Perceived Meeting Effectiveness: The Role of Design Characteristics

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Abstract

Purpose The aim of this investigation was to test hypotheses about meeting design characteristics (punctuality, chairperson, etc.) in relation to attendees' perceptions of meeting effectiveness.

Design/Methodology/Approach Two studies were conducted: Study 1 investigated meetings attended in a typical week ($N = 958$), whereas Study 2 examined the last meeting attended on a particular day ($N = 292$).

Findings A number of design characteristics (in particular agenda use and quality of facilities) were found to be important in predicting perceived effectiveness. Attendee involvement served as a key mediator variable in the observed relationships. Neither meeting type nor size was found to affect the relationships of the design characteristics and involvement with effectiveness. Meeting size, however, was negatively related to attendee involvement.

Implications The findings help us to better understand relationships between design characteristics and attendees' perceptions of meeting effectiveness. Meeting organizers can use the findings to guide administration of meetings, with potential to enhance the quality of meetings.

Originality/Value Meetings are a common organizational activity but are rarely the focus of empirical research. The use of two complementary studies, to our knowledge, provides a unique account of the contribution of design characteristics to perceptions of meeting effectiveness.

Keywords Meeting effectiveness ·
Design characteristics · Attendee involvement

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Introduction

Much time and energy is devoted to work meetings (e.g., Volkema and Niederman 1995, p. 3), aiming to accomplish goals such as information sharing, decision making, and problem solving. Everyday experience makes it clear that, although some meetings are effective, many others are not; indeed, meetings are often viewed as "notorious time wasters" (Sisco 1993, p. 63). Individuals' views about meeting effectiveness are manifestly important within organizations, as they have the potential to affect attendance at meetings, behavior in meetings, and the ability of meetings to achieve their goals (cf. Bennett 1998). Such perceptions may also feed into overall job attitudes and well-being and affect longer-term decisions such as an individual's intention to leave his/her job (Rogelberg et al. 2006).

Work meetings can be characterized in a number of ways, such as the presence or absence of an agenda, did the meeting start on time, and was there a chairperson. These 'design' characteristics are typically under the control of the person

who calls or organizes meetings. Recommendations about them are common in literature for practitioners, usually being based on an author's personal experiences, but they have been rarely studied in academic terms. In this paper, we examine the contribution of principal design characteristics to employees' perceptions of meeting effectiveness. In Study 1, we report patterns observed in connection with meetings attended in a typical week. Study 2 permits a more detailed analysis of a sub-set of key characteristics, and focuses on the last meeting attended on a particular day.

Given the overall costs of poor meetings (e.g., collective salary costs and wasted time), the practical importance of understanding ways to promote meeting effectiveness is obvious. From an academic and theoretical perspective, despite their common use, there is a dearth of empirical research. Schwartzman (1986) pointed out that meetings have been used as a methodological tool to study other topics such as small group decision-making, but rarely studied empirically in their own right; the meeting is a "neglected social form in organizational studies." Twenty years later the same concern was echoed by Rogelberg et al. (2006). This paper reports research evidence about meeting design characteristics with two purposes: to provide an empirical foundation on which additional research and theoretical work can build, and to yield practical implications for those responsible for calling, organizing, and leading meetings.

Study 1

Following a review of both the trade and academic literatures on meetings, five principal design characteristics that warrant further examination were identified: using an agenda, keeping minutes, punctuality (starting and ending on time), having appropriate meeting facilities, and having a chairperson. Each of these is discussed next.

Using an Agenda

A prominent design characteristic concerns the meeting agenda (e.g., Kieffer 1988; Tropman 1996; Volkema and Niederman 1995). Spencer and Pruss (1992) suggest that a meeting agenda has three key aims. The first is to relay information concerning the location, date, and time of the forthcoming meeting. The second aim is to pre-notify attendees of the topics to be discussed. In an account for practitioners Spencer and Pruss (1992) comment that "This is of paramount importance, since members will be able to prepare their own input to the meeting in advance which will greatly speed up the meeting, make contributions more relevant, keep people to the timetable and generally focus the meeting more directly on the points to be dealt with" (pp 183–184). The third aim of the agenda is to state the order in

which the topics are to be discussed and (in some cases) how much time is allotted for each item on the agenda.

Keeping Minutes

The act of recording discussions has the potential to be beneficial in several ways, such as clarifying decisions, plans, and assignments (e.g., a collective account of the meeting's viewpoint or separate comments by different people). It is often suggested that records of this kind will increase the likelihood that attendees will honour agreements made during the meeting (e.g., Tropman 1996). Minutes can also communicate to attendees that what is occurring during the meeting session is indeed noteworthy, thereby potentially increasing meaningful attendee involvement.

