- Orlikowski, W. and S. Scott 2008. 10 Sociomateriality: Challenging the separation of technology, work and organization. *The Academy of Management Annals* 2 (1): 433–474.
- Ostrom, A. L., A. Parasuraman, D. E. Bowen, L. Patricio, and C. A. Voss 2015. Service research priorities in a rapidly changing context. *Journal of Service Research* 18 (2): 127–159.
- Prahalad, C. and V. Ramaswamy 2004. Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing* 18 (3): 5–14.
- Ranjan, K. R. and S. Read 2016. Value co-creation: Concept and measurement. *Journal of the Academic Marketing Science* 44: 290–315.
- Saarijärvi, H., P. K. Kannan, and H. Kuusela 2013. Value co-creation: Theoretical approaches and practical implications. *European Business Review* 25 (1): 6–19.
- Salganik, M. J. and D. D. Heckathorn 2004. Sampling and estimation in hidden populations using respondent-driven sampling. *Sociological Methodology* 34 (1): 193–240.
- Sitalloppi, J. and S. L. Vargo 2014. Reconciling resource integration and value propositions – the dynamics of value co-creation. *System Sciences (HICSS)*, 2014 47th Hawaii International Conference on IEEE, Waikoloa, HI.
- Sjöberg, L. 1980. The risks of risk analysis. *Acta Psychologica* 45 (1): 301–321.
- Spohrer, J. C. and P. P. Maglio 2010. Toward a science of service systems, in *Handbook of Service Science* edited by P. Maglio, 157–194. Springer, New York.
- Sykes, T. A., V. Venkatesh, and S. Gosain 2009. Model of acceptance with peer support: A social network perspective to understand employees' system use. *MIS Quarterly* 33 (2): 371–393.
- Vargo, S. and R. Lusch 2008. Service-dominant logic: Continuing the evolution. *Journal of the Academy of Marketing Science* 36 (1): 1–10.
- Vargo, S. and R. Lusch 2016. Institutions and axioms: An extension and update of service dominance logic. *Journal of the Academy of Marketing Science* 44: 5–23.
- Øvretveit, J., T. Scott, T. G. Rundall, S. M. Shortell, and M. Brommels 2007. Improving quality through effective implementation of information technology in health-care. *International Journal for Quality in Health Care*, 19 (5): 259–266.

3

Video Killed the F2F-Interview Star: A Mixed-Method Study into the Effect of Pre-Recorded Video Interviews as a Selection Tool

Tanya Bondarouk, Huub Ruël and Bart ter Harmel

CONTENTS

3.1	Introduction.....	54
3.2	Literature Review.....	55
3.2.1	Consequences of Web-Based Video Interviews in Pre-Selection.....	57
3.2.1.1	Number of Applications.....	57
3.2.1.2	Quality of Applications.....	57
3.2.1.3	Quality of Screening Applications.....	57
3.2.1.4	Pre-Selection Costs.....	59
3.2.1.5	Consequences for the Selection Stage.....	59
3.2.1.6	Number of Applicants in the Selection Stage.....	59
3.2.1.7	Quality of Applicants in the Selection Stage.....	59
3.2.2	Overall Consequences for the Entire Selection Process.....	60
3.2.2.1	Number of Hires.....	60
3.2.2.2	Quality of Hires.....	60
3.2.2.3	Cost of the Selection Process.....	60
3.3	Methodology.....	60
3.3.1	The Semi-Structured Interviews.....	61
3.3.2	The Experiment.....	61
3.3.2.1	Candidate Evaluation Questionnaire.....	63
3.3.2.2	Analysis of Agreement among Recruiters.....	64
3.3.2.3	Effect of Medium on Decisions to Invite for a Job Interview.....	64
3.4	Results.....	64
3.4.1	Semi-Structured Interviews with HR Professionals.....	64
3.4.2	Results from the Experiment.....	65
3.4.2.1	Intelligence.....	67
3.4.2.2	Motivation.....	67
3.4.2.3	Leadership Skills.....	67

3.4.2.4	Interpersonal Skills.....	67
3.4.2.5	Overall Qualifications.....	68
3.4.2.6	Effect of Medium on Decision to Invite for Interview....	69
3.4.2.7	Effect on Video Performance.....	69
3.5	Discussion.....	70
3.6	Conclusion.....	71
3.6.1	Applicant Attraction.....	71
3.6.2	Applicant Quality.....	71
3.6.3	Quality of Pre-Selection Decisions.....	72
3.6.4	Trade-Off between Quality and Quantity of Applicants.....	73
3.6.5	Future Research.....	73
Appendix A.	Overview of Possible Consequences of Using Video Interviews for Job Selection as Reported in Different Studies.....	73
Appendix B.	Overview of Empirical Findings Related to the Usage of Video Interviews in Selection Processes.....	78
References.....		84

3.1 Introduction

Information technology (IT) has entered almost every aspect and all facets of human resource management (HRM) and the way in which IT becomes integrated with HRM strategy and practices, and keeps on advancing. One area to which this definitely applies is recruitment and selection, or in short, the hiring process.

In 2013, CedarCrestone reported that more than 80% of their sample of large US organisations used electronic selection to enable the hiring processes (CedarCrestone, 2012–2013). Applying for a job has become a largely internet-based process, supported by mobile devices such as smartphones. Employers receive in general about 100 applications for each job opening, even though only 25% of applicants meet the minimum requirements for the positions for which they apply. As the modern HRM discourse claims, *finding people has never been easier, but recruiting has never been harder*.

The 'digitisation' of the hiring process results in many new questions for human-computer interaction (HCI) research. This chapter focuses on a relatively new, but rapidly growing, approach to e-selection: time- and place-independent webcam-based video-recorded interviews. Applicants use a webcam and a microphone to record a video with the answers to programmed interview questions over the internet, while recruiters or other human resources (HR) specialists can watch this video wherever and whenever they want. One of the first notions describing such a pre-selection video recording goes back to 2001 (Frost, 2001), though in those days most candidates were expected to travel to a videoconference centre to record their answers to job interview questions.

