consumers experiencing difficulties or problems with regard to a product or service and then seeking advice or solutions on opinion platforms.

Education
The influence of an individual's educational level on their use of the Internet has been studied in several ways. This covers topics such as Internet usage (Agarwal and Prasad, 1999; Porter and Donthu, 2006; Willis and Tranter, 2006), the impact of eWOM on the decision making process (López and Sicilia, 2011) and the trust of consumers in eWOM (Yoo et al., 2009).

Willis and Tranter (2006) examined the social barriers to Internet usage in Australia with data covering 1998 - 2003.They came to the conclusion that with a higher educational level, the Internet was used more. This is in line with the diffusion theory, where the earlier adoptors of new technology are characterised by having obtained more education (Rogers, 2003). Furthermore, findings suggest that less educated individuals perceive the Internet as less easy to use than higher educated individuals, where perceived ease of use plays a mediating role towards the attitude concerning the Internet and this eventually influences Internet usage (Agarwal and Prasad, 1999; Porter and Donthu, 2006).

The study of Yoo et al. (2009) indicated that educational level did not have a significant influence on the trust an individual has in eWOM. However, the results of the study of López and Sicilia (2011) suggest that the influence of eWOM on the decision making process of an individual will be lower when the educational level increases. An essential difference between the study of Yoo et al. (2009) and that of López and Sicilia (2011) is the large difference in the sample sizes, 1170 vs 165 responses, respectively.

Income
The influence of an individual's income on the use of Internet has been less thoroughly studied with little work relating to eWOM. Willis and Tranter (2006) found that households with a higher income are more likely to use the Internet than households earning less. This is as well in line with the diffusion theory, where the earlier adaptors of technology have besides more education also a higher income (Rogers, 2003). Additionally, Porter and Donthu (2006) suggest that individuals with a lower income perceive the Internet as less useful and less accessible than individuals with higher income. , As mentioned above, perceived ease of use and perceived access barriers play a mediating role with regard to the attitude towards the Internet, which ultimately influences Internet usage.

Research questions
This study seeks to address the following research questions
• Does educational level influence the motivation of the consumer to make use of eWOM?
• Does the level of income of the consumer influence the motivation to make use of eWOM?
   Figure 1 shows a concept map illustrating these research questions.

Methodology

Sample
A convenience sample was obtained by distributing electronic versions and hard copies of the survey to our friends, family, relatives, colleagues, and teachers of Stenden University of Applied Sciences in December 2011. Students were excluded from the sample as we looked for respondents that have completed an education and receive a monthly gross income in order to be able to measure these effects. To exclude students who filled in the questionnaire unintentionally, no-one under the age of 25 was considered. When distributing the survey, no account was taken whether or not the respondents were hotel visitors. There was no attempt to represent each income and education category equally.

Instrumentation
The instrument used to obtain the quantitative data was a survey. It contained 16 statements considering the eight motives, as formulated by Hennig-Thurau and Walsh (2003). The 16 statements could be rated on a 5-point Likert scale, anchored from 1 (strongly disagree) to 5 (strongly agree). For the convenience of our sample the questionnaire was provided in Dutch. Dutch education levels were mapped to United Kingdom levels using the International Standard Classification of Education (UNESCO Institute of Statistics, 2009) .
   In the survey a set of two questions per motive was asked, where the average of the two answers will represent the
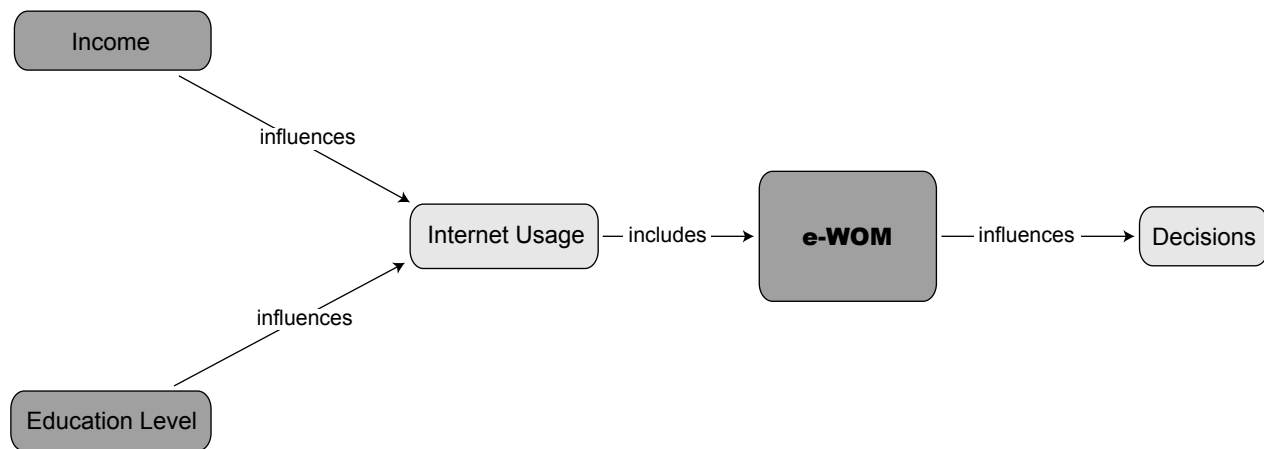
Figure 1: Concept map of the effects of education and income on the consumers' motivation to read online hotel reviews

motive. To test for any association between motives, Pearson's correlation coefficient was applied. In order to find out if the factors 'education' and 'income' have an effect on any of the motives, a one-way ANOVA was used. Post hoc tests could not be performed as some groups had fewer than two cases. The analyses were carried out using IBM SPSS Statistics ®

Results

In total 77 surveys were collected. After excluding respondents under 25-years of age, to eliminate students, and taking out a few incomplete questionnaires, we were left with 56 usable surveys. Table 1 shows the demographics gender, education and monthly gross income of the respondents. Figure 2 shows a histogram of the age distribution.

Table 2 shows the correlations between the different motives. Looking at the correlation between the different motives, it can be stated that the motive of risk reduction has the fewest significant relations with the other motives. The only significant relation to risk reduction was to be found in relation with remuneration ($r = -0.338$, $p = 0.011$). In addition, it is the only negative significant correlation. Furthermore, it can be concluded that the 'belongingness' to a virtual community has the most significant relationships with the other motives. The strongest significant relation can be seen between the motives to belong to a virtual community and remuneration ($r = 0.785$, $p = 0.032$), and the weakest significant relation can be seen between the can be seen between the learning what is new in the marketplace and the remuneration motives ($r = .287$, $p = 0.032$).

When looking at the results of the first one-way ANOVA analysis, with educational level as the independent variable, it can be concluded that five motives have a significant difference in means between the different educational levels. These motives are dissonance reduction $F(5,50) = 5.785$, $p < 0.001$), learning how to consume a product ($F(5,50) = 5.421$, $p < 0.001$), determination of social position $F(5,50) = 2.421$, $p = 0.048$), belonging to a virtual community $F(5,50) = 4.303$, $p = 0.002$), and learning what is new in the marketplace $F(5,50) = 2.462$, $p = 0.045$). Table 3 summarizes the results of the five motives that were significant, together with the

Table 1: Demographics of the survey respondents ($N = 56$)

	n	%
Gender		
Male	20	35.7
Female	36	64.3
Education		
Pre-vocational secondary education	3	5.4
	1	1.8
Senior general secondary* education	14	25.0
Vocational education	23	41.1
Higher professional education	14	25.0
University education	1	1.8
Other		
Monthly gross income		
Less than €1 000	1	1.8
€1 000 to €2 000	14	25.0
€2 000 to €3 000	17	30.4
€3 000 to €4 000	13	23.2
€4 000 to €5 000	6	10.7
€5 000 to €6 000	4	7.1
More than €6 000	1	1.8

* The Dutch HAVO and VWO programmes and equivalent to senior general secondary school level.

means per educational level. When looking at all the means per motive, the means of the pre-vocational secondary education group are within all motives the highest in comparison to the means of all the other educational levels. A clear contrast can be seen with the highest and lowest mean of the educational groups within the motives.

When looking at the results of the second one-way ANOVA analysis, with income level as the independent variable, two motives have a significant difference in means between the different income levels. These motives are dissonance reduction ($F(6,49) = 2.352$, $p = 0.045$) and risk reduction ($F(6,49) = 3.300$, $p = 0.008$). Table 4 summarizes the mean scores per income level for these two motives. With regard to the dissonance reduction motive, the income level of less than €1 000 had the highest mean score (mean = 4.00), whereas

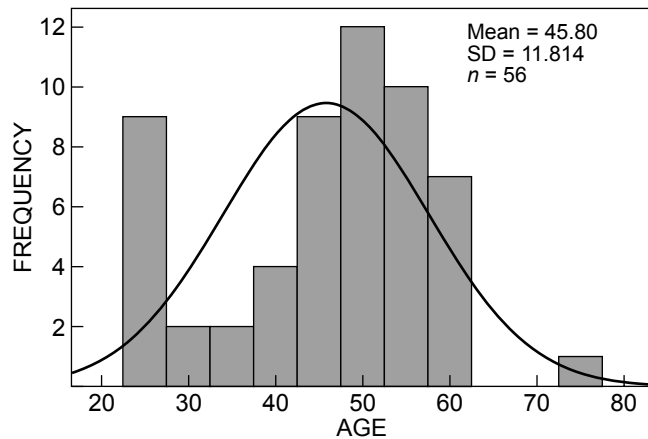the income level of more than €6 000 had the lowest mean score (mean = 1.00). Concerning the risk reduction motive, the income level of €1000–€2 000 had the highest mean score (mean = 4.39), while the income level of more than €6 000 had the lowest mean score (mean = 1.00).