Punctuality—Starting and Ending on Time

Starting a meeting when it is scheduled to start prevents the wasting of time, and might encourage future punctuality (LaForce 2004). Stated differently, waiting for latecomers serves to encourage future lateness behavior as no apparent penalty is incurred. Ending a meeting at a pre-scheduled time has also been advocated in the meeting literature. Promptness of both kinds enables attendees to reliably schedule meetings around their personal work tasks, thereby reducing the disruptive effects of meetings. Should some issues remain undiscussed, Tropman (1996) suggests that arrangements should be made for another meeting or that the issues be dealt with separately.

Having Appropriate Meeting Facilities

Temperature, lighting, noise, and seating provision are key aspects of the physical environment that have the potential to affect the ability of a meeting to function well, increase member comfort, and minimize distractions (Tropman 1996). Waddell and Rosko (1993) comment: "The room should be spacious enough to avoid a closed-in feeling. Having windows and a pleasant view, but not a distracting view… are highly desirable" (p. 42). Several authors (e.g., Spencer and Pruss 1992) draw attention to the need to provide for attendees' comforts (e.g., refreshments) in part to facilitate informal talk outside the meeting.

Having a Chairperson/Leader

As Carlozzi (1999) points out, the chairperson can facilitate the attainment of meeting objectives by directing the pace of the meeting and keeping the discussion on target. More specifically, the chairperson or leader is often the person who "calls meetings, sets the agenda, runs the meeting,

makes assignments, and helps coordinate people's efforts" (Sisco 1993, p. 63).

As illustrated above, there are grounds for expecting that each of the design characteristics will have a positive effect on perceptions of meeting effectiveness. Collectively, they serve to structure, organize, and create a pleasant meeting environment that can maximize the use of time rather than serving to waste it. In connection with meetings attended during a typical week (i.e., perceptions of meetings in general), we therefore test the following hypothesis:

Hypothesis 1 The five aforementioned design characteristics will each have a significant positive relationship with perceived meeting effectiveness.

The aim of a well designed meeting (e.g., with effective use of an agenda and a chairperson, good facilities) is to facilitate discussions, decision-making, problem-solving and so on by enabling attendees to be more fully involved in the meeting with greater focus and fewer distractions (e.g., Spencer and Pruss 1992; Tropman 1996). Given the importance of process criteria (e.g., workload sharing, cooperation, level of effort) to group/team effectiveness (e.g., Campion et al. 1996; Hackman 1987), we might expect that perceptions of this involvement will be the proximal predictor of effectiveness (e.g., Nixon and Littlepage 1992). In other words, we might expect that attendee involvement will act as a mediator, accounting for the relationships of the design characteristics with perceived effectiveness. We therefore test the following hypothesis:

Hypothesis 2 Attendee involvement will mediate the relationship between the design characteristics and perceived meeting effectiveness.

Method

Sampling Strategy

We wanted to attract participants from more than one country and type of organization in order to enhance the generalizability of responses obtained. To achieve this aim, respondents for an internet-based survey were contacted through: personal referrals, university alumni lists, online interest groups, commercially purchased double-opt-in email services, banner advertisements, university web sites, letters in newspapers and professional magazines, and a flyer in an organization.

Participants

Respondents from the most represented countries were selected for the present study: USA, UK, and Australia. This resulted in a usable sample of 958, with a mean age of 39 (SD = 11.00), of which 62% were female. On average, participants worked 38.47 h per week (SD = 13.47), and had been employed in their organization for 6.87 years (SD = 7.36); 53% had supervisory responsibilities. A number of organizational types were represented: private for profit 28%, private not for profit 14%, quoted private 24%, and public (e.g., city government) 29%. "Other" or unspecified organizational types comprised 5% of the sample. In terms of source country, 67, 26, and 7% were from USA, UK, and Australia, respectively.

Questionnaire Measures

Throughout the survey in Study 1, respondents were reminded to focus on prescheduled meetings attended during a typical week.

Perceived meeting effectiveness. Participants were asked to rate the effectiveness of their typical meetings in terms of goal achievement: "achieving your own work goals" "achieving your colleagues' goals" and "achieving your department's/section's/unit's goals." Ratings were recorded on a five-point continuum from "Extremely ineffective" to "Extremely effective." The internal consistency reliability (Cronbach's alpha) of this scale was .90.

Agenda. Two distinct forms of agenda were examined. One item assessed the extent of use of a written agenda *before meetings* ("A written agenda is provided before the meetings") and the other focused on the use of a verbal agenda *at meetings* ("A verbal agenda is provided at the meetings"). Responses to both items were recorded on a five-point response continuum from "Never" to "Always." In view of their conceptual and practical distinctiveness, these items were independently analyzed rather than in a scale.

Minutes. The recording of minutes was examined through "Minutes are taken," with response options on a five-point continuum from "Never" to "Always".

Punctuality. Two items were used to examine time keeping: "Meetings start on time" and "Meetings end when you expect them to end." Responses to both items were made on a five-point continuum from "Never" to "Always." These items were analyzed independently to determine potential separate effects of the two different aspects of punctuality.

Facilities. To examine quality of meeting facilities, the item was "Meeting facilities (e.g., rooms, equipment) are good." A five-point response continuum was used from "Never" to "Always."