Today, a mobile device with a camera is all that is needed to participate in a job interview. The use of webcam-based pre-structured job interviews as a pre-selection tool is consequently emerging.

Applicants visit a website on which they are asked to answer a set of questions that is designed for a specific job vacancy. Their answers are recorded and sent to a recruiter, who can complete the selection procedure at any convenient time or location.

Several claims have been made to justify business cases to implement such a pre-selection tool. The main ones are that the use of a pre-selection tool results in a reduction of the number of face-to-face interviews, cost and time savings, and a better-qualified pool of candidates.

From an HCI perspective, this practice raises questions such as: How do applicants perceive the experience of answering a standardised set of questions to an internet-connected camera without getting immediate feedback or being able to observe facial cues from an interviewer? Or, does this computer-based selection interview result in a greater chance of socially desirable behaviour from the applicant? What role does the interface design and layout have on applicants and their responses to the programmed interview questions? To what extent do recruiters perceive pre-recorded videos with a standardised set of questions as useful and helpful for the selection process? These questions touch on key issues in HCI research, such as media richness, synchronicity, navigability and interface design.

The focus of our study is on webcam-based video-recorded interviews for recruitment and selection purposes and in particular, on the consequences of implementing and using such a tool in the pre-selection phase (before the face-to-face interview stage) of the recruitment and selection process. The following research question was formulated: *What are the consequences of using webcam pre-recorded video interviews in the recruitment and selection process of job candidates?*

To answer this research question, a three-step study was conducted, consisting of a structured literature review (step 1), a qualitative exploratory study and an experiment (step 2), and a reflective part (step 3). Consequences in our study included both positive and negative ones, as well as intended and unintended ones.

3.2 Literature Review

Following Stone et al. (2015), we define e-selection in this paper as the usage of pre-recorded video interviews to assess the degree to which the applicants' knowledge, skills and abilities fit the job requirements. In order to gain an initial insight into previous work about the consequences of e-recruitment, and especially the use of webcam technology in the selection process, a

systematic literature search was conducted. A keyword search was done on the frequently used databases Scopus, Web of Science and Picarta with the terms 'applicant selection internet', 'applicant selection web', 'e-recruitment', 'video interview recruitment', 'video recruitment', 'videoconference recruitment', 'video selection', 'videoconference selection' and the same terms with 'video' replaced by 'webcam'. Titles and abstracts of the identified papers were read to determine whether the literature was related to the use of webcam and/or video technology in the recruitment process. The resulting set of articles was double-checked with another researcher, and some additional articles were added, resulting in a total of 51 papers. Next, the Web of Science database was used to determine how many times each article had been cited. The titles and abstracts of those articles were read using the same criteria for elimination employed earlier in the process. For articles not found using this database, citations were checked using Google Scholar. The process was repeated until no additional articles were found, which provided us with a final set of 77 articles (Appendix A). An overview of empirical findings is presented in Appendix B. The consequences that were discussed most in the literature were the cost effects on the selection process, effects on the quality of the selection process, and the reactions of applicants to the selection procedure.

Our structured literature search resulted in the following overview. The context issues of e-selection have been extensively researched. Applicants are, for example, concerned about their privacy and question the fairness of the selection process (Bauer et al., 2006). Another example is the meta-analysis of 71 studies on applicant attraction by Chapman et al. (2005), which demonstrated that their perceptions of the recruitment process negatively affected how attracted the applicants felt towards the organisations.

Different studies have compared the effectiveness of different selection methods. For example, Elgin and Clapham (2004) compared the ratings given by 100 university students to *résumés*. The authors found that even the form of submitting a *résumé*, either electronically or on paper, resulted in different ratings, which indicates that a small change in the selection procedure itself can influence its results. Furthermore, the accuracy of selection was found to be dependent on the method used. Blackman (2002) tested the accuracy of personality judgements in telephone and face-to-face interviews by comparing them with an applicant's self-assessment, and found that face-to-face interviews resulted in more accurate personality judgements than telephone interviews. In a similar way, Straus et al. (2001) compared face-to-face interviews with videoconference-based interviews. Applicants who were interviewed using videoconferencing were not rated lower when compared with those interviewed face-to-face. Chapman and Rowe (2001) studied the use of videoconferencing technology in the employment interview and found a positive bias in favour of applicants interviewed via a desktop videoconference system. However, Van Iddelinge et al. (2006) found strong support for their hypothesis that the ratings of face-to-face interviews would

be significantly higher than those of videotapes of the same interviews. Stone et al. (2015) mentioned several limitations of e-selection, related to high cognitive demands embedded in computerised testing systems, extra impact of computer anxiety and skills on selection scores, and biased perceptions.

3.2.1 Consequences of Web-Based Video Interviews in Pre-Selection

Throughout our literature review, we did not come across a common theory explaining the outcomes of this practice. Therefore, we started by conceptualising the antecedents of using web-based video interviews in pre-selection. Three main consequences seem to be important when implementing video interviews. The cost of selecting the applicants, the quality of the applicants and the number of applicants are relevant for every stage of the selection process, that is, the receiving and screening of applications, short-listing candidates in pre-selection, and meeting, testing and interviewing in the selection stage. The important elements for the final outcome are the number of hires, the quality of the hires and the total costs involved in hiring new personnel. We therefore discuss all three groups of consequences for pre-selection and selection and their overall impact on the process of hiring candidates.

3.2.1.1 Number of Applications

The pre-selection stage starts with the receipt of applications. It is clear from the literature that the way in which selection is conducted influences the willingness of applicants to apply for a certain vacancy. The candidates' perceptions of fairness about the technology used seem to be particularly influential. When their perceptions are more positive, the number of applications increases. But as we do not know how they feel about this technology, it is unclear how the implementation of video interviews will affect the candidates' perceptions.

3.2.1.2 Quality of Applications

Different ideas indicate that the use of e-recruitment results in a large pool of underqualified candidates, which suggests that a relation exists between the recruiting system in use and the quality of applications. Video interviews differ from the e-recruiting systems described in these notions, so we cannot predict how the implementation of video interviews will affect the quality of applications.