There were two motives that did not have any significant differences within both the educational level and income level factors. These are the remuneration motive (educational level: ($F_{(5,50)}$ =1.615, p = 0.173; income level: ($F_{(6,49)}$ = 0.814, p = 0.564) and the reduction of search time motive (educational level: ($F_{(5,50)}$ = 0.809, p = 0.549; income level: ($F_{(6,49)}$ = 1.526, p = 0.190).

Overall, the results indicate that educational level and income level do have a certain effect on some of the motives for reading eWOM, In general, individuals of the lower educational level groups were more likely to read eWOM for dissonance reduction, learning how to consume a product, determination of social position, belonging to a virtual community, and learning what is new in the market-place reasons. With regard to the income level, individuals of the lower income groups were more likely to read eWOM for dissonance reduction and risk reduction reasons. However, results should be interpreted with caution as some groups within the educational and income levels only had one respondent.

Figure 2. Histogram of the age distribution of the respondents)

Mean = 45.80
SD = 11.814
n = 56

Table 2: Correlation matrix showing Pearson's correlation coefficients for each pair of motives (n = 56)

Dissonance reduction	Remuneration	To learn how to consume a product	Determination of social position	Belonging to a virtual community	To learn what is new in the marketplace	Risk reduction
0.369**						
0.620**	0.462**					
0.671**	0.351**	0.737**				
0.464**	0.785**	0.547**	0.493**			
0.402**	0.287*	0.414**	0.430**	0.415**		
0.218	−0.338*	0.064	0.125	−0.099	0.159	
0.344**	−0.095	0.231	0.214	0.066	0.349**	0.695**

. *Correlation is significant at the 0.05 level. **Correlation is significant at the 0.01 level

Table 3: Significant one-way ANOVA results with the mean scores per educational level

	Mean Score						ANOVA	
	Pre-vocational secondary education (n = 3)	Senior general secondary education (n = 1)	Vocational education (n = 14)	Higher professional education (n = 23)	University education (n = 14)	Other (n = 1)	F	p
Dissonance reduction	4.67	2.00	3.39	2.65	2.43	3.50	5.785	<.0001
To learn how to consume a product	4.50	1.50	2.86	2.28	1.96	2.00	5.421	<.0001
Determination of social position	4.33	2.50	3.14	2.63	2.71	2.00	2.421	0.048
Belonging to a virtual community	4.50	2.50	2.25	2.00	1.64	2.00	4.303	0.002
To learn what is new in the marketplace	4.33	1.00	2.61	2.43	2.21	1.50	2.462	0.045

Table 4: Significant one-way ANOVA results with the mean scores per income level

	Mean Scores							ANOVA	
	Less than €1 000 (n = 1)	€1 000 to €2 000 (n = 14)	€2 000 to €3 000 (n = 17)	€3 000 to €4 000 (n = 13)	€4 000 to €5 000 (n = 6)	€5 000 to €6 000 (n = 4)	More than €6 000 (n = 1)	F	p
Dissonance reduction	4.00	3.25	3.12	2.69	2.50	2.13	1.00	2.352	0.045
Risk reduction	3.50	4.39	3.76	3.54	4.33	3.50	1.00	3.300	0.008

Discussion

As an extension to the study of Kim et al. (2011), we tested if income and education has an effect on the motives of consumers to read eWOM. However, in contrast to the study of Kim et al. (2011), only the range of motives formulated by Hennig-Thurau and Walsh (2003) were used. Our results indicate that in general, income and education do have an effect on the motives to read eWOM, except for the remuneration and reduction of search time motives.

Education level appears to have an influence on the dissonance reduction, learning how to consume a product, determination of social position, belonging to a virtual community, and learning what is new in the marketplace motives. It seems that when the educational level increases consumers tend to be less influenced by eWOM, which is in line with the study of López and Sicilia (2011). However, it is assumed that more highly educated individuals use the Internet more than those with less formal education , in accordance with Rogers (2003) and Willis and Tranter (2006). It is not known if the purposes for using the Internet varies within different educational levels, and this would be a valuable line of further investigation

Income level only seemed to have an influence on the dissonance reduction and risk reduction motive. Individuals with a lower income were more driven by the dissonance reduction motive than higher income individuals. A possible explanation for this could be that due to that lower income individuals have less to spend, and they like to be reassured by the Internet that they made the right buying decision with their money.

As eWOM is becoming an important source of information, it is advisable for managers to become aware what motivates their target market have to read eWOM. Education and income are common segmentation variables for companies. These results could be used, for instance, for presenting the right eWOM comments on the company's website. Perhaps even special review websites could be created to target specific consumers in order to meet the specific purposes of reading eWOM.

We advise that this study should be replicated as a relatively small sample has been obtained for this study and a consequence of this was that the income and educational level groups were not equally represented. The findings could not be generalized as there were only Dutch respondents. Future studies could therefore also focus on cross-cultural differences between the different motives.

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To what extent are restaurants prepared to respond to the needs of guests with food allergies and intolerances?

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The purpose of this research is to examine the knowledge of restaurants regarding food allergies and intolerances. The main research question is this: to what extent are restaurants prepared to respond to the needs of guests with food allergies and intolerances? This study describes restaurants' knowledge of food allergies and intolerances and the training which is provided to employees. The research was conducted by means of surveys which were distributed in Leeuwarden and its surroundings. Many hospitality establishments are insufficiently prepared for diet-specific requests from guests with food allergies or intolerances. The majority of respondents did not have a suitable menu available and knowledge and awareness amongst managers and employees about food allergies and intolerances is very limited. Furthermore, limited staff training is provided. These outcomes are cause for concern. Adequate knowledge of this subject prevents incidents where guests suffer allergic reactions which may even be fatal. A recommendation for additional research is to replicate this study with more respondents, which will provide more accurate results.

Keywords: coeliac disease, food safety, knowledge about food allergies, attitude to food allergies, menu information

Introduction

A 22-year-old woman, talented and full of promise, suddenly dead after an unexpected incident'. In this case the accident did not occur in a car but in a restaurant [...] the culprits were peanuts in a dessert tasted by the young woman ... (Allen, 2004).

This research was prompted by reading of this incident. Nowadays, many companies serve the hospitality industry. However, based on personal experiences, many restaurants are neither prepared for nor have sufficient knowledge of food allergies and intolerances and greater knowledge will help to prevent allergic reactions or even death, hence the question posed in this research is: to what extent are restaurants prepared to respond to the needs of guests with food allergies and intolerances? Some research on this topic has been conducted in the United States of America, for example, see Borchgrevink et al. (2009).

This study was conducted because the number of people requiring emergency medical treatment after suffering allergic reactions to food has risen by an alarming 7% in the last 10 years. The consequence of the dearth of knowledge is that it is generally unsafe for people with food allergies or intolerances to dine in restaurants, because staff do not know how to handle such situations. In terms of a food allergy, the body's immune system overreacts in response to the presence of the allergen, which is wrongly perceived as a threat (Marshall, 2001). In terms of a food intolerance, a digestive-system response rather than an immune-system response occurs when a particular foodstuff irritates the digestive system or when the sufferer is unable to properly digest or break it down. Intolerance to lactose, which is found in milk and other dairy products, is the most common food

intolerance (WEBMD, 2009). Many people underestimate the effects a particular product might have on a person with a food allergy; even the smallest amount of an allergen could have disastrous consequences (Pratten, 2003). This research was therefore conducted to examine the extent to which restaurants are prepared to respond to the needs of guests with food allergies and intolerances.

Pre-research aims are as follows (and results are discussed in the literature review below):
• to provide information about various types of food allergies and intolerances;
• to establish the differences between and the symptoms of particular food allergies and intolerances.

Our objectives were:
• to provide insight into the knowledge (or lack thereof) possessed by managers and employees of food allergies and intolerances within the hospitality industry. The outcome of this objective is provided by the questionnaires which were completed;
• to provide information about the extent to which restaurants are prepared to meet a guest's diet-specific request. The outcomes of the survey show the levels at which restaurants are successfully meeting special food requests from guests with food allergies and intolerances.

Some pertinent secondary questions were posed, to help gather complete and necessary information for a clearer overall view on the research:
• how knowledgeable are restaurants about the ingredients and possible allergens in their food?
• what knowledge exists in restaurants about the food intolerance called coeliac disease?

- what level of training is provided to restaurant employees regarding food allergies and intolerances?
- what measures can be taken to prepare for a diet-specific request?

Based on comparable and previous research conducted on this topic, outcomes were alarming; according to this research, many hospitality establishments are unprepared to respond adequately to the needs of guests with food allergies. The hypothesis of this research is therefore that restaurants are not well prepared for food requests from guests with food allergies or intolerances. In addition, managers and employees do not have sufficient knowledge of these in order to respond adequately to guest needs.

According to Borchgrevink (2009), restaurants' response rates were very low: only 5.8% of all issued surveys were usable. A possible limitation may therefore be the number of usable responses gleaned from the questionnaire.

The target group of this research is managers and employees of hospitality establishments, particularly those working in Food and Beverage departments. The outcomes of this research display the (lack of) knowledge that employees have about food allergies and intolerances.

Literature review

Up to 5% of any total population are restricted in their food choices, due to allergies or intolerances which, in the worst cases, can be fatal. While almost any food can cause an allergic reaction, the most common types of food allergies and intolerances are referred to as the 'Big Eight': milk; eggs; fish; crustaceans; tree nuts; peanuts; wheat; and soybeans (Abbot, 2007). Regarding allergies to fish, crustaceans and tree nuts, the specific type should be specified (Borchgrevink et al., 2009). The 'Big Eight' cause 90% of all food-based allergies or intolerances (Abbot, 2007). An allergic reaction can lead to anaphylaxis – peanuts, tree nuts and shellfish are most likely culprits (Abbot, 2007). Milk, eggs, fish and soy also however have significant potential to cause anaphylactic shock (Schlosser, 2001). Anaphylaxis is a severe allergic reaction that is rapid in onset and may be life-threatening (Food Allergy and Anaphylaxis Network, 2011).