Chairperson. A single item examined the use of a chairperson in a respondent's typical meetings: "There is a chairperson/leader at the meetings." Five response options were offered, from "Never" to "Always".

Attendee involvement. Two items were used to assess the extent of personal involvement in meetings: "Participation is widespread among meeting attendees" and "Participants work hard." Five response options from "Not at all" to "To a great extent" were provided. The internal consistency reliability of this measure was .72.

Results

Table 1 shows the descriptive statistics for each of the study variables and their zero-order intercorrelations. The mean of 3.63 for meeting effectiveness indicates that on average participants perceived their meetings to be moderately effective. Given the general negative representation of meetings in the literature, this average value is higher than might have been expected. Correlations between the design characteristics (variables 2–8 in the table) are of a small to moderate size. Stronger associations between the design characteristics concern minutes and use of a written agenda, facilities with starting and ending the meeting on time, and presence of a chairperson and use of a written agenda.

With regard to background variables (10–15), the relationships of gender and country with perceptions of effectiveness are non-significant. However, more senior employees tended to report higher levels of meeting effectiveness than junior ones, part-time employees reported slightly higher levels of effectiveness than full-time employees, and effectiveness was somewhat more associated with smaller organizations than larger ones. Given that each background variable is significantly related to some of the meeting features, they were all controlled in subsequent analysis.

Hypothesis 1

The first hypothesis states that each design characteristic will have a significant positive relationship with perceived meeting effectiveness. In order to test this prediction, the design characteristics were examined in seven separate analyses, in each case controlling for the background variables. Each design characteristic was found to have a significant positive relationship with perceived meeting effectiveness: written agenda ($\beta = .20$, $p < .01$); verbal agenda ($\beta = .17$, $p < .01$); minutes ($\beta = .10$, $p < .01$); start on time ($\beta = .27$, $p < .01$); end on time ($\beta = .31$, $p < .01$); facilities ($\beta = .33$, $p < .01$); and chairperson ($\beta = .08$, $p < .05$). Next, the design characteristics were analyzed simultaneously to examine the extent to which each contributes in itself (i.e., controlling for the other characteristics) to effectiveness. All except minutes and chairperson maintain their significant relationship (see

column 3 of Table 2, unique effects). Collectively, the design characteristics account for an additional 20% of the variance in Study 1 meeting effectiveness scores ($\Delta R^2 = .20$, $p < .01$) after controlling for the background variables. Overall, the findings offer good support for the hypothesis, in that each design characteristic is a significant individual predictor of effectiveness, with agenda use, punctuality, and facilities being of particular importance.

Hypothesis 2

The second hypothesis is that attendee involvement will mediate the relationship between the design characteristics and perceived effectiveness. To test this prediction, we followed Baron and Kenny's (1986) guidelines for assessing mediation effects, along with use of the Sobel test (Sobel 1988) to examine the magnitude of the indirect effect. The procedure was conducted using the unique predictors of effectiveness (see column 4, Table 2). As reported in the fourth column of Table 2, all characteristics except start on time maintain their significant relationship with effectiveness after controlling for attendee involvement. The Sobel test indicated that involvement had a significant mediation effect ($p < .05$), accounting for 18% (written agenda), 24% (verbal agenda), 35% (start on time), 15% (end on time), and 34% (facilities) of the relationships. These effects offer support for hypothesis 2. The overall regression equation explains 32% of the variance in meeting effectiveness ($R^2 = .32$, adjusted $R^2 = .31$, $p < .01$).

Study 2

Study 2 concerns the effectiveness of the last meeting attended on a particular day. This approach has an advantage over Study 1, in that responses are less susceptible to measurement limitations associated with recall biases and that it is possible to undertake a more refined examination of particular design characteristics.

Two prominent predictors of effectiveness—ones that are frequently reported in the trade literature—concern agenda use and chairperson role. Those receive more detailed attention in Study 2. With a focus on the last meeting attended, we examine three forms of agenda, namely written agenda before meetings, written agenda at meetings, and verbal agenda at meetings, along with the extent to which the agenda is worked through or completed. We expect that a written agenda disseminated before meetings (allowing adequate preparation) and the extent to which the agenda is completed (indicating good time management/use of time) will be particularly important predictors of perceptions of effectiveness.