3.2.1.3 Quality of Screening Applications

Findings from research on the effects of the use of videos in selection processes are mixed regarding the accuracy of judgements, and we did not come across an underlying theory explaining how their use in pre-selection

would affect the quality of pre-selection decisions. One notion was found that explained the difference in the quality of personality judgements between telephone and face-to-face interviews. Blackman (2002) found that personality judgements were more accurate for face-to-face interviews compared with telephone interviews. The explanation given for this result was that face-to-face interviews provided a larger quantity and richer quality of candidate behaviours. We can draw a parallel between Blackman (2002) and the comparison between judging *résumés*, on the one hand, and judging video interviews, on the other. Recruiters cannot see any nonverbal information provided by an applicant when judging a *résumé*. When a video interview is judged, however, their nonverbal behaviour is evident. Blackman (2002) argued that the additional information provided would result in more accurate judgements. This argument is in line with a general theory of media richness proposed by Lengel and Daft (1984). We used this theory to conceptualise how the implementation of video interviews could affect the quality of pre-selection decisions. Daft and Lengel (1986) proposed that media richness is an important factor in organisational decision-making. They define media richness as the ability of information to change understanding within a time interval, which is dependent on the source, channel, language and possibilities for feedback. Face-to-face communication is the richest form of communication, because it provides immediate feedback, the message content is expressed in natural language, and different cues such as body language and tone of voice are provided. Earlier, in 1984, Daft and Lengel argued that the telephone as an information medium has high information richness but is lower in richness than face-to-face information sharing. This is in line with the findings from Blackman (2002). It therefore seems that media richness theory has a strong explanatory power in the selection process of job candidates. Daft and Lengel (1984) provide an overview of the richness-determining characteristics of face-to-face, telephone and pre-recorded video interviews, and *résumés*.

This overview reveals that face-to-face communication is the richest form of information because it enables immediate feedback, provides information in a visual way as well as through sound, and allows the observation of body language. A *résumé* is the least rich, because feedback is slow, communication is limited and only natural language is provided. Pre-recorded video interviews and telephone interviews are placed in between these extremes. Feedback for video interviews is slow compared with telephone interviews, but it provides information via a visual channel which allows the observation of body language. Therefore, it remains unclear which of the two media is richer. It can be concluded that, theoretically, pre-recorded video interviews have greater media richness than *résumés*. According to Daft and Lengel (1986), using richer media can reduce equivocality, which is the existence of multiple and conflicting interpretations about an organisational situation.

When this theory is applied to the selection process of job candidates, it implies that using richer media in selection processes would reduce the number of conflicting interpretations about job candidates. This would increase the agreement between recruiters about whom to hire and improve the quality of selection decisions.

3.2.1.4 Pre-Selection Costs

A logical consequence of implementing an additional selection tool in the pre-selection process is that the cost of pre-selection increases. There is the cost of the system itself and the additional time needed by recruiters to set up interviews and review the videos. The cost is also affected by the number of applications. The more applications, the more time is needed to review them.

3.2.1.5 Consequences for the Selection Stage

Because video interviews are used for pre-selection and not for the selection stage, no direct effects on the latter are expected from the implementation. Its use in pre-selection can affect the number and quality of applicants entering the selection stage.

3.2.1.6 Number of Applicants in the Selection Stage

When the number of applicants in the pre-selection stage is lower, a smaller number of applicants is expected in the selection stage. According to Thompson et al. (2008), a higher number of applications doesn't necessarily result in a higher number of candidates in the selection process, because it allows organisations to be highly selective. A higher number of applications would therefore result in a trade-off between the number and the quality of candidates in the selection process.

3.2.1.7 Quality of Applicants in the Selection Stage

The quality of applicants who are invited for the selection stage depends on three factors. First is the already discussed trade-off between quality and number of applicants who are invited for this stage. Second is the quality of the candidates in the pre-selection process. The higher the average applicant quality in this stage, the higher the quality of applicants in the selection stage. Third, the quality of the pre-selection decisions will affect the quality of applicants entering the selection stage. When better decisions are made, the quality of applicants in the selection stage will be higher.

The costs of the selection stage depend on the number of applicants who go through the selection process. A linear, positive relation exists between the number of applicants in the selection stage and the costs of this stage.

3.2.2 Overall Consequences for the Entire Selection Process

3.2.2.1 Number of Hires

The number of hires can be affected by both the quality and the quantity of applicants in the selection stage. A larger number of applicants in the selection stage will enable organisations to hire more candidates. It is also possible to make the same trade-off as in the pre-selection stage between number of hires and quality. A larger number of applicants in the selection stage could therefore increase the quality of hires as well. The quality of applicants in the selection stage can result in a different number of hires. When the average quality is higher, more candidates are successful in the selection process, which will result in a higher number of hires per candidate who is invited to the selection process.

3.2.2.2 Quality of Hires

The trade-off between the number and the quality of hires has been discussed. A higher number of applicants in the selection process can be used to increase the number or the quality of hires. The same holds for the effect on the quality of hires in the selection process, which can result not only in a higher average quality of hires but also in a higher number of hires.

3.2.2.3 Cost of the Selection Process

The cost of the selection process depends on the cost of both the pre-selection and the selection stage. To take the effects on the number of hires into account, costs should be calculated per hire. Our expectation is that the cost will increase, because pre-selection becomes more expensive, unless the claim of technology providers is true that fewer face-to-face interviews will have to be conducted.

Our analysis of the literature indicates that both the quality and quantity of applications could be affected. The findings on using videos in the selection process are also mixed. It is uncertain whether the quality of pre-selection decisions will increase. Therefore, empirical evidence was gathered for additional insight into the consequences of using web-based pre-recorded video interviews in selection processes.

3.3 Methodology

This study focuses on the consequences of webcam-based video-recorded interviews for recruitment and selection purposes. This means that an interview is conducted via the internet based on pre-selected questions. These

questions are presented to an applicant on her or his computer screen and a connection made to the device's speakers. The interview is recorded and can be watched and assessed at a later time by the organisation requesting it.