Allergic reactions to food can be identified as food allergies or food intolerances, the former recognised as an immediate and intense reaction to a specific type of food, which is caused by the body's immune system. Symptoms can include vomiting, diarrhoea, cramps, swollen airways and a drop in blood pressure. Even death can occur. A food intolerance is a hypersensitivity to a particular food but the reaction is not caused by the immune system; symptoms are caused by the digestive system. These symptoms cannot be clearly defined as occurring during an allergic reaction and will disappear over a period of time (Pratten, 2003). Besides these symptoms, anaphylaxis can occur – the severe reaction can be life-threatening due mainly to swelling of the airways.

Coeliac disease is a frequently-occurring food intolerance whereby the digestive system is unable to break down gliadin, a protein found in wheat. The immune-system reaction results in damage to the small intestine, whereby nutrients are not properly absorbed. Gluten is the collective name for the proteins found in specific grains which are harmful to persons with coeliac disease (Celiac Disease Foundation, 2011). People who have a gluten intolerance should avoid foods containing gluten: wheat, oats, barley and rye. Symptoms are similar to reactions caused by food intolerances but can occur up to six hours after the consumption of the allergen. It is therefore sometimes difficult to determine which food had contained gluten (Food Allergy and Anaphylaxis Network, 2008). The main reason why this research specifically focusses on coeliac disease is due to the fact that it affects one out of every 133 people, children as well as adults, yet 97% of sufferers go undiagnosed (Celiac Disease Foundation, 2012).

Since allergic reactions to food can be fatal, it is important that hospitality establishments have adequate knowledge of the most common allergies and intolerances. To date, however, managers and employees are generally insufficiently familiar with the causes and consequences of allergic reactions to food.

Nowadays in the hospitality industry, much training is provided to employees of different establishments, but little or none of it covers food allergies (Pratten, 2003). A significant outcome of this research is that management should be in a position to indicate that employees know how to handle a situation where a guest has a food allergy. None of the surveyed establishments, however, had protocols or training available, describing how to proceed in these cases (Abbot, 2007). The main reason for many establishments not offering information about food allergies in their training programmes is simply that many managers and owners had no such training themselves (Mandabach, 2005).

Since there is no cure for food allergies, the only way to prevent allergic reactions is avoidance of harmful foods, although it is sometimes difficult to identify allergens within a particular food (Pratten, 2003). To ensure that products do not contain allergenic substances, it is imperative that chefs read ingredient and allergen information on product packaging before preparing and serving food to guests (Food Allergy and Anaphylaxis Network, 2011). Our results showed, however, that some chefs were not even sure of how to read labels on bottles or packages (Pratten, 2003). Due to the dearth of knowledge amongst employees and managers, guest complaints are frequently solved by merely removing the offending item from the plate, rather than a new allergy-free dish. This can still result in an allergic reaction (Mandabach, 2005). It is therefore imperative that establishments have menus or other printed materials, offering choices suitable for people with food allergies or intolerances (Borchgrevink et al., 2009).

Because the number of sufferers is increasing, it is becoming more important for hospitality establishments to know how to safely serve guests with food allergies (Abbot, 2007). Establishments must at least have clear written guidelines and procedures and provide staff training, to increase knowledge about food allergies and the potential consequences and to guide and inform guests about the menu. Establishments must always be prepared for accidents which can occur at any time and have emergency plans in place, describing procedures to follow in the event of an allergic reaction (Food Allergy and Anaphylaxis Network, 2011). Management must ensure that these printed materials are accurate and up to date and that all staff receive training prior to serving guests with food allergies or intolerances.

Research has shown that employees who have not received training on food allergies are surprised by the

effects that these allergies can have on guests and shocked at the discovery that their actions can lead to serious allergic responses. This research shows that there is limited (or even no) knowledge of food allergies in the hospitality industry. At the same time, the establishments are horrified at the potential consequences of serving allergenic food to guests who have made diet-specific requests. This underlines how important it is that establishments are sufficiently knowledgeable on food allergies (Pratten, 2003).

The main factors in safely serving guests with food allergies are adequate knowledge, co-operation between departments (e.g. kitchen and restaurant), and teamwork. It is also important that every employee in an establishment is aware of the issues involved in handling food allergies correctly (Food Allergy and Anaphylaxis Network, 2011).

Methodology

Fifty hard-copy questionnaires were personally distributed to hospitality establishments (in order to get a direct response) located in Leeuwarden and its surroundings, consisting of 24 questions. The survey consisted of a range of questions to determine: the level of knowledge of restaurant managers of the types of food allergies and intolerances; opinions on various issues; and in what way restaurants were prepared to cope with the needs of guests with food allergies or intolerances.

This research was conducted by means of descriptive methods: a clear description is given of the underlying causes why restaurants are prepared or unprepared to meet special dietary requests from guests with food allergies or intolerances. Additionally, this type of research is suitable for showing any relationships amongst variables, which is useful because the outcomes are counted, measured and studied to detect any significant relations, differences or other aspects which are relevant for this study. The ultimate goal of this research is to determine the extent to which restaurants are prepared to respond to the needs of guests with food allergies or intolerances. Furthermore, the level of knowledge of restaurant managers and employees about food allergies and intolerances is measured. The amount of training provided to employees will be discussed, as will the procedures and measures which were taken (and/or which were under development) to minimise allergic reactions to restaurant food.

Before actually using the questionnaire which was developed, a pre-test was done in order to measure the effectiveness and possible weaknesses in the survey. Five questionnaires were distributed as pre-tests and were completed using the undeclared pre-test format. With this type of pre-test, the respondents are not informed that this survey is being used as a pre-test. The result of the pre-tests was positive; all respondents were able to answer the questions (due to a typing error, Question 12 was not answered and Question 10, which referred to Question 12, was immediately adjusted). The outcomes of the pre-test were useable for the actual analysis of the results.

The method used for collecting data was a quantitative questionnaire (see Appendix 1), which focussed on several variables and consisted of questions related to the objectives and research questions. The questionnaire was distributed to 65 randomly-chosen medium-sized establishments located in Leeuwarden and Dokkum. The restaurant sector in this area consists of bistros (roadside) and cafés (Bedrijfschap Horeca en Catering, 2011). The questionnaire was distributed in these types of restaurants registered as part of this specific sector. The processing of data was very time-consuming, since the questionnaires were hard copies and personally distributed, to generate direct responses and gain relatively high response rates, compared to online surveys. In addition, due to the fact that Borchgrevink's corresponding study had a response rate of 5,8%, this method of data collection prevents such a small percentage.

According to the sample-size calculator (Creative Research Systems, 2010), our sample size should have been 371. Due to practical reasons such as the number of people conducting the surveys and a limited time frame, the actual data-producing sample size is 50. This resulted in a less satisfactory and accurate result from the survey; the useable surveys numbered 50.

Collected data were analysed by computer software (IBM SPSS Statistics®), which includes descriptive statistics. The results of the questionnaire are provided on an ordinal scale and nominal measurements of scale. These are analysed by counting and percentages. Moreover, correlations and a t-test were conducted, whereby the results were described. The key type of data analysis was the survey, which sought to determine how knowledgeable restaurant managers are concerning food allergies and intolerances.

Results

The first item on the questionnaire was whether respondents had a menu or other printed document available which was suitable for people with food allergies or intolerances. About 88.1% ($n = 42$) of respondents did not have a dedicated menu available, while 11.9% reported that such a menu is used. The next question asked of those establishments with no such menu available was whether respondents had any intention of developing a menu suitable for guests with food allergies or intolerances. Eighty-one percent of respondents without a dedicated menu were unwilling to develop one. Three respondents (7.1%) indicated having plans to develop a dedicated menu to meet the dietary needs of guests with food allergies or intolerances. Additionally, three questions indicative of the agreement of the respondents on different issues were posed, the first question (or statement) being: 'if hospitality companies are unable to respond to the needs of the guests with a food allergy or intolerance, a law should be developed which describes how to handle such situations'. Eleven respondents totally disagreed with this statement and 17 disagreed, which results in a total of 56.0% of people who did not agree with this statement. Figure 1 shows a frequency table of the responses from respondents to this statement.

The second question was: 'Employees working in a hospitality company should know the ingredients of the dishes they are selling'. Forty-seven respondents (94%) did agree or totally agree with this statement. The next question was whether the employees working in the hospitality company knew what ingredients particular dishes contained. Thirty-nine surveyed companies agreed (56%) or totally agreed (22%) with this statement. The result of the correlation tests was that

there is a significant relationship between the second and third statement (χ^2 = 46.829; df = 12: $p < 0.001$).

To measure the preparedness of the companies, respondents were asked whether they kept a guest profile database. Five respondents (10%) indicated that such a database was in use, of which two companies kept information of the types of allergies and intolerances that guests had. This results in 4% of all surveyed companies.

The survey focussed on the type of training provided to employees, with regard to serving guests with food allergies or intolerances. Firstly, the surveyed hospitality companies were asked whether training was provided to employees in handling guests with food allergies or intolerances. Fifty-two percent (n = 50) did provide employees with special training, while 48% of the respondents did not. The result of the correlation test was that there is a non-significant relationship between the amount of training related to food allergies and intolerances provided by the hospitality companies and the question regarding the employees working in the hospitality company knowing what ingredients particular dishes contained (χ^2 = 6.097; df = 4: p = 0.192).