In terms of the chairperson, we examine whether a chairperson was present at the meeting and also whether

Table 1 Means, standard deviation, and correlations between Study 1 variables (typical meetings)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Perceived effectiveness	3.63	.88	–													
2. Agenda: written in advance	2.76	1.13	.18**	–												
3. Agenda: verbal at meeting	3.03	1.14	.16**	-.05	–											
4. Minutes	2.91	1.29	.08*	.48**	.00	–										
5. Start on time	3.50	.93	.28**	.17**	.06	.11**	–									
6. End on time	3.19	.90	.32**	.13**	.08	.08*	.48**	–								
7. Facilities	3.84	.86	.32**	.07*	.08*	.07*	.30**	.31**	–							
8. Chairperson	4.16	.97	.06	.22**	.06	.20**	.15**	.09**	.12**	–						
9. Involvement	3.59	.87	.47**	.11**	.13**	.04	.23**	.21**	.28**	.04	–					
10. Job level	3.12	.93	.11**	.09**	-.04	.10**	.06	.00	-.02	-.05	.11*	–				
11. Gender[a]	–	–	.02	-.09**	.02	-.11**	-.05	-.03	.00	-.04	.07*	-.11**	–			
12. F/P time[b]	–	–	.10**	-.03	.03	-.08*	.02	.09**	-.02	-.00	.10**	-.03	.15**	–		
13. Organizational size[c]	–	–	-.08*	.13**	.05	.17**	-.07*	-.01	-.02	.06	-.11**	-.24**	-.08*	-.16**	–	
14. Country[d]	–	–	.04	-.13**	.09**	-.24**	.04	.09**	.14**	.08*	.11**	-.01	.20**	.07*	-.11**	–
15. Country[e]	–	–	-.05	.13**	-.09**	.23**	-.04	-.09**	-.14	-.05	-.08*	.06	-.19**	-.14**	.14**	-.85**

$N = 906$–958

* $p < .05$

** $p < .01$

[a] Dummy coded: male = 1, female = 2

[b] Dummy coded: full-time = 1, part-time = 2

[c] Log number of employees

[d] Dummy coded: US = 1, UK/Australia = 0

[e] Dummy coded: UK = 1, US/Australia = 0

Table 2 Hierarchical regression analysis involving predictors of meeting effectiveness for meetings attended in a typical week (Study 1)

Predictors	Control effects	Unique effects	Involvement effects
1. Background factors			
Job level	.11**	.10**	.07*
Gender	−.01	.02	.00
F/P time	.09*	.08**	.06*
Organizational size	−.04	−.06	−.04
Country (Dummy code 1)	.01	−.01	−.05
Country (Dummy code 2)	−.04	.01	−.03
2. Design characteristics			
Written agenda before meetings		.17**	.12**
Verbal agenda at meetings		.14**	.11**
Minutes		−.04	−
Start on time		.09*	.06
End on time		.18**	.15**
Meeting facilities		.22**	.14**
Chairperson		−.01	−
3. Involvement			.34**
R^2	.03**	.23**	.32**
Adjusted R^2	.02	.22	.31
$\triangle R^2$		.20**	.10**

* $p < .05$
** $p < .01$

that person was the research participant or someone else. We expect that higher levels of perceived effectiveness will be found for those who report that they chaired the meeting (e.g., Sisco 1993), consistent with the "better than average effect"—the tendency for people to evaluate their own characteristics (e.g., abilities) more favorably than that of an average peer (e.g., Svenson 1981; Taylor and Brown 1988). In order to examine consistency with Study 1, which covered typical meetings, we also examine the relationship of punctuality, minutes, and facilities with perceived meeting effectiveness.

Hypothesis 1 The five design characteristics (including the three types of the agenda and agenda completion, and the three aspects of the chairperson) will each have a significant positive relationship with perceived meeting effectiveness.

As with Study 1, we also examine the contribution of attendee involvement in accounting for the relationship of the design characteristics with effectiveness.

Hypothesis 2 Attendee involvement will mediate the relationship between the design characteristics and perceived meeting effectiveness.

In Study 2, we attempt to further gauge generalizability of findings by assessing effects across meeting types, size, and duration. Are design-effectiveness relationships consistent across meetings of different kinds? Several meeting types are documented in the literature (e.g., Volkema and Niederman 1995; Waddell and Rosko 1993). Here we examine routine issues meetings, information-sharing meetings, and special problems meetings as these were the most common types that participants attended. Given the lack of systematic research on meeting type to inform prediction development, no hypotheses appear appropriate and analysis at this stage is exploratory.

Finally, we examine whether the size and duration of a meeting moderate the relationship between design characteristics and perceived effectiveness. More specifically, we assess the importance of design characteristics for meetings of different sizes and durations. As with the examination of meeting type, the analysis is exploratory rather than hypothesis testing.

Method

Sampling Strategy

Participants in an internet survey were recruited using the same sampling strategy as in Study 1 to obtain a range of meeting experiences. Respondents were contacted through personal referrals, university alumni lists, online interest groups, commercially purchased double-opt-in email services, banner advertisements, university web sites, letters in newspapers and professional magazines, and a flyer in an organization.

Participants

Respondents from the most represented countries were selected (i.e., USA, UK and Australia), producing a sample of 523. To create consistency across respondents in data to be analyzed, we only examined the three most common meeting types, restricting attention to meetings that lasted more than 15 minutes and less than 3 h, and to meetings that had 25 or less attendees. The final sample was 292 participants, of which 69% were female, with an average age of 38.12 (SD = 10.55). On average, participants had an organizational tenure of 6.14 years (SD = 6.25), and 55% supervised others. They worked in a variety of organizations, including private for profit 37%, private not for profit 15%, quoted private 24%, and public (e.g., national government) 20%. Unspecified organizations ("other") accounted for 4% of the sample. For source country, the sample included 80% USA, 12% UK, and 8% Australia.