To explore the consequences of using pre-recorded video interviews in the recruitment and selection process of job candidates, a sequential research design was chosen, consisting of three steps. After the literature review, the results of which are summarised in the previous section, the second part of the study involved 12 semi-structured interviews with recruiters and HR professionals from companies active in a broad variety of industries. The aim was to identify how organisations make use of pre-recorded video interviews, what their reasons for implementation are, and most importantly, what the consequences of using these interviews in the selection process look like. This resulted in the description of a full range of consequences.

Subsequently, an experiment was conducted to explain the interview results through observation of the pre-selection process. Six recruiters from one company participated in the experiment. Their task was to review the applications of job seekers who had recorded a video interview and submitted a résumé as an open application. Three recruiters independently evaluated the résumés of five applicants, while the other three evaluated the recorded interviews. Part three of this study consisted of a reflection on the outcomes of the experiment.

3.3.1 The Semi-Structured Interviews

Respondents for the semi-structured interviews were selected from the client base of a company that provides systems for webcam-based, pre-structured job interviews. These respondents came from a broad variety of organisations and industries (see Table 3.1 for an overview of the interviewees). The interviews were recorded and turned into an interview report that was shared with the interviewee for clarification and confirmation. The interviews were analysed by categorising the consequences of webcam-based, pre-structured job interviews as mentioned by the interviewees. A set of categories based on the literature was available already, but when an interviewee mentioned a type of consequence that did not fit in the existing set, a new category was added.

3.3.2 The Experiment

The first objective of the experiment was to explore whether video interviews lead to improved agreement between recruiters when decisions to invite candidates for face-to-face interviews are made. This is an indication of a better quality of selection decisions. By exploring the quality of selection decisions using a second method, the interview results were triangulated, strengthening the reliability of our findings on this issue, which turned out to be a highly important consequence.

TABLE 3.1

Overview of Interviewees

No.	Function of Interviewee	Industry	Interview Duration (min)
1	HR expert	Health insurance	36
2	Director	Consultancy	34
3	Recruiter	Service provider in public transportation	25
4	Manager of trainee programme	Government	46
5	Manager of trainee programme	Financial services	36
6	HR representative	Financial services	15
7	Owner/Director	Research and consultancy in communication for the labour market and in recruitment	39
8	Recruiter	High-tech	34
9	HR representative	Construction company	17
10	HR consultant	Consultancy in selection and assessment	45
11	HR representative and office manager	Software provider for document and process management	19
12	Director	Service provider in staffing and recruitment	44
Total interview time:			330 min

The second objective was to explore further which applicant characteristics were revealed by video interviews compared with those found from an analysis of *résumés*. The third objective was to gain more insight into the effects of using video interviews on the decisions made by recruiters on whom to invite for face-to-face interviews. These objectives served as triangulation for the interview findings on these two topics. The sequential design, in which the experimental design was based on the interview results, allowed us to gain a fuller understanding of how and why a change in the pre-selection method resulted in the consequences observed in the interviews. Respondents were asked which employee characteristics they determined using *résumés* and which were revealed by videos. This was used as input for the experimental design, in which the agreement between recruiters on the aforementioned characteristics was examined. We found that using video interviews affected the decisions to invite applicants for face-to-face interviews, and the experiment was also used to examine this consequence in more detail. Before the interviews were conducted, possible consequences described in the literature were operationalised (Table 3.2).

Six recruiters from the same company participated in the experiment. Their task was to review the applications of job seekers who had recorded

TABLE 3.2

Operationalisation of the Investigated Consequences

Consequence	Definition	Indicators
Financial	All cost changes within the entire recruitment and selection process	Costs of pre-selection stage Cost of selection stage
Quality of the selection process	The extent to which organisations are able to make correct selection decisions	Quality of judgements made in (pre-)selection
Applicant experience	Applicant perceptions of the selection process after being subject of video selection	Reactions given by applicants to recruiters
Applicant attraction	Number and quality of applicants applying for a particular job due to the use of video interviews	Effect on applications
Time to hire	Time between job posting and hiring decisions	Speed of the selection process
Recruiter perceptions about video pre-selection	Willingness of recruiters to work with video pre-selection	Recruiter perceptions on how they like working with the system

a video interview and submitted a *résumé* as an open application during a career fair. Recruiters 1 and 2 independently evaluated the *résumés* of five applicants, recruiters 3 and 4 evaluated the video interviews recorded by the same applicants, and the other two recruiters evaluated the combination of video and *résumé*. The participating recruiters reviewed a set of applicant attributes: intelligence, motivation, leadership skills, interpersonal skills and qualifications. Respondents indicated that some attributes, such as motivation and interpersonal and leadership skills, can be revealed by videos but are difficult to judge when using *résumés*. Other attributes, such as intelligence and overall qualifications, are related to 'hard criteria' that are indicated on *résumés*.

3.3.2.1 Candidate Evaluation Questionnaire

The candidate evaluation questionnaire was developed by examining previous research on *résumé* evaluations. An adapted version of the candidate attributes from a study by Elgin and Clapham (2004) was used for the candidate evaluation based on results from the interviews. It consisted of a list of 30 items divided over 5 attributes. For all items, statements about the applicant were made (such as 'the applicant is intelligent'), to which the reviewer could respond using a seven-point Likert scale. This enabled the reviewer to indicate to what extent he or she agreed with the statement, using the following scale: disagree strongly, disagree moderately, disagree mildly, not sure/mixed, agree mildly, agree moderately, agree strongly. The order in which items were asked was randomised to spread bias over all attributes.

3.3.2.2 Analysis of Agreement among Recruiters

To get insight into the quality of the judgements made by recruiters, the agreement of recruiters within each condition (résumé or video) was evaluated. This was done by calculating the correlation coefficient between recruiters' responses on each attribute per condition (résumé, video or combination). The higher the correlation between responses, the higher the agreement between recruiters. Before the agreement was analysed, a check was made to see whether the respondents understood the characteristic they were judging. When the majority of responses indicated that recruiters were not sure about how to judge a characteristic, this was seen as an indication that it was not possible to make a judgement.