To gain a clearer understanding of the types of training provided at the surveyed companies, respondents were asked what type of training was provided to employees. Respondents could give multiple answers to this question: the most common training provided was how to serve guests with food allergies or intolerances (29%) and covered procedures for taking food orders from guests with food allergies or intolerances (29%). Besides that, 14 of the respondents (26%) provided employees with training in diet-specific food preparation methods for guests with food allergies or intolerances. Five respondents (9%) provided employee training on potential allergic reactions which may occur, and four respondents (7%) provided training in reacting to and handling guests who have an immediate allergic reaction. Figure 2 shows an overview of these results, presented in a circle diagram.

As coeliac disease is a common food intolerance, respondents were asked to indicate their level of knowledge of it on a scale from zero to 10. On average, respondents rated their knowledge with a 6.5, whereby the mode was a 7.0. The next question posed was whether the restaurants provided guests the option of having a gluten-free meal; forty-nine (98%) of the respondents did offer this option, while one (2%) did not. Besides that, the question was then posed whether the hospitality companies had a dedicated menu suitable for guests with a gluten intolerance. Fourteen (28%) respondents did have such a menu available and thirty-five (72%) did not. In order to detect any relation, a correlation test was done. There is a significant relationship between the question of having a dedicated menu or other printed document available for guests with food allergies or intolerances and the question of having a gluten-free menu (χ^2 = 7.206; df = 1: p = 0.007). Additionally, there is a non-significant relationship between the ability of restaurants to offer dishes without gluten and the availability of a gluten-free menu card in the restaurants (χ^2 = 0.397; df = 1: p = 0.529).

To measure the knowledge of the surveyed companies regarding ingredients unsuitable for guests with specific allergies, five questions were posed: 'firstly, do you know
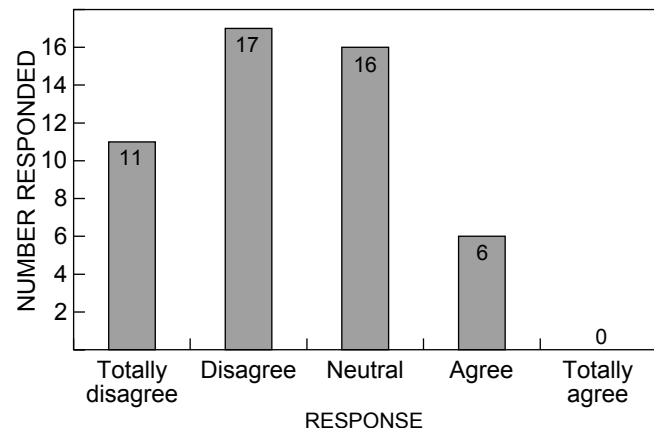

Figure 1: Responses to the statement that 'if hospitality companies are unable to respond to the needs of the guests with a food allergy or intolerance, a law should be developed which describes how to handle such situations'
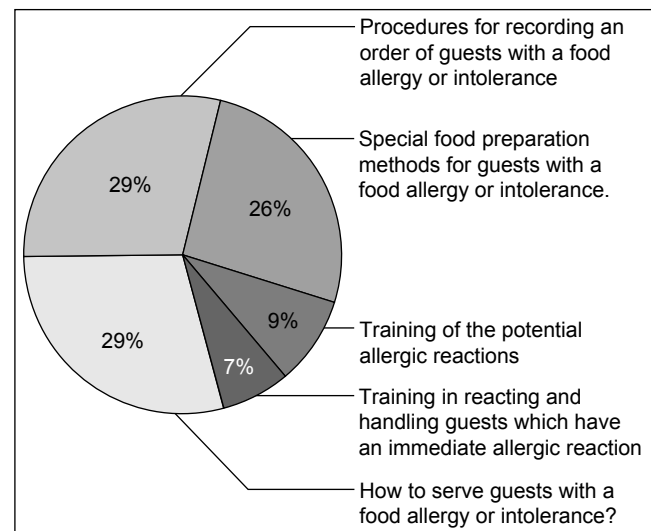

Figure 2: Percentages per the different types of employee training regarding serving guests with food allergies or intolerances

which ingredients affect people with a lactose allergy?'; 'secondly, does mayonnaise affect people with a chicken egg allergy?'; 'thirdly, does soy sauce affect people with a nut allergy?'; 'fourthly, does a soup with vermicelli affect people with coeliac disease?'; 'finally, does a dish with crème fraîche affect people with a lactose allergy?'. Seven of the 50 respondents provided correct answers to all the questions, which showed that 78% had one or more questions incorrect (further results can be seen in Figure 4). Respondents were asked if they could provide three examples of products unsuitable for guests with a lactose allergy; 66.7% of respondents who claimed adequate knowledge supported their answers with correct examples. This means that 33.3% of respondents who stated that they had sufficient knowledge had provided incorrect answers. The next question was whether respondents had been educated specifically for the hospitality industry.

Twenty-five (61.0%) of the respondents had followed a hospitality-related education and 16 (39.0%) respondents had not. Nine respondents refused to answer this question. To measure any relationships between product knowledge and the course of study followed, cross tabulations were done. Twenty-five respondents who had graduated with a hospitality degree scored better in Questions 16–20. Looking at the correlation, however, there is a non-significant difference in mean score on Questions 16–20 between people with or without hospitality education (t = 1.114; df = 47: p = 0.271). Figure 3 shows the percentages of the correct answers of respondents with and without a hospitality-related education.

Furthermore, respondents were asked whether they had followed a specific course or had a certificate related to food allergies or intolerances. Five of the respondents (10%) stated that they had a certificate or had followed a course related to food allergies and intolerances, while 44 (88%) respondents did not and one (2%) respondent did not answer this question. Looking for a correlation, there is a non-significant difference in mean score on Questions 16–20 between people with or without a course or certificate related to food allergies and intolerances (t = 0.027; df = 47: p = 0.979).

Moreover, respondents were asked whether they personally had a food allergy or intolerance. Seven of the respondents (14%) did have an allergy or intolerance. Forty-three (86%) did not have a food allergy, thus there is a non-significant difference in mean score on Questions 16–20 between people with or without a food allergy or intolerance themselves (t = 1.692; df = 48: p = 0.097).

The final question asked whether respondents had a family member with a food allergy or intolerance. Twenty-three of the respondents (46%) did and 27 (54%) did not. There is thus a non-significant difference in mean score on Questions 16–20 between people with or without family members or friends with food allergies or intolerances (t = –0.327; df = 48: p = 0.745).

Discussion

By analysing the results of this research, some significant results were discovered which help to answer the research questions. These results were then compared to the outcomes of the literature studied, which are now discussed.

The first research question referred to the restaurants' knowledge of ingredients and possible allergens in their food. To measure these outcomes, five questions were posed which included examples of products which were suitable (or not) for persons with specific allergies or intolerances. Respondents should have provided correct answers in order to have a sufficient knowledge of food allergies and intolerances. Surprisingly, the majority of respondents did answer the questions well but only seven of all respondents answered all five questions correctly. Moreover, the surveyed companies found it generally very important that employees should know the ingredients of dishes they sell. According to the literature studied, restaurants have limited knowledge of food allergies and intolerances and due to this lack of knowledge amongst employees and managers, frequently guest complaints are resolved merely by removing the
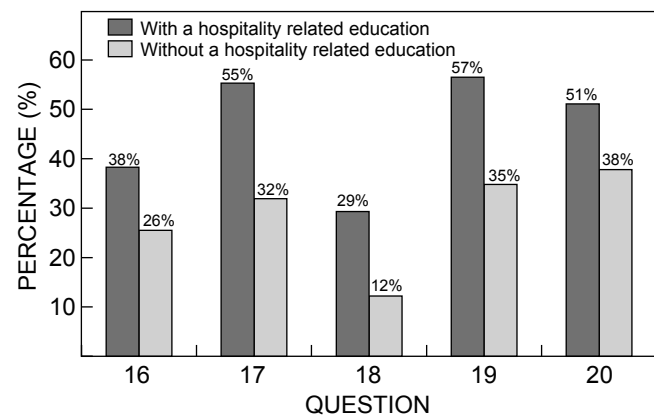

Figure 3: The percentage of correctly answered questions from respondents with or without a hospitality-related education
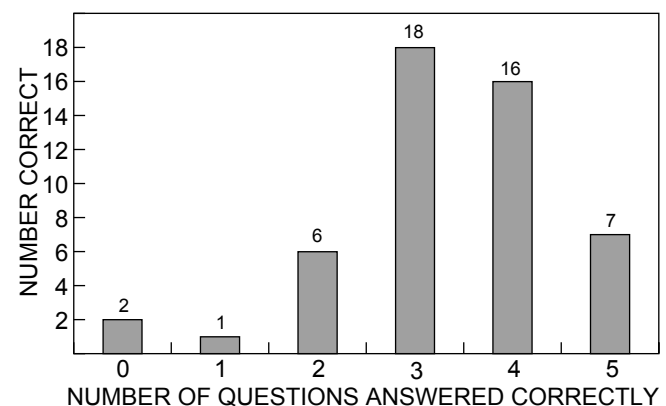

Figure 4: The number of respondents who answered the ingredients questions correctly

offending item from the plate rather than preparing another and allergy-free dish, which can still result in an allergic reaction (Mandabach, 2005).