Procedure

In order to participate in Study 2, individuals necessarily had to attend at least one meeting during the work day in which they completed the survey. Participants were asked to complete the survey within an hour of the end of their work day. If they attended meetings as part of their job but not on that day, they were instead asked to complete the survey described in Study 1.

Questionnaire Measures

Focusing on the last meeting attended, survey questions asked about design characteristics, attendee involvement, and effectiveness, as well as demographic factors. Participants also indicated the number of attendees at that meeting. As in Study 1, individuals reported on prescheduled work-related meetings, defined in the same way. However, in this case the frame of reference was the day they had just completed rather than a typical week. Measures of meeting effectiveness ($\alpha = .93$) and attendee involvement ($\alpha = .69$) were the same as used in Study 1. Modified and new measures included in Study 2 are as follows:

Agenda. Respondents were asked "What agenda was made available, if any?" with the following options: "Written agenda before the meeting" ($N = 53$), "Written agenda at the meeting" ($N = 24$), "Verbal agenda at the meeting" ($N = 76$), and "No written, verbal or routine agenda" ($N = 61$). For analytic purposes, responses were dummy coded with each of the three agenda types coded 1 compared to no agenda (coded 0).

Agenda completion. This aspect of the meeting was addressed through: "To what extent did the meeting work through the agenda?" Responses were recorded on five points running from "Not at all" to "Completely". A "Not applicable" response option was also listed.

Minutes. The creation of minutes was indicated by "Were minutes taken?" with a "yes/no" (coded 1/0) response option.

Punctuality. Two items were used to examine time-keeping: "Did the meeting start on time" and "Did the meeting end when you expected it to end." Both items used a "yes/no" (coded 1/0) response, and responses were analyzed separately.

Facilities. Participants were asked to rate the quality of the meeting facilities (e.g., rooms, equipment) on a five-point continuum from "Very poor" to "Excellent."

Chairperson/leader. The question "Did this meeting have a chairperson/leader?" was followed by response options "No", "Yes—me", and "Yes—someone else." Initial analysis found no difference in perceptions of effectiveness between "yes—someone else" and "no chairperson." However, a significant difference was found between "yes—me" (with higher perceived effectiveness) and "yes—someone else"/"no chairperson." The item was therefore dummy coded with "yes—me" ($N = 44$) coded 1 and "yes—someone else" and "no chairperson" ($N = 245$) coded 0.

Types of meeting. Five meeting types were described: (1) information-sharing meetings (i.e., meetings primarily about announcing and discussing organizational, department, unit, team and/or personnel news); (2) training meetings (i.e., meetings primarily about receiving some type of work training); (3) recognition meetings (i.e., meetings primarily about recognizing and celebrating relevant events and/or accomplishments); (4) meetings about routine issues (i.e., meetings primarily about day-to-day monitoring or decision making that work on issues identified previously, for example assigning tasks, coordinating activities, and/or making other decisions); and (5) meetings about special problems (i.e., meetings primarily about new or unusual issues, rather than day-to-day problems). Three types were selected for analysis here as the other types lacked sufficient data: information sharing ($N = 128$), routine issues ($N = 119$), and special problems ($N = 73$).

Number of attendees. For the last meeting the number of attendees was requested. The response options were 2, 3, 4, 5, ... 26 + attendees.

Meeting duration. Respondents were asked to indicate how long the final meeting of the day lasted. Response options were <15, 15, 30, 45 min, 1 h, 1.15, ...5 + h.

Results

Table 3 shows Study 2 descriptive statistics and correlations between the variables for the last meeting attended on

a particular day. The mean for perceived effectiveness is 3.67, indicating that participants viewed their last meeting as being moderately effective. As with Study 1, this finding contrasts with common assumptions that meetings tend to be viewed as a poor use of time.

Correlations between the design characteristics are largely positive of weak to moderate size. The strongest correlations concern those between agenda use (written in advance and written at meeting) and agenda completion, and between those of minutes and agenda use. With regard to meeting size, larger meetings are positively associated with agenda use and the recording of minutes, but negatively associated with start on time and attendee involvement. Longer meetings are positively associated with use of a written agenda before the meeting, use of minutes, and attendee involvement, but negatively with start and end on time. Neither meeting size nor duration is significantly associated with perceived effectiveness.

None of the background variables (16–21 in the table) are significantly associated with effectiveness. However, job level, gender, organizational size, and country of origin are significantly related to some of the meeting features. For instance, higher levels of attendee involvement are reported by more senior employees, agenda use (written in advance and at meetings) is more frequently reported in larger organizations, and US participants rated meeting facilities more favorably than participants from the UK and Australia. Background variables that were significantly associated with meeting features were controlled in subsequent analysis.