3.3.2.3 Effect of Medium on Decisions to Invite for a Job Interview

Decisions to invite applicants for an interview in conditions were explored. Different items were employed to get an indication of how the medium used affected hiring decisions. To deepen our understanding of the reason behind selection decisions, recruiters were asked whether they would invite an applicant for successive stages of the selection process and to support their decision in a short statement. They were also asked to name the job titles they thought relevant for the applicant. The decision to invite an applicant for a job interview was evaluated using an existing scale by Cole et al. (2004). Recruiters were asked whether they would be interested in interviewing the applicant, whether they would recommend hiring the applicant, how likely it was that the applicant would succeed at their organisation and their overall perception of the applicant.

Along with these scale items, a yes/no decision was used to discover whether the applicant was invited for successive stages of the selection process, and some open-ended questions were employed to get an impression of the reasoning behind the recruiters' decisions. This enabled further exploration of the effects of using different media in the pre-selection process on recruiters' decisions to invite applicants for a job interview.

3.4 Results

3.4.1 Semi-Structured Interviews with HR Professionals

The semi-structured interviews with 12 HR professionals from a wide variety of organisations and industries resulted in an overview of the consequences of web-based video interviews derived from a pre-structured set of questions for recruitment and selection purposes. The results show that according to HR professionals, positive consequences in the pre-selection

stage are a lower number of applicants and filtering out of unsuitable candidates, which can result in an insufficient number of applications. The quality of the applications overall remains equal compared with the 'traditional' résumé-based pre-selection, but in some cases, it is higher. Web-based recorded interviews for recruitment and selection take a little more time according to all HR professionals except one. In the latter case, they took a lot of extra time.

The HR professionals expressed that using web-based recorded interviews resulted in better pre-selection process decisions, in finding suitable applicants despite their poor résumé and in the rejection of unsuitable applicants (due to their personality). One disadvantage is that it can result in judgements that are not objective once an applicant is invited for a face-to-face interview.

For the selection stage, the use of web-based recorded video interviews for recruitment and selection purposes resulted in only positive consequences. HR professionals mentioned conducting a lower number of face-to-face interviews as a consequence of the better selection based on the recorded video interviews. The quality of the remaining candidates was higher, resulting in a higher success rate of selecting the right candidate for the vacant position. The overall costs of recruitment and selection decreased, as the number of face-to-face interviews to be conducted was lower.

The overall consequence of the use of web-based recorded video interviews for recruitment and selection purposes according to HR professionals is that the number of hires remains equal in most situations compared with 'traditional' résumé-based selection. A negative consequence mentioned was that in some situations, the number of applicants was too low. This results in unfilled vacancies. The overall quality of hires is equal compared with 'traditional' résumé-based candidate selection, but HR professionals mentioned an overall cost reduction with the use of web-based video interviews for recruitment and selection. Table 3.3 presents an overview of the consequences as derived from the interviews with HR professionals.

3.4.2 Results from the Experiment

The first objective of the experiment was to see whether the agreement between recruiters increased when they were provided with more information. Analysing the agreement for all items indicated that more information did not result in higher levels of agreement. Judging résumés produced a similar positive correlation between recruiters as judging videos (0.62 and 0.55, respectively). In the condition where recruiters judged the combination of résumé and video, the correlation between their answers was remarkably lower (0.37). The overall picture thus did not show that higher information richness results in better judgements. During the interviews, different respondents indicated that certain competencies of applicants could be judged better using a résumé, and that a video was more suitable to predict

TABLE 3.3

Overview of Consequences of Implementing Web-Based Video Interviews

Stage of the Selection Process	Effect on	Advantage	Disadvantage
Pre-selection Stage	Number of applicants in pre-selection	Lower number of applications: unsuitable candidates are filtered out	Lower number of applications <ul style="list-style-type: none"> • Suitable candidates are possibly filtered out • Can result in too few applications
	Quality of applicants in pre-selection	Quality of applications remains equal, or is higher in some cases	Little additional time needed in most situations, one interviewee indicated it took a lot of time
	Time needed for pre-selection		A wrong pre-selection decision can result in a subjective judgement during face-to-face interviews
	Quality of pre-selection process	Additional information available resulting in: <ul style="list-style-type: none"> • Better pre-selection decisions • Finding suitable applicants with a poor résumé • Rejecting unsuitable applicants because of personality 	
Selection Stage	Number of applicants in selection	Lower number of applicants, resulting in fewer interviews to conduct	
	Quality of applicants in selection	Higher quality of applicants, resulting in higher success rate during selection process	
	Costs of selection	Lower costs, because fewer face-to-face interviews are conducted	
Overall	Number of hires	Remains equal in most situations	In some situations, too few applications come in, resulting in unfilled vacancies
Consequences	Quality of hires	Remains equal	
	Overall costs	Costs are reduced because of cost reductions for the selection process	

their soft skills. Therefore, the five attributes (intelligence, motivation, leadership skills, interpersonal skills and overall qualifications) were analysed separately.

3.4.2.1 Intelligence

The judgement of an applicant's intelligence showed a moderate correlation when résumés were used. For both situations in which recruiters were able to watch a video, the correlation between their answers was weak. This indicates that a résumé is somewhat useful to analyse someone's intelligence, but that a video is not suitable for such an analysis even if a résumé is available as well.

3.4.2.2 Motivation

Respondents indicated that a video gives them some idea of motivation. We saw a weak to moderate correlation between the scores given by recruiters 1 and 2, who used résumés in their judgements. A moderate correlation was seen in the situation where videos were judged, which is in line with the interview results. Again, the combination of résumé and video showed a weak link between the evaluations of both recruiters.

3.4.2.3 Leadership Skills

Leadership is a skill that could possibly be judged using a video, but likely not using only a résumé. Recruiters who used a résumé indicated that they were unsure about leadership skills for three out of five applicants, scoring four points out of seven on all items. For the fourth applicant, a recruiter agreed moderately that this candidate had leadership skills. His colleague was unsure about all items. For the fifth applicant, both recruiters agreed that she possessed leadership skills. This was acknowledged by their colleagues who judged the videos. This suggests that it is sometimes possible to get a clue about an applicant's leadership capabilities from a résumé, but not in the majority of situations. As predicted by different respondents, the agreement between recruiters who watched videos only was high, which indicates that it is possible to determine leadership skills from a video. However, when both résumés and video were available, a low correlation was found.