The next research question refers to the level of knowledge in restaurants regarding the food intolerance, coeliac disease. Respondents were asked to grade their knowledge on a scale from 0 to 10. The average grading was 6.6, which refers to sufficient knowledge of this disease. A minority of the respondents (seven) stated that they had a dedicated menu for guests with coeliac disease; remarkably, 98% stated that it was possible for guests to eat gluten-free meals at their restaurant. It is therefore possible to have a gluten-free meal at the surveyed establishments, even though a dedicated menu is not available. According to the literature, the main reason for the limited number of correct answers and minimal knowledge is due to the lack of information and amount of training provided to restaurant employees and managers. Another important aspect is that managers and owners have generally never had the relevant training themselves and are therefore unable to transfer this knowledge to their employees (Mandabach, 2005).

The third research question related to the level of training provided to employees in the surveyed establishments companies, regarding food allergies and intolerances. This

research has shown that respondents did provide employee training related to food allergies and intolerances. The most common training provided dealt with how to serve guests with food allergies or intolerances and special procedures for taking food orders from guests with food allergies or intolerances. Additionally, training was provided in diet-specific preparation methods for guests with food allergies or intolerances. Only four respondents, however, provided training in reacting to and handling guests who have immediate allergic reactions, and this is the most important training as it could save lives. Other research has shown that managers state that employees should know how to handle situations where guests indicate their allergies, but none of the surveyed establishments had protocols or training available to cover procedures in such cases (Abbot, 2007). Although much employee training is done in the hospitality industry, little or none of it relates to food allergies (Pratten, 2003).

The main research question was: to what extent are restaurants prepared to respond to the needs of guests with food allergies and intolerances? Judging from the research we conducted, restaurants had limited knowledge of ingredients which may include allergens unsuitable for guest with specific allergies or intolerances. Many of the establishments, however, indicated that they had the ability to provide suitable food upon request to guests with food allergies or intolerances. The preparedness of the surveyed establishments was, however, low; many did not provide in advance a set menu for guests, and limited employee training had been provided. This, in combination with limited knowledge and insufficient awareness of the possible consequences of allergic reactions, makes it unsafe for vulnerable guests to eat in restaurants.

It was interesting, but not surprising to find that only 52% of respondents provided employee training on food allergies and intolerances. Almost all the establishments did however offer meals to guests with food allergies or intolerances when diet-specific requests were made. In addition, remarkably, the average levels of knowledge about coeliac disease amongst respondents was graded at 6.6 on a scale 0 to 10, while 98% did offer the option of eat gluten-free meals. These results cause concern: without training and knowledge of food allergies and intolerances, how can an employee guarantee that the served food is allergen-free? An allergic reaction can be very severe and this risk is often underestimated by personnel. From a guest's perspective, the information provided is sufficiently reliable enough and hospitality companies are thus themselves taking a high risk. Many restaurants did not agree with the view that a new law may be necessary regarding required procedures for handling guests with food allergies or intolerances. In our opinion, however, restaurants should show that they themselves are willing to undergo and implement training, to obviate legislative intervention.

One of the researchers, having coeliac disease herself, discovered first-hand the difficulty of eating out with a food intolerance. From her perspective, many establishments do not offer a suitable menu for guests with food intolerances. Restaurants take significant risks when serving gluten-free meals in the absence of adequate knowledge of the consequences of allergic reactions. In the researcher's opinion, the government should indeed intervene to ensure that restaurants do not take

such risks, which will result in preventing allergic reactions (or even death) in vulnerable guests.

In conducting this research, some limitations were encountered. The first research question was not specific enough, due to the fact that two different elements were described in one question. This research question was therefore adjusted and a new research question was developed. Additionally, fewer surveys were conducted than we anticipated; due to an outdated database of restaurants, some of the establishments no longer existed anymore. Fewer surveys were therefore conducted in Leeuwarden, and as a result a portion of the surveys were conducted in Dokkum. Moreover, collecting the surveys was more time-consuming than anticipated; a high response rate was, however, generated. Finally, the surveys did not provide respondents with the opportunity to give comments and suggestions, which could have provided more detailed information: this unfortunately did not arise as a result of the performed pre-test.

Conclusions

This study showed that the respondents had limited knowledge and awareness of food allergies and food intolerances. The majority of respondents did not have a dedicated menu available for guests with food allergies or intolerances. Additionally, respondents did not have a database available to record guest profiles, together with specific information such as food allergies and intolerances. It can therefore be concluded that the preparedness of the surveyed establishments is very limited and the inadequate employee training did not benefit the guest with specific dietary needs. This can definitely be improved, in order to create more awareness and knowledge of food allergies and intolerances amongst employees. Actual knowledge of allergens within ingredients was relatively low: respondents were generally unable to indicate which ingredients were suitable for guests with specific food allergies or intolerances. While results of this research varied amongst the different surveyed establishments, overall acquaintance with food allergies and intolerances was low. This could cause significant problems for the food service industry, and it is therefore of great importance that more information be provided to managers and employees in hospitality establishments.

Recommendations

The final research question included measures that could be taken by restaurants to ensure preparedness for diet-specific requests. The answers to this question include several recommendations for sound business practise. Firstly, managers should develop written procedures for handling guests with food allergies and intolerances, to be implemented by all staff. Such a manual should include issues such as: the individual responsible for checking ingredients used in dishes; steps to avoid cross-contact between particular ingredients; handling and verification of diet-specific orders; the identification of allergic reactions; and steps to be taken should an allergic reaction occur. Additionally, this training should be implemented. The manager should ensure that staff be properly trained prior to serving guests; moreover, training should be periodically

updated. It is important to remember that restaurants and guests with food allergies or intolerances are both working toward the same goal: preventing allergic reactions. Managers should therefore work closely with kitchen departments to ensure food safety and suitable menus (Food Allergy and Anaphylaxis Network, 2008).

We found that there was a non-significant difference between respondents who had completed a hospitality-related course of study and respondents who had not, regarding the provision of correctly- answered questions. It can therefore be concluded that respondents were not more knowledgeable about food allergies and intolerances if they had received an appropriate education, compared to those who had not. For students from the education International Hospitality Management, no information or study materials had been provided relating to food allergies and intolerances. The recommendation is therefore to provide the relevant information in study courses to increase knowledge levels and awareness of this serious issue.

As in the literature, employees were shocked at the consequences that an allergic reaction might have for guests. Restaurant managers and employees should be cogniscant of the risks taken when preparing dishes in the absence of adequate knowledge of food allergies and intolerances. Besides that, guests are sometimes unaware of the risks taken when eating out; they rely on the knowledge and expertise of the staff of a hospitality establishment. Guests should therefore be warned in advance by these establishments of possible risks taken by eating at a particular establishment.

Further research stemming from this study is planned: to do a replicate study with a larger number of respondents, which will provide more accurate results. Additional studies could focus more on previously-occurring allergic reactions in restaurants and what measures have since been taken to minimise the risk of a reoccurrence.

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Assessment practises in a teaching hotel

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The main goal of the current study was to gain a better understanding of assessment practises in a teaching hotel. Data were collected in three different ways: (1) a critical-incidents interview; (2) analysis of all assessments in the practise modules, and (3) an experiment on front-office operations. Interviews indicated both positive and negative aspects of the assessment methods applied. Analysis of the assessments database showed different outcomes for several modules. The experiment showed no significant impact of using a checklist. Further research is indicated, since it is ultimately the quality of the assessment which will determine whether a teaching hotel will be considered a true competence-development centre.

Keywords: competence development centre, rating errors

Introduction

Many hotel schools operate their own hotels, catering and meeting facilities; this enables their students to develop operational, supervisory and management skills and competence. Analogous to medical education, where students are trained in teaching hospitals, we refer to these facilities as teaching hotels. Their main objective is to enhance the hotel management skills and competence of students. In that respect, they could also be referred to as 'talent development' centres. Since most of these teaching hotels wish to operate like real hotels – serving real guests with real products and services, creating real sales and satisfaction – a balance has to be found between what might be identified as commercial and educational interests. Although an authentic context is a potentially strong asset or feature to facilitate learning, safeguards should be in place to have the guest experience become a true learning experience as well, and to prevent commercial interests from dominating and influencing education. That would mean that sufficient time and attention is spent on instruction, coaching, feedback and learning. Performance appraisal or assessment will play a crucial role in that process of competence development. Since assessment is generally regarded as one of the major drivers of performance in general (and study behaviour in particular), we decided to analyse the assessment policies and practises in a teaching hotel.

The current study was conducted in the context of an international hotel school, which runs its own hospitality teaching facilities, consisting of a 28-room four-star hotel, two restaurants (seating capacity 150), a kitchen, bar, cooking studio, function rooms, a company restaurant, student lounge and a meeting and events agency. The four-year programme is entirely constructed according to the principles of problem-based learning, structured in thematic interdisciplinary modules of 10 weeks each. Each year comprises four modules, except for the last year, which is entirely spent on a 10-month industrial placement (see Figure 1).

In the first, second and third years of the programme, there are modules in which students have to work in one of the school's own hospitality outlets, to develop practical and managerial skills and competence. In the first year, two modules (Food and Beverages (FB) and Rooms Division (RD)) are strongly linked to the teaching hotel. First-year students work at the operational level. In the second-year module

Year 1	**Module 1** Food and Beverages	**Module 2** Rooms Division	**Module 3** Resources	**Module 4** The Guest Experience
Year 2	**Module 1** Performing Daily Operations	**Module 2** Controlling and Evaluating	**Module 3** Planning	**Module 4** International Business Communication
Year 3	**Module 1** Strategic Hospitality Management	**Module 2** Hospitality Operations Management	**Module 3** (elective/minor)	**Module 4** (elective/minor)
Year 4	Internship/industrial placement			

Figure 1: Hotel school curriculum. Note that during each year of study, half of the students start with Modules 1 and 2 while the other half begin with Module 3 and 4. Furthermore, within each semester, half of the students start with Module 1 and the other half with Module 2

Performing Daily Operations (PDO), students work as middle-management supervisors in the various departments of the teaching hotel (see Table 1). In the third-year module Hospitality Operations Management (HOM), students spend half their time as departmental managers in the teaching hotel.