Test of Hypothesis 1

The first hypothesis states that the design characteristics will each have a significant positive relationship with meeting effectiveness. As in Study 1, the characteristics were first analyzed in turn. After controlling for the background variables, the following characteristics were found on their own to predict significantly and positively perceived effectiveness: written agenda before the meeting ($\beta = .28$, $p < .01$), verbal agenda at the meeting ($\beta = .18$, $p < .05$), agenda completion ($\beta = .31$, $p < .01$), facilities ($\beta = .30$, $p < .01$), and chairperson "me" ($\beta = .24$, $p < .01$). The recoding of minutes and ending on time were found to approach significance ($\beta = .10$, $p < .07$ and $\beta = .11$, $p < .08$, respectively).

These characteristics were then analyzed simultaneously (see column 3 of Table 4, unique effects), excluding written and verbal agenda due to sample size attrition. Agenda completion, facilities, and chairperson were found to maintain their significant relationship with perceived effectiveness. After taking into account the background variables, the design characteristics explain 15% of the

Table 3 Means, standard deviation, and correlations between Study 2 variables (last meeting)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Perceived effectiveness	3.67	1.05	–																			
2. Agenda: written in advance	–	–	.22*	–																		
3. Agenda: Written at meeting	–	–	.14	–	–																	
4. Agenda: verbal at meeting	–	–	.19*	–	–	–																
5. Agda completn[a]	4.04	.98	.30**	.35**	.42*	.24*	–															
6. Minutes	–	–	.12*	.63**	.33**	.18*	.13*	–														
7. Start on time	–	–	.07	–.08	.05	.02	.08	–.05	–													
8. End on time	–	–	.12*	–.02	–.05	.01	.33**	–.03	.29**	–												
9. Facilities	3.70	.98	.32**	.20*	.15	.23*	.17**	.13*	.06	.01	–											
10. Chair person "Me"[b]	–	–	.24**	.24*	–.14	.20*	.09	.06	.06	.03	.13	–										
11. Involvement	3.82	.98	.41**	.17	–.04	.22*	.30**	.16**	.13*	.11	.38**	.25**	–									
12. Meeting type[c]	–	–	.03	.03	.05	.06	.00	–.04	–.06	–.00	.01	–.10	.01	–								

Table 3 continued

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
13. Meeting type[d]	–	–	.00	–.03	–.05	–.02	–.07	.05	.06	–.13*	.08	.09	–.01	–.46**	–							
14. Meeting size	–	–	–.08	.55**	.50**	.21*	.08	.14*	–.15*	–.01	.02	–.14*	–.15*	.05	–.10	–						
15. Meeting duratn[e]	–	–	–.04	.24**	.21	.02	–.05	.19*	–.12*	–.34**	.12	.02	.21**	–.02	.10	.12*	–					
16. Job level	3.34	.89	.07	–.01	–.08	.03	.03	.05	.14*	–.01	.09	.25**	.15**	–.12*	.10	–.15**	–.00	–				
17. Gender[f]	–	–	–.02	–.07	–.22*	–.11	.11	.06	.01	.08	.01	–.12	–.03	–.10	–.12	.03	.00	–.07	–			
18. F/P time[g]	–	–	–.04	–.06	–.18	.10	–.01	.02	.09	.08	–.05	.04	–.03	–.04	–.15*	–.13*	–.07	–.07	.15*	–		
19. Org. size[h]	–	–	–.07	.21*	.22*	.08	.05	–.00	–.09	–.01	.04	–.04	–.08	–.00	.09	.30**	–.04	–.36**	–.11	–.29**	–	
20. Country[i]	–	–	.02	–.15	–.07	–.16	.17*	.04	.04	.05	.13*	–.02	.05	.05	–.04	.12*	–.06	.04	.04	.03	–.05	–
21. County[j]	–	–	.04	.05	–.02	.07	–.13	–.09	–.09	–.02	–.10	.06	.02	–.05	.04	–.09	.05	–.01	–.13*	–.14*	.11	–.72**

$N = 83$–292

* $p < .05$

** $p < .01$

[a] Agenda completion

[b] Chairperson "Me"

[c] Dummy coded: routine issues = 1, special problems/information sharing = 0

[d] Dummy coded: special problems = 1, routine issues/information sharing = 0

[e] Meeting duration

[f] Dummy coded: male = 1, female = 2

[g] Dummy coded: full-time = 1, part-time = 2

[h] Log organizational size (number of employees)

[i] Dummy coded: US = 1, UK/Australia = 0

[j] Dummy coded: UK = 1, US/Australia = 0

Table 4 Hierarchical regression analysis involving predictors of meeting effectiveness for final meetings attended on a particular day (Study 2)