3.4.2.4 Interpersonal Skills

As expected, judging interpersonal skills using a résumé did not seem to work. The recruiters in this situation indicated that they were unsure about all items measuring this attribute except for one. This item measured the language skills of the applicants, for which both recruiters gave a positive judgement for all five applicants. The only clue they could use for their judgement

was the written text on the résumés. All recruiters who could watch a video agreed with each other that the language skills of applicants were good, except for one. This indicates that fluency in speech cannot be determined using a résumé but can be judged in a video. In the situation where recruiters could only see a video, a moderate correlation was found between their judgements. In the setting with a combination of video and résumé, a weak to moderate correlation was found.

3.4.2.5 Overall Qualifications

When the overall qualifications of applicants were judged, a high level of agreement was found for the recruiters using only résumés. For two applicants, the scores on the five items were exactly the same for both recruiters. For the other applicants, the differences in judgements were at most one point per item. This is not surprising, because recruiters are used to scanning résumés systematically for an applicant's qualifications. Recruiters who judged videos had more difficulties in their judgements. Their ratings were only moderately correlated. An explanation for this could be that some applicants referred to their work or educational experience in their videos. The agreement between recruiters who judged the combination of résumé and video showed no relation between their ratings. In Table 3.4, an overview of the levels of correlation between the recruiters' judgements is given.

It is in line with our expectations that the judgement of intelligence and overall qualifications shows the highest level of agreement when a résumé is used and that motivation, leadership and interpersonal skills can be judged better using a video. However, in the situation where recruiters were provided with all available information, the agreement between them was low. This is an indication that it was difficult for them to make an accurate judgement. An explanation for our finding could be that recruiters had difficulty selecting the most appropriate medium (résumé or video) to judge certain attributes. The fact that the order of items in the questionnaire was randomised required them to constantly switch from one attribute to another, which would also require switching attention from video to résumé and vice versa. It could therefore be that the experimental design caused low agreement between recruiters. Organisations that plan to use videos in

TABLE 3.4

Overview of the Correlations between Recruiters' Judgements

Attribute	Résumé	Video	Résumé-video
Intelligence	Moderate	Weak	Weak
Motivation	Weak to moderate	Moderate	Weak
Leadership skills	Unable to judge	Strong	Weak
Interpersonal skills	Unable to judge	Moderate	Weak to moderate
Overall qualifications	Strong	Moderate	No correlation

their pre-selection process should be aware that judging all applicant characteristics similarly could increase complexity. In such a case, it might be better to judge soft criteria after a résumé pre-selection on hard criteria has been done.

3.4.2.6 Effect of Medium on Decision to Invite for Interview

The recruiters who used résumés to evaluate applicants gave them all a neutral or positive overall evaluation. Both recruiters would have invited everyone for an interview. Recruiters judging videos gave neutral or positive judgements about three applicants and would have invited them. The other two applicants were judged negatively by both recruiters, who indicated a lack of interest in meeting them. In the situation involving a combination of video and résumé, the three applicants who passed pre-selection in the other situations were judged neutral to positive in this setting, too, and would have been invited. The evaluations of the two applicants who got negative judgements based on their video fell between the negative judgement for the video and the neutral to positive judgements for their résumés. One applicant would have been invited by both recruiters. The other would have been invited by only one recruiter. This illustrates that a poor video can be compensated by a good résumé.

3.4.2.7 Effect on Video Performance

The applicants submitted their application before a career fair at which they had the opportunity to meet recruiters from the participating company. A formal procedure was not started for two candidates. The reason for this is unknown. Candidate 3, who was rated highly during the experiment and would have been invited by all six recruiters, performed poorly during an interview at the fair. Candidate 4, who had a good résumé and a poor video according to the experiment, was not invited for an interview based on his résumé, surprisingly enough. Candidate 5 had a telephone interview and was invited for a face-to-face interview. The applicant cancelled the appointment because he had found a job elsewhere.

Our results are too limited to give an indication of the value of résumés and videos as a predictor of interview performance. The example of candidate 3 shows that flawlessly passing the pre-selection phase is no guarantee of a good performance in a face-to-face interview.

The second research step confirmed the interview findings to some extent. It indeed seems that résumés can be used to assess hard criteria but not soft skills, and that videos can be used to get an idea of someone's soft skills. However, when recruiters can make use of both a video and a résumé, their judgements become less accurate. Our explanation for this finding is that the situation became too complex, making it difficult for the recruiters to use the correct source of information. Because the design of the experiment

possibly increased complexity, it is not known whether judging a combination of video and résumé is difficult in real situations, too.

3.5 Discussion

By means of mixed-method research, we explored the consequences of using web-based video interviews in pre-selection. The results indicate that respondents perceive that the quality and efficiency of the selection process can be improved by implementing video interviews for the pre-selection of applicants. Here, we discuss the limitations of our approach, reflect on the insights we have gained, and suggest future research needs and directions.

Although our study provided interesting insights into the use of web-based video interviews, it has several limitations that in turn stress the strengths of the study. It should be noted once again that our research is exploratory, and the results only give insight into our respondents' perceptions. Therefore, no absolute conclusions can be drawn from our findings.

Due to the nature of our study, the findings cannot be generalised to the entire population of organisations using video interviews in their selection processes. However, the findings provide several clear indications.

Another limitation is that our results only uncover the initial perceptions of respondents about the consequences of using video interviews, which makes it impossible to draw definitive conclusions. We relied on the willingness of respondents to give complete and accurate answers. Although we felt that the respondents gave correct answers, some of them may have hesitated, perhaps because they could not give their responses anonymously. We tried to overcome this limitation by clarifying the objectives of the research and by elaborating on how their responses would be used.

Another limitation was the interpretation of interview responses. Since interviews generally provide much information that is hard to categorise, the strength of research depends on a correct interpretation of the responses. All interviews were conducted and interpreted by one interviewer, who had only limited experience. This could have led to biased, incorrect interview results.