Assessment in the teaching hotel

The performance of the students in the teaching hotel is assessed on, respectively, four (Year 1), six (Year 2) and 10 (Year 3) skills (see Table 2), by a combination of assessments by guests, peers, subordinates, supervisors and practical instructors. Their scores are recorded on evaluation cards, and translated into a grade which determines final score and credit points. Each day, supervisors or managers evaluate students and write the evaluation onto evaluation cards. At the end of the week, students get a complete evaluation, with which they can earn points. With these points, students either pass or fail their modules.

Within each department, points have to be allocated. After each day first-year students have worked in the department, feedback must be given by the second-year supervisor. These supervisors, in turn, receive feedback from third-year managers, which is recorded. Besides the assessment of skills, there should be a 'tip' and a 'top' given: students should be informed of

how they can improve and what they did very well. Feedback must be constructive; students should know what they should improve and how to achieve that. Each day, students can check AQ: their feedback.

At the end of the week, the total feedback for that week is evaluated. Did the student improve? Or did performance decline? Based on this analysis, points should be assigned. For both first- and second-year students, there are 24 points to be earned per week. When the points of that week are given to students, a meeting should be held with them; they should receive an explanation regarding the points given and they have an opportunity to ask questions. The opportunity to talk about improvements or changes occurs in the short briefing regarding the whole week. Third-year managers discuss, on a weekly basis, their feedback cards with their practical instructors. In the first and second years, the score for practise is determined by the practical instructor. In the third year, the score is a weighted average of the score assigned by the practical instructor (70%) and the simulated board of directors (30%).

Competence assessment and development

Surveying the literature about assessment shows clearly that there is not one generally consensual definition. Bloemers (2001) defines assessment as the way we map several

Table 1: Number of positions in the different departments of the teaching hotel. (FB: Food and Beverages module; RD: Rooms Division module)

Departments	First-year students	Second-year students	Third-year students	Practical instructors (assessors)
Kitchen	16 (FB)	12	8	4
Restaurant	16 (FB)	15	8	4
Housekeeping	12 (RD)	11	4	2
Front Office	8 (RD)	10	6	3
IF restaurant	7 (RD)	2	4	1
Canteen	18 (RD)	9	7	4
Student lounge	3 (RD)	2	2	1
Human Resources Management	–	2	4	1
Sales and Marketing	–	1	4	1
Materials	–	3	2	1
Front Desk	2 (RD)	4	4	1
Total	82	71	53	23

Note: The teaching hotel operates with two shifts per day. First-years rotate within several departments (in FB: Kitchen and Restaurant; in RD: Front Office, Housekeeping and Facilities). Second-years work in different departments in the first and second half of the PDO module. Third-year students in the HOM module are assigned as department managers for either the even or odd weeks

Table 2: Skills and competence assessed in Years 1–3

Year 1 Five-point scale per skill	Year 2 Five-point scale from 0 (poor) to 4 (excellent) per skill	Year 3 Each skill graded on a 10-point scale
1. Punctuality and preparation	1. Planning and organising	1. Planning and organising
2. Effort and motivation	2. Customer service orientation	2. Service orientation
3. Co-operation, hospitality and social skills	3. Human resources (people- oriented)	3. Co-operation
4. Feedback and personal development	4. Communication	4. Communication
	5. Leading (task-oriented)	5. Leadership
	6. Controlling	6. Entrepreneurship
		7. Problem-solving
		8. Information processing
		9. Moral judgement
		10. Intercultural sensitivity

personal characteristics, particularly a person's knowledge, skills, abilities and other charateristics (KSAOs). Van Berkel and Bax (2002) gives another definition: assessment is every instrument a particular educational institute uses within the decision-making process about the knowledge and capabilities of students. According to Docky and Nickmans (2005), assessment is used to judge the complete behaviour of a person or student. It is not only the measurement of knowledge but the interaction between knowledge, attitudes and skills of the person in question. He also lists some criteria assessment needs to fulfill. There are three main criteria for assessment: the first is that the student should construct actual knowledge instead of merely functioning through repetition. When students can merely recall a theory from a book but cannot implement it, there is no assessment involved. The second criterion is that students should be assessed on theory and practical aspects. Students should be familiar with various theories and be able to implement these in practise. The last criterion is that assessment should be embedded in or simulate actual situations (Docky and Nickmans, 2005).

In the 20th century, testing and assessment became widely used in industry and education. People started testing potential employees to establish whether they were capable of doing the relevant work. Employers started to test people using actual situations and tasks to evaluate them. The German army, for example, began to test people with real-life situations and cases to assess whether these persons were capable of fulfilling the rank of a general in the army. This approach was called 'the assessment center' (Docky and Nickmans, 2005).

Assessment for learning
Some of the key characteristics of problem-based learning as a conception of education are: student-centred, contextualised, co-operative, contructive, self-directed and competence-based. This is reflected in a competence-based approach to assessment in the teaching hotel as well. According to Boot and Tillema (2001), this form of assessment is aimed at developing students. Although points are involved, the development of students is seen as more important. According to Boot and Tillema (2001), students need to demonstrate the relevant behaviour and show how they are developing. Supervisors or managers can provide constructive feedback and students develop their skills and receive a score expressed in points at the end of each week.

According to Spencer and Spencer (1993), competency is 'an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation'. The assessment of competence is the quintessence of what is generally referred to as assessment and development centres (ADC). An ADC is a setting in which group and individual exercises, tests and simulations are used to measure the qualities and skills of an employee (Thornton and Rupp, 2006).

Rating errors
In observing and rating other peoples' behaviour, no matter if it concerns the performance of employees or students, errors and bias can occur. These errors are divided into two different categories: general errors and assessor-specific errors (Roe, 1994). General errors are divided into three groups:

distribution, relation and stability errors. The major distribution errors are: assessors are too positive in their ratings (leniency error) or too negative (strictness); all scores are approximately at the midpoint of the scale (central tendency); assigning more positive than negative scores (ratio error). The relation errors are: the halo error (a positive aspect reflecting positively on other unrelated aspects); and the logical error (being guided by the idea that some things logically belong together). The two stability errors are: pseudo-stability and pseudo-instability, either assuming that skills have not improved when they have, or have improved when they have not. Assessor-specific errors are the 'personal idiosyncrasies' (specific rating habits of the assessor, never assigning a 10, for example) and the 'role error', a bias caused by the mutual positions of the assessor and assessee (manager versus subordinate).

Problem statement and research questions
This study was aimed at description, analysis and evaluation of the assessment practises in the teaching hotel of an international hotel school. In order to provide the description, analysis and evaluation, several research questions were formulated:
• what are the differences and similarities in assessment practises between the different departments?
• what grading criteria are being applied?
• what steps are taken in the process of assessment?
• what do students think of the assessment in the teaching hotel?
• is the quality of assessment systematically and structurally measured and monitored?
• to what extent are assessors inclined to make rating errors?

Method

For this study, data were collected in three different ways: using a qualitative approach, a quantitative approach and a small experiment.

The first instrument employed was a personal interview with people who had performed or were performing practise in the teaching hotel. The interview contained the following five open questions:
1. 'Did you ever experience something good or bad during the assessment, within practise?'
2. 'When did it happen?'
3. 'In which department did it happen?'
4. 'Which persons were involved?'
5. 'Do you want to change something about the assessment within practise and, if yes, what would that be?'

The second part of data collection was done by collecting all the assessments done in the teaching hotel during the first module period of the academic year 2007–2008. The data collected showed all points for the first-, second- and third-year students for each of the four practise modules (FB, RD, PDO and HOM) and for all departments. The data were processed in Microsoft Excel and IBM SPSS Statistics® to compare scores between departments for each of the four modules.

The last method of data collection consisted of a small experiment regarding Front Office operations. Three video clips were made of a first-year student showing a poor,

average or excellent performance of the check-in procedure at the Front Office. Subjects were subsequently asked to rate the performance, either with or without a structured checklist.

Results

Critical-incident interviews
Interviews consisted of five open questions. In total, 10 people shared their opinions with us. It transpired that seven people answered predominantly negatively on the questions, and three persons answered positively. The comments and observations of the students, both negative and positive, are summarised as follows. Positive comments were: students stated that one of the most important aspects within the assessment procedure is communication (one person said he found it really pleasing that in his department, points were discussed at the end of the week. If the person receiving the points disagreed with them, this too was open to discussion). Furthermore, the subjects made clear that they deem it important that they are assessed by the person who has worked with them most closely; the assessor could then observe what had been accomplished by the student and what skills they demonstrated.

A consideration of the negative experiences showed that a major issue was feedback, in combination with the number of points. Three persons indicated that although their feedback had been good for the whole week, at the end of the week they had received a low number of points. Another element of frustration was the fact that the students received points from people with whom they had never worked. The last point mentioned related to nepotism and favouritism; people who know each other tend to give the other person more points than they would to someone they don't know very well.

Assessment scores in practise
Within this section, the results of the analyses on the assessment scores from all practise modules will be reported. Each student working in the teaching hotel receives points for their performance in practise. These points are used for formative (feedback) and summative (pass or fail) purposes. The points allocated to all students in all practise modules were analysed: all assessment scores for the first-year FB and RD modules, for the second-year PDO module and for the third-year HOM module. Data were collected for module period 1 of the academic year 2007–2008. The number of students involved is listed in Table 3.