Predictors	Control effects	Unique effects	Involvement effects
1. Background factors			
Job level	.06	−.04	−.06
Gender	.05	.00	.01
Organizational size	−.07	−.09	−.06
Country (Dummy code 1)	.06	−.01	−.03
Country (Dummy code 2)	.09	.08	.06
2. Design characteristics			
Agenda completion		.20**	.18*
Minutes		.03	–
End on time		.08	–
Meeting facilities		.22**	.17*
Chairperson "me"		.18*	.15*
3. Involvement			.25**
R^2	.02	.17**	.22**
Adjusted R^2	−.01	.12	.18
$\triangle R^2$		.15**	.05**

* $p < .05$

** $p < .01$

variance in perceived effectiveness ($\Delta R^2 = .15$, $p < .01$). As in Study 1, the findings offer good support for hypothesis 1 in that most of the design characteristics individually predict perceived effectiveness, with agenda, facilities, and chairperson "me" of specific importance in the overall analysis.

Test of Hypothesis 2

This hypothesis assumes that attendee involvement will mediate the relationship between the design characteristics and effectiveness. To examine this possibility, the same procedure as in Study 1 was used. Findings are presented in Table 4 under involvement effects (column 4). Agenda completion, facilities and chairperson maintain their significant relationship with perceived effectiveness over and above the contribution of attendee involvement. To examine the significance of the mediation effect, the Sobel test was applied. In separate analyses for each of the design characteristics, involvement was found to mediate significantly ($p < .05$) the associations of agenda completion and facilities with perceived effectiveness, accounting for 26% (agenda completion) and 22% (facilities) of the relationships. Attendee involvement was found not to mediate the relationship between chairperson and perceived effectiveness. Hypothesis 2 is therefore partially supported. Overall, the regression model explains a large proportion of the

variance in perceived meeting effectiveness ($R^2 = .22$, adjusted $R^2 = .18$, $p < .01$).

Meeting type. First, we compared levels of perceived effectiveness across meeting types. After controlling for job level, gender, organizational size and country of origin, no significant differences were found across the three types. We then considered whether the relationship of the design characteristics with perceived effectiveness varies across meeting types. No significant interaction effects were found for any design characteristic. For instance, working through the agenda is important to effectiveness regardless of the type of meeting. Similarly, type of meeting had no bearing on the relationship between attendee involvement and perceived effectiveness.

Meeting size. We first examined the relationship between meeting size and perceptions of effectiveness. The findings revealed that this relationship was non-significant ($\beta = -.06$, ns). We also found no evidence of curvilinear relationships. As with meeting type, size of meeting was found to have no significant effect on the relationship between the design characteristics and effectiveness, controlling for background variables. For instance, facilities and attendee involvement emerged as important to perceptions of effectiveness regardless of the size of the meeting.

Meeting duration. How long meetings last was also found to have a non-significant relationship with perceived effectiveness ($\beta = -.03$, ns). No curvilinear relationships were found. All interaction tests were non-significant except for that of agenda completion with duration ($\beta = .16$, $p < .05$). The form of the interaction shows high levels of perceived effectiveness except for meetings of a longer duration when the agenda is not fully completed.

General Discussion

Two complementary studies have examined the relative importance of a number of widely proposed predictors of meeting effectiveness. The studies, to our knowledge in respect of the literature on meetings, are unique in terms of scope, content, and approach.

Study 1 was designed to assess the impact of meeting design characteristics using an employee's meetings in a typical week as the frame of reference. As expected, all of the design characteristics were found individually to have a significant positive relationship with perceived meeting effectiveness, controlling for background variables. The findings suggest, though, that agenda use, punctuality, and meeting facilities warrant particular attention. As hypothesized, attendee involvement was found to reduce significantly the relationships of the design characteristics with perceived effectiveness; and that variable appears to play an important mediating role in those respects.

Study 2 examined the perceived effectiveness of the last meeting attended on a particular day. Several design characteristics were found to be individually important in that respect: written agenda before the meeting, verbal agenda at the meeting, agenda completion, facilities, and chairperson "me". Of these characteristics, the findings suggest that agenda completion, facilities and chairperson merit specific attention. Again, attendee involvement served as a mediator of the relationships between the design characteristics (agenda completion and facilities) and meeting effectiveness.

An important contribution of Study 2 derives from the comparison between three markedly different meetings: routine issues, information sharing, and special problems. It was found that average perceptions of effectiveness are similar across those types. Similarly, no significant differences were found across meeting type in associations between perceived effectiveness and design characteristics or attendee involvement. In other words, these predictors of effectiveness are important regardless of the type of meeting.

An equivalent pattern of findings was found for meeting size; that is, the findings indicate that meeting size does not affect relationships of the design characteristics, or of attendee involvement, with perceived effectiveness. Findings for meeting duration are also non-significant except in respect of agenda completion: longer meetings are perceived as less effective than shorter ones when the agenda is not completed.