To overcome these limitations, another method was used in the form of an experiment that provided support for the interview findings. However, the second research step had several limitations, too.

First, the overall design of the experiment was limited. It was executed within one organisation with a low number of candidates as well as a low number of recruiters. It provides some additional insights into the consequences of using video interviews, but only as a supplement to the findings from the interviews. The experiment was thus limited, not only in

sample size but also in design. Although analysing inter-rater agreement could give an indication of the reliability of their judgements, it does not confirm that the judgements were valid. The research would have been strengthened if the pre-selection judgements could have been compared with the outcomes of face-to-face interviews. In addition, using a statistical measure with such a limited sample is a strong limitation for exploratory research. It gives an indication of the reliability of judgements, but no more than that.

Although the sequential research design was used to strengthen the research, and results from both empirical stages are in line with each other, its limitations should be recognised.

3.6 Conclusion

3.6.1 Applicant Attraction

The implementation of video interviews during pre-selection results in a reduction in the number of applicants and, in some situations, an increase in applicant quality. Some candidates who did not apply indicated that they did not possess a webcam. Applicants who applied said that they were nervous and that recording a video interview was difficult to do. Recruiters received questions from the applicants asking whether they were selecting by looks instead of personality.

Different explanations can be given for why a reduction in applications is seen. Williamson et al. (2003) found that a website designed to select was less attractive for applicants. Furthermore, the outcome expectancies of applicants were related to their intention to apply. Because multiple applicants indicated that they were nervous about recording a video and that it was difficult to do, their outcome expectations were likely to be low as well, resulting in a lower intention to apply. The fact that different applicants asked whether they were judged on their looks gives an indication that they lacked a clear understanding of the system. It is therefore not unlikely that the accuracy of video interviews as a selection tool is questionable. According to Reeve and Schultz (2004), intentions to apply are related to the applicant's perception of the accuracy of the selection process. Although we do not know the exact reason for the reduction in applications, multiple influential factors could be given.

3.6.2 Applicant Quality

Another effect that was observed was an increase in applicant quality. Although different theoretical notions exist indicating that the implementation of e-recruitment systems results in a large pool of low-quality applicants,

no underlying theory can explain why changes in quality are seen. The interviewed recruiters did have some ideas.

One explanation was that candidates who lacked certain communication skills would be reluctant to apply. Another was that applicants have to make additional effort in their application by arranging a webcam or preparing for the interview. This would discourage candidates who are not highly motivated to apply. The recruiters' perception was that unmotivated applicants were generally unsuitable candidates. Both explanations indicate that organisational attractiveness is not the only important reason for receiving a high number of applications. The effort candidates have to put into an application also affects their number. Even more interesting is the fact that the effort is related to the quality of those who apply.

The implementation of video interviews thus results in lower attractiveness because of (1) a selection-oriented instead of a recruitment-oriented website, (2) lower outcome expectations because candidates do not fully understand the system, (3) applicants questioning the accuracy of video interviews as a selection tool, and (4) the additional effort candidates have to make to record a video. It seems that the fourth reason is moderated by the quality of the candidates. The effect of this moderation is that candidates are less likely to apply when additional work is required to do so, but that this effect is lower for high-quality candidates.

3.6.3 Quality of Pre-Selection Decisions

The respondents revealed that the quality of pre-selection decisions increased when video interviews were used. This was in line with expectations based on claims from technology providers and media richness theory (Daft and Lengel, 1986). Our expectation was that the media richness of videos interviews would be higher than that of résumés, which would result in better decisions. The experiment revealed that pre-recorded video interviews are not necessarily richer in information than résumés but provide recruiters with different information. Résumés provide information about the intelligence and overall qualifications of applicants. Video interviews can be used to judge motivation, leadership and interpersonal skills. Because the applicants were not asked about hard criteria such as education and work experience during video interviews, it is difficult for recruiters to judge these attributes using only a video. When video interviews are used in pre-selection, both résumés and videos are available to recruiters. In these situations, recruiters are able to judge more attributes than when only résumés are available. The combination of video and résumé thus has a greater media richness, resulting in better decisions. During our experiment, the selection decisions of those recruiters who used both a video and a résumé were not better, however, probably due to the design of the experiment. This is an indication that the way in which pre-selection is done influences its effectiveness.

3.6.4 Trade-Off between Quality and Quantity of Applicants

Our results indicate that it is indeed possible to make a trade-off between the number of applicants who are invited for the selection stage and their quality. This is in line with the view of Thompson et al. (2008). In one situation, however, the result of the selection process led to many more suitable candidates being found than there were job positions available. This may have been caused by inexperience with the use of video interviews, since they were being used for the first time within that organisation. The expectation was that next time a better trade-off could be made, and that the current result was more or less an implementation issue.

3.6.5 Future Research

Although our research has several limitations, the goal of exploring the consequences of the usage of video interviews has been achieved. However, different issues need further investigation. Results showed that a large reduction in the number of applications is seen at several organisations. The respondents' perception is that unsuitable candidates are filtered out. Additional research should reveal why this reduction is seen, what its effect is on the number and quality of applications, and how organisations can deal with it.

The experiment indicated that applicants' soft skills can be judged using a video. Future research is needed to analyse exactly which competencies can be derived from a video and how reliably they can be judged. Our results indicated that it is possible to train to perform better in a video interview. Different respondents revealed that they had seen applicants who had prepared their interview answers. The exact effects of training to make a good impression during a video interview are not known. Therefore, the effect of impression management methods on the reliability of judgements should be incorporated in future research. The reliability of selection decisions based on pre-recorded video interviews should not only be compared with other measurement tools; their predictive value for interview outcomes and for job performance should be analysed as well. This will give a better understanding of how video interviews can be used in pre-selection, and what their impact is on the selection process.

Together with a study on the cost effects of reducing the number of face-to-face interviews, it will provide a better understanding of the effect of using video interviews on the efficiency and effectiveness of the selection process.