Food and Beverage department
In 2007, the maximum score for students in the kitchen or restaurant of the teaching hotel was 16 points. As shown in Table 4, the mean score earned by students in the restaurant (M = 11.86) is higher than the mean score obtained in the kitchen (M = 11.19). Since the confidence intervals did not overlap, this difference was statistically significant ($p < 0.05$).

Rooms Division
In the second module (RD) within the first year in which students perform practice, students perform practise in three departments: Front Office; Housekeeping; and Facilities. The maximum score at the Front Office, Housekeeping and Facilities departments is set at 24 points. As shown in Table

Table 3: Breakdown of students assessed in the teaching hotel in module period 1 of 2007–2008

Module	Year	Students
Food and Beverages	1	84
Rooms Division	1	99
Performing Daily Operations	2	103
Hospitality Operations Management	3	70

Table 4: Descriptive statistics for scores in the Food and Beverages module, by department (n = 84)

Department	Min.	Max.	Mean	SD	95% CI
Kitchen	8	14	11.19	1.14	10.95–11.44
Restaurant	8	15	11.86	1.45	11.54–12.17

Table 5: Descriptive statistics for scores in the Rooms Division module, by department (n = 99)

Department	Min.	Max.	Mean	SE	SD
Front Office	11	24	18.18	0.26	2.56
Housekeeping	14	22	18.98	0.21	2.05
Facilities	11	23	18.07	0.27	2.65

5, the mean score in Housekeeping (M = 18.98) is significantly higher than in either Front Office (M = 18.18) or Facilities (M = 18.07). The scores in Front Office and Facilities did not significantly differ from one other.

The Performing Daily Operations module
When considering the result from the PDO module in Table 6, some differences can be observed. The maximum score for all departments is 24 points. In the PDO module, the mean score per department differed significantly (F = 4.877; df = 7.95; $p < 0.001$). The highest mean score was for the Facilities department (M = 20.18) while the Kitchen department scored lowest (M = 17.3). The other departments had mean scores of between 18.25 (Housekeeping) and 18.59 (Restaurant).

Hospitality Operations Management module
In the third year, the students performing practise as departmental managers. This means that most of the time, there are only one or two students in the department. The departments are therefore placed into categories, which can be seen in Table 7. The scores are based on the score the student receives from the 'board' and the points the student gets from his or her practical instructor. The maximum is 160 points.

When looking at Table 7, the lowest mean score was obtained by the Catering and Facility (CF) department (M = 112) while the highest mean score was earned by RD (M = 117.53). The differences in mean scores between departments is not significant (F = 0.611; df = 4.65; p = 0.656).

Front Office experiment
Three video clips were produced regarding the check-in procedure at the Front Office: one showing a poor performance; one an average performance; and one an excellent performance. Each of the three clips was rated either with or

Table 6: Descriptive statistics for scores in the Performing Daily Operations module, by department (n = 103)

Department	n	Mean	SD	SE	95% CI for mean	Min.	Max.
Front Office	15	18.50	1.96	0.51	17.42–19.58	15.50	21.00
Materials	4	18.50	0.58	0.29	17.58–19.42	18.00	19.00
Housekeeping	16	18.25	2.17	0.54	17.09–19.41	13.50	20.50
Kitchen	20	17.30	1.35	0.30	16.67–17.93	14.50	19.50
Restaurant	22	18.59	1.13	0.24	18.09–19.09	16.50	21.00
Facilities	19	20.18	1.03	0.24	19.69–20.68	18.00	21.50
Front Desk	5	18.40	1.78	0.79	16.19–20.61	16.00	20.00
Total	103	18.51	1.89	0.19	18.14–18.87	11.00	21.50

The major differences occured between Facilities and Housekeeping (p = 0.028) and between Facilities and Kitchen (p < 0.001).

Table 7: Descriptive statistics for scores in the Hospitality Operations Management module, by department (n = 70)

Department	n	Mean	SD	SE	95% CI for mean	Min.	Max.
Rooms Division	15	117.53	7.51	1.94	113.37–121.69	103	131
Staff	14	117.21	16.83	4.49	107.49–126.93	72	138
Catering and Facility	15	112.00	7.95	2.05	107.59–116.40	97	124
Food and Beverage	20	115.35	10.30	2.30	110.53–120.17	92	130
Meeting-U	6	117.17	11.69	4.77	104.90–129.43	100	131
Total	70	115.63	11.01	1.32	113.00–118.25	72	138

without a checklist. In Table 8, the results of the experiment are listed, in which 13 people participated. The participants rated the videos on a scale from 1 (poor) to 10 (excellent).

There is no significant difference in mean rating of the videos if rated with or without a checklist (t = –0.187; df = 76; p = 0.852).

Table 9 shows an analysis of whether people had scored higher or lower with or without a checklist. For Video 1, most people (eight) assessed the video in the same way, although four scored the video higher when they assessed it with a checklist. Only one person gave a lower score. When viewing Video 2, most of the students gave it the same score the second time, although some gave a lower score (three people) and some a higher score (two people). With regard to Video 3, there were no students who gave a lower score when using the checklist. It was interesting that the minority of students gave the same score, and the majority (eight) a higher score. This means that the checklist had no negative influence on students who performed the check-in procedure very well.

Table 8: Performance ratings for the three videos, rated with or without a checklist

	Video 1 (poor)	Video 2 (average)	Video 3 (excellent)	
Without checklist	M = 3.31 SD = 1.38	M = 5.85 SD = 0.99	M = 7.46 SD = 1.85	5.54 2.23
With checklist	M = 3.00 SD = 1.29	M = 5.77 SD = 1.17	M = 8.15 SD = 1.95	5.64 2.54

Table 9: Changes to video ratings before and after access to a rating checklist

	Video 1 (poor)	Video 2 (average)	Video 3 (excellent)
Lower	1	3	0
Same	8	8	5
Higher	4	2	8

Discussion

When reflecting on the outcomes of the study, we can conclude the following:
What did students think of assessment in the teaching hotel?
The critical-incident interviews showed inconclusive results. Some aspects of assessment were rated positively, while others had room for improvement. Grades should be awarded by assessors who: can base their judgements on a sufficient number of direct observations; whose scores are consistent with their feedback; can explain the rationale for their scores. For a complete picture of student opinions of assessment in the teaching hotel, a separate study should be conducted, in which qualitative approaches like panel interviews are combined with a comprehensive survey amongst a substantial sample of students.

What steps are taken in the process of assessment and what grading criteria are applied?
Students were assessed on a cumulative set of competences, covering knowledge, skills and affective domains. In all modules, students receive formative feedback to enable them to improve their performances. Further research is needed to investigate the extent to which these competences are equally applicable to every department. Another issue for further investigation is the link between the competences tested in the teaching hotel and the competences as required by the industry and as shared with other hotel schools. The results of the experiment performed at the Front Desk showed that the checklist for the check-in procedure supports the quality of the assessment protocol and could be implemented for the assessment of students at the Front Office as well.

What are the differences and similarities in assessment practises between the different departments?
The results of the analyses of assessment scores in the different departments showed mixed results.In the FB module, there was a significant difference in the mean score earned by students in the restaurant (*M* = 11.86) and those in the kitchen (*M* = 11.19). In the other first-year module (RD), the mean scores obtained in housekeeping (*M* = 18.98) were significantly higher than in either the Front Office (*M* = 18.18) or Facilities (*M* = 18.07). The scores in Front Office and Facilities did not significantly differ from each other. In the second-year module PDO, the mean score per department differed significantly as well. The highest mean score was for the Facilities department (*M* = 20.18) while the Kitchen Department scored lowest (*M* = 17.3). The major differences occured between Facilities and Housekeeping, and between Facilities and Kitchen. In the third-year module, there were no significant differences in mean scores between departments.
To what extent are assessors inclined to make rating errors?
We were unable to test for particular rating errors because the data sets did not contain information about the identity of assessors. Considering the relevance of the issue, we would recommend including information about the assessors as well.
Is the quality of assessment systematically and structurally measured and monitored?
Although all assessment scores were carefully recorded, we could not locate any output of psychometrical analyses on reliability or validity of the instruments used. We strongly recommend structural and systematic monitoring of the quality of assessment policies and practises by tracking indices such as: reliability; inter-rater agreement; content-; predictive-; and construct validity.

Recommendations

Some recommendations are listed for future research and the practise of assessment in a teaching hotel:
• the general focus should be to promote assessment for learning;
• assessment should contribute to the process of competence development of students;
• assessment should not be separated from but integrated into the educational process;
• it might help to consider the teaching hotel as an ADC;
• this would imply adherence to the guidelines and standards for ADC operations;

• student behaviour and output are the basic input for performance appraisal;
• behavioural observations (critical incidents) should be systematically and structurally recorded;
• if a distinction is made between formative assessment (feedback) and summative assessment (grading), this should be clearly communicated to the participants;
• there should be a clear rationale for the way scores are collected, weighted and combined, reported, stored and used in educational decision-making;
• the quality (reliability, validity) of the assessment should be regularly measured and monitored;
• if standardisation and number of observations are hard to manage, due to heterogeneity in demand and operations, additional standardised assessments could be added;
• performance feedback should be provided speedily in a positive and constructive manner, with a focus on behaviour;
• a multi-method, multi-occasion approach (self, peers, supervisors, subordinates, guests) could increase the quality of assessment, assuming that the assessors and indicators used provide valid and reliable judgements;
• a realistic budget regarding time, money and other necessary resources should be allocated to assessment, training and business performance.
Further research is indicated, since it is ultimately the quality of the assessment which will determine whether a teaching hotel will be considered a true competence development centre.