A number of consistent themes emerged across the two studies. First and foremost, we observed that meeting design factors are generally important to consider when examining perceived meeting effectiveness, accounting for a substantial proportion of the variance in that important dependent measure. One key design factor of relevance across both studies was the use of an agenda. In particular, through enabling individuals to prepare for meetings and therefore perhaps to contribute more effectively in them, a written agenda distributed before meetings can be of much practical worth. As expected, it was found that a written agenda in advance of meetings was significantly related to perceived effectiveness. Furthermore, the findings of Study 2 suggest that when an agenda is used, it is important to complete it. This might reflect, for instance, the return on time invested to prepare adequately for meetings, which is likely to be higher when the agenda is completed. Alternatively, agenda completion might indicate good meeting management, being perceived as a good use of time.

Another robust finding across both studies was the importance of appropriate meeting facilities. It is easier to understand the importance of this factor in influencing meeting effectiveness by considering when facilities are "bad" rather than "good". A meeting setting that, for instance, lacks the appropriate table arrangement, is noisy, is poorly lit, and is uncomfortable and can impede appropriate meeting processes and thus undermine effectiveness.

Attendee involvement emerged as particularly important in both Studies 1 and 2, having a direct effect on perceptions of effectiveness, but also accounting for much of the relationship between the design characteristics and effectiveness. This pattern of findings is consistent with the assumption that higher levels of the design characteristics, particularly agenda use and completion, starting on time and facilities, increases attendee involvement, which in turn leads to greater perceptions of effectiveness.

A further point concerning attendee involvement is that it is an important predictor of perceptions of effectiveness regardless of meeting size: higher levels of involvement predict greater perceptions of effectiveness. The zero-order correlation between size and involvement, though, shows a negative association: larger meetings are associated with lower levels of involvement. Given the importance of involvement to perceptions of effectiveness, this suggests that meeting organizers need to consider how to promote attendee involvement as meeting size increases.

Limitations and Future Work

Despite the strengths of these studies, notably the large number of participants and the focus on different time periods, the present research has some weaknesses. In particular, although the pattern of results is consistent with expectations, Studies 1 and 2 do not provide a strong basis on which to establish causality. For instance, attendee involvement might enhance perceptions of effectiveness that, in turn, might produce a more positive appraisal of the design characteristics. To overcome this limitation, change studies are required. Measurements would need to be taken before the introduction of change (e.g., a more comprehensive agenda, a better venue) and after subsequent meetings over a period of, say, three months. Ideally, findings would also need to be compared with those from meetings without change. Nonetheless, cross-sectional studies of the type reported here are important for the establishment of between-variable relationships in developing a new topic of inquiry.

In order to improve further research in the area, it would be worthwhile to collect independent records of meeting content and effectiveness. These could include observer assessments of meeting dynamics, agenda completion, subsequent goals/targets achieved and whether there was any formal evaluation of the meeting. Related to this, it would be interesting to gather more information on the actual meeting attendees, their relationships with one another, and how critical each is to the completion of the task (i.e., whether the right people attended the meeting).

These factors may be important to consider when assessing perceptions of meeting effectiveness. The use of such independent observations could be used to validate perceptual accounts and would reduce concerns about same-source variance, a potential bias that can increase observed associations between measures. However, the mainly weak to moderate correlations between design factors reported in Studies 1 and 2 suggest that this form of bias was not particularly problematic (e.g., Spector 2006).

In order to obtain descriptions of meeting design characteristics, single items were used. The information observed about a particular issue can thus lack detail. It would be worthwhile, for instance, to examine which aspects of facilities are most important to perceptions of effectiveness. The same issue applies to the end-on-time aspect of meeting punctuality. If a meeting did not end on time, it might have ended late or early, and for varying reasons, with potentially different implications for perceptions of effectiveness. To obtain richer accounts of the way in which such design characteristics relate to perceived effectiveness, multiple items are required.

Two additional sets of findings with respect to non-central variables draw attention to interesting research possibilities. More senior managers viewed their meetings more favorably than others. This positive bias could create blind spots in these leaders' ability to identify problems and make positive improvements. Future work to examine differences between job levels would be very valuable.

Findings also suggested that the UK participants had slightly lower perceptions of meeting effectiveness than participants from other countries. While this study did not draw representative and equivalent samples across countries, it does raise the possibility that significant cultural differences might exist. Further work could sample more strategically, perhaps examining countries along a continuum of key cultural dimensions (e.g., individualism-collectivism) to ascertain the importance of culture in meeting processes and outcomes. Similar comparisons would also be attractive with respect to culture at the organizational level: in what ways are different components of organizational culture reflected in differences in meeting processes and outcomes?

In overview, the relative importance of design characteristics in perceptions of meeting effectiveness has been clarified, taking into account the role of attendee involvement as well as meeting type, size, and duration. The results from this study can be used by those who call meetings to inform meeting construction, with potential benefits for both attendees and organizations. Meeting organizers should be particularly aware of the importance of agenda use (particularly completion), punctuality, venue quality, and the role of the chairperson in shaping attendee

perceptions of effectiveness. Given the large number of meetings which employees attend, making even modest improvements will likely pay substantial dividends.

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