Appendix A: Overview of Possible Consequences of Using Video Interviews for Job Selection as Reported in Different Studies

Study	Consequences						
	Cost effectiveness	Applicants' quality	Time to hire	Impression management	Applicant perceptions and organisational attraction	Interview structure	Recruiter perceptions
Allen et al. (2007)					x		
Anderson (2003)	x	x		x	x	x	
Anderson and Witvliet (2008)					x		
Barrick et al. (2009)		x		x		x	
Bartram (2000)	x	x					
Bauer et al. (2004)	x	x			x		
Bauer et al. (2006)					x	x	
Beckerea (2010)	x	x	x		x		
Berry et al. (2007)	x	x			x		
Blackman (2002)	x					x	
Bolino et al. (2008)				x		x	
Braddy et al. (2006)		x			x		
Braddy et al. (2008)					x		
Celani et al. (2008)					x	x	
Chapman and Rowe (2002)					x	x	
Chapman and Webster (2003)	x	x					
Chapman and Webster (2006)					x		
Chapman and Zweig (2005)					x	x	
Chapman et al. (2003)	x				x	x	

(Continued)

(Continued)

Study	Consequences						
	Cost effectiveness	Applicants' quality	Time to hire	Impression management	Applicant perceptions and organisational attraction	Interview structure	Recruiter perceptions
Chapman et al. (2005)					x		
Chen et al. (2008)		x				x	
Coher et al. (2000)	x	x					
Cronin et al. (2006)	x						
Elgin and Clapham (2004)					x		
Ettinger and Wilderom (2008)						x	
Ettinger and Wilderom (2008)					x		
Ettinger et al. (2008)	x						
Ettinger et al. (2009)	x	x				x	
Frost (2001) white paper!				x			
Fullwood (2007)		x					
Gilliland (2004)		x			x		
Groot and Gooty (2009)	x	x		x		x	
Holm (2009)	x		x		x		
Hoye et al. (2007)	x						
Iddekinge et al. (2007)		x		x		x	
Jansen and Ettinger (2009)					x		
Jones and Dages (2003) lit. review		x			x		
Jones et al. (2002)	x						
Kim and O'Connor (2009)	x	x					

(Continued)

(Continued)

Study	Consequences						
	Cost effectiveness	Applicants' quality	Time to hire	Impression management	Applicant perceptions and organisational attraction	Interview structure	Recruiter perceptions
Kluemper and Rosen (2009)		x					
Langan (2000)							
Lee (2005)	x				x		
Lee (2007)	x	x					
Lievens and Harris (2003)	x	x			x		
Lievens and Peeters (2008)				x		x	
Lievens et al. (2002)							
Ma and Allen (2009)					x	x	
Macan (2009)				x		x	
McCrary (2000)	x						
Marchal et al. (2007)					x		
Millar (2010)	x						
Mohamed et al. (2003)		x	x				
Nickel and Schaumburg (2004)					x		
Pfieffelman et al. (2010)	x				x		
Ployhart (2006)	x	x		x	x	x	
Ployhart and Harold (2004)					x		
Posthuma et al. (2002)		x		x		x	
Potosky (2008)	x	x		x			

(Continued)

(Continued)

Study	Consequences						
	Cost effectiveness	Applicants' quality	Time to hire	Impression management	Applicant perceptions and organisational attraction	Interview structure	Recruiter perceptions
Potosky and Bobko (2004)	x	x			x		
Putwain et al. (2010)					x		
Reeve and Schultz (2004)					x	x	
Schreurs et al. (2005)					x		
Searle (2006) abstract	x	x	x		x		
Sieverding (2009)				x	x		
Silvester and Anderson (2003)	x	x		x			
Silvester et al. (2000)	x	x					
Sing and Finn (2003)	x	x					
Soman and Madan (2010)		x		x			
Stone et al. (2007)		x			x		
Straus et al. (2001)	x	x					
Sylva and Mol (2009)	x				x		
Thompson et al. (2008)	x	x			x		
Tsai et al. (2005)		x		x		x	
Van Iddekinge et al. (2006)	x	x		x	x	x	
Wallace et al. (2000)							
Wegge (2006)					x		
Williamson et al. (2003)		x			x		
Williamson et al. (2010)		x			x		

Appendix B: Overview of Empirical Findings Related to the Usage of Video Interviews in Selection Processes

Study	Research Goal	Methods	Key Findings
Allen et al. (2007)	Test theoretical model of web-based applicant attraction	Survey, <i>n</i> = 814 students	Job information (directly) and organisation information (indirectly) related to intentions to pursue employment
Anderson and Whittlet (2008)	Compare reactions to different selection methods, different countries	Questionnaire, 167 students	Popular: interviews, work sample tests, resumes; not popular: graphology, personal contacts and honesty / integrity tests Relationships found, unstructured interview is particularly affected
Barrick et al. (2009)	Analyse relationships between self-presentation tactics and ratings of interview and job performance	Meta-analysis	
Bauer et al. (2004)	Examine reactions to face-to-face (FTF), interactive voice response (IVR) and cognitive ability test (CAT) interviews	317 students completing 1 screening procedure	IVR rated lower for three procedural justice factors, not for others
Bauer et al. (2006)	Examine influence of personal information privacy concerns and computer experience on reactions to online screening	Simulating application (<i>n</i> = 117) and field sample (<i>n</i> = 396)	Procedural justice and computer experience mediated between motivation, attraction and organisational intentions, but computer experience not in the laboratory sample
Beckera (2010)	Examine effect of job offer timing on offer acceptance, performance and turnover	Archival study, field data, <i>n</i> = 3012	Early offers more likely to be accepted, no differences in performance and turnover
Blackman (2002)	Compare accuracy of personally judgement for telephone and face-to-face	<i>n</i> = 33 for FTF, <i>n</i> = 27 for telephone	Face-to-face was significantly more accurate
Braddy et al. (2006)	Examine effects of recruitment website on viewers' perceptions of organisational culture	48 psychology students answering questions about website and culture	Both website design and information about values, policies awards and goals affected culture perceptions

(Continued)

(Continued)

Study	Research Goal	Methods	Key Findings