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Reading the guest by means of facial expressions

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'Reading the guest' refers to the ability to detect and interpret the body language and facial expressions of a guest. A battery of tests was developed to test whether it is possible to accurately read and assess the needs and wants of a guest. The test battery consisted of five sub-tests related to reading the guest. This paper reports on the sub-test that focussed on recognising and interpreting facial expressions. Results showed that students correctly identified approximately 50% of the pictures and that the facial expressions test significantly correlates with three of the other sub-tests. Although the instrument looks promising in some respects, there is room for substantial improvement.

Keywords: guest satisfaction, non-verbal communication

Introduction

Within the hospitality industry, understanding and meeting guest expectations is the most important issue. Needs and wants will be expressed in words, but to a larger degree are expressed by means of non-verbal communication. The ability to detect and interpret non-verbal signs expressed in body language and facial expressions has been conceptualised as the art of 'reading the guest'. Surprisingly, a Google search for the ability to 'read the guest' provided no results. Substantial research on non-verbal communication has been done in various areas, from illusionists reading the minds of the audience (Havener, 2009) to legal settings where criminals have been subjected to lie-detection testing (Ekman, 2009). Research in hospitality settings seems, however, to be lacking.

The current study focusses primarily on the expression of seven different emotions which turned out to be equally expressed, recognised and interpreted by people from many different cultures (Ekman, 2003); the universally-expressed emotions are: anger; disgust; fear; happiness; sadness; surprise; and contempt. Ekman (2003) discovered during his global travels that the seven emotions are similarly expressed and interpreted by people all over the world. He began by focussing on six expressions in his research, later adding contempt.

Non-verbal communication

Reading the guest is all about non-verbal communication, thus reading what the guest is saying with body language like gestures, facial expressions, clothing and posture, all of which enable people to communicate without words (Bovée, 2000). It is generally found that non-verbal communication is much harder to control than verbal communication; what people are expressing non-verbally more accurately reflects how they really feel, so if a host is skilled at reading those expressions, s/he will be able to improve service to the guest. One aspect of body language are facial expressions.

Universal expression of emotions

The first to begin investigating facial expressions was Charles Darwin who claimed that facial expressions of emotion are universal and that these are biologically determined. Ekman and Friesen (2003) list six universal expressions: anger; disgust; fear; happiness; sadness; and surprise. In the same year, Ekman (2003) identified seven universal expressions: anger; disgust; fear; happiness; sadness; surprise; and contempt. In several countries on different continents, he showed citizens pictures of each of the seven emotional expressions; each time the expression shown in the picture was assessed similarly, even in cultures with limited media exposure. This led him to conclude that the expression of these seven emotions is universal and applies to every culture.

Using facial expressions as an indicator for the emotions of a subject is studied within the fields of criminology, psychology, marketing and entertainment. The manner in which criminals respond to questions and their behaviour during interrogation can be 'read' by police. An excellent car salesman can 'read' his customer and senses when the deal is ready to be closed. A professional mind-reader notices minor body signals and facial expressions of their subject.

Facial expressions and micro-expressions

The face has 34 muscles involved in the expression of emotions, each of which has some distinguishing characteristics. For example, some characteristics of anger are lowered and contracted eyebrows, glaring eyes and narrowed lips. A special category of facial expressions are the micro-expressions, which occur in 1/15th to 1/25th of a second.

Research question

How well can students identify the facial expressions of the seven universal emotions, and is there a relation between the ability to identify facial expressions and other aspects of reading the guest?

Method

Twenty pictures were shown to the subjects, each depicting facial expressions representing one of the seven universal emotions. Firstly, one picture was shown, to familiarise participants with the test format. Besides the Facial Expressions Test (FET), participants also completed four other tests: the Micro-expression Test (MET); the Body Language Test (BLT); the Situational Analysis Test (SAT); and the Interaction Analysis Test (IAT). Scores on the FET were linked to the scores on the other instruments to determine the relationship between the different aspects of competence in 'reading the guest'.

Research design
The data for this descriptive study were collected by administering a battery of tests to a sample of 150 hotel school students. In the sub-test on facial expressions, participants were asked to assess 20 pictures expressing one of the universal emotions and to select an answer from a list of seven possible answers. For every correct answer, they received a point.

Sampling
The sampling frame used for this study was all the students enrolled in the International Hospitality Management programme. Students from all years of study were included.

The targetted sample size was 150 students, who received free access to a guest lecture in return for participating in the study.

Instrument
The students were asked to assess 20 pictures, which were presented on a large screen in a Power Point presentation. All pictures were presented for seven seconds, after which the next picture appeared automatically. Each picture showed a face expressing one of the seven universal emotions. The seven-second time frame was implemented to simulate a realistic situation. In an actual situation, the host will not have a long period to read a guest's face. There was a multiple choice answer sheet, where each emotion was represented. In total, 20 pictures were presented to the students, excluding one picture used to familiarize subjects with the test. The pictures had been taken with a professional camera in full colour against a white background. Models – both male and female – were used to express the emotions, all aged 19–21. Faigin's (1990) guide was used to help the models understand the different facial expressions, and also helped explain the characteristics of a facial expression; surprise, for example, is mainly characterised by raised eyebrows, widened eyes and an open mouth.

Data analysis
Two aspects were measured. The main goal for this study was measuring competence in reading facial expressions. The second aspect was the relation between reading the seven universal facial expressions and the other sub-tests of the Reading the Guest test battery. Each student was asked to indicate their gender, age, nationality, year of study and working experience in the hospitality industry. This was done to enable testing for differences between year of study, age, gender and working experience.
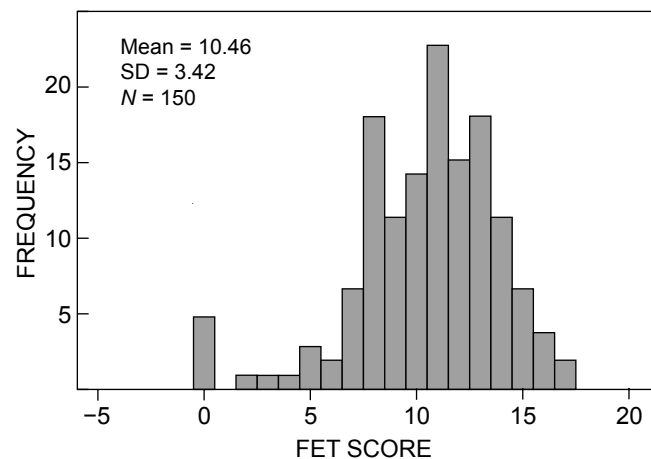

Figure 1: Score distribution on the Facial Expressions Test administered to hotel school students

Results

All 150 participants completed the FET. The mean score was 10.46, with a standard deviation of 3.42. The highest score was 17, while the lowest score was 0. The score distribution is shown in Figure 1.

Reliability
Cronbach's alpha for the FET was 0.032. This figure is too low to consider the FET in its current format as a reliable instrument for measuring competence in identifying facial expressions.

Item analysis
This section focusses on the individual pictures, each of which was analysed and assessed in terms of which pictures were more difficult to classify and which easier.

As can be seen in Table 1, most participants assessed Picture 19 correctly; 135 out of the 150 connected this picture with the expression of happiness, which was the correct answer. Only nine of the 150 participants made the correct connection with Picture 5 (considered to be the most difficult one). As the test consisted of 20 pictures covering seven emotions, not every emotion was equally represented in the set of pictures, for example, happiness is used four times and fear twice. If happiness had been easier to assess, this could have impacted both the validity and reliability of the instrument.

Correlation with other sub-tests
The FET tested whether the participants were able to identify seven facial expressions. The FET is part of a battery of tests covering several aspects of reading the guest: FET; MET; BLT; SAT; IAT (see Method section above).

The FET showed significant correlation to some of the other sub-tests. There was a significant correlation between the FET and the MET ($r = 0.308$; $p < 0.001$); participants who scored high on the FET also scored high on the MET. The FET was also significantly correlated with the BLT ($r = 0.340$; $p < 0.001$). There was also a significant correlation between the FET and the SAT ($r = 0.255$; $p = 0.002$). The significant correlation between

Table 1: Item analyses in terms of difficulty of the pictures

Picture No.	Number of participants assessing the picture correctly	Emotions expressed in the picture
1	97	Happiness
2	106	Disgust
3	25	Sadness
4	125	Happiness
5	9	Contempt
6	79	Anger
7	35	Fear
8	72	Surprise
9	87	Happiness
10	48	Surprise
11	64	Disgust
12	61	Contempt
13	31	Contempt
14	112	Anger
15	48	Disgust
16	74	Fear
17	64	Sadness
18	107	Surprise
19	135	Happiness
20	128	Anger

the FET and the SAT could be due to overlap in content between the two sub-tests. No significant correlation was present between the FET and the IAT ($r = 0.118$; $p = 0.151$).

Discussion

The problem statement for this study was: how well can students identify the facial expressions of the seven universal emotions, and is there a relation between competence in identifying facial expressions and other aspects of 'reading the guest'?

The overall performance of students on the FET generated a mean score of 10.4, with a range from as low as 0 to a maximum of 17. Without reference groups, it is very difficult to interpret these scores. If the FET was administered to other samples of students and/or professionals, a conclusion could be drawn on the relative position of a mean score of 10.4.

Considering the correlation between the FET and the other four sub-tests, it can be concluded that all sub-tests except one correlate to the FET. This means that subjects who scored high on the FET also scored high on the BLT, the SAT and the MET.

Although the instrument looks promising in some respects, there is room for improvement in the composition of the test, the pictures used and the reliability coefficient. A recommendation is to use a wider variety of models for the pictures in terms of nationalities and ages, and to include a larger set of pictures with an equal representation of each of the seven emotions. Additionally, more research is needed to investigate whether these seven facial expressions are the only universal facial expressions, or whether there may be more.

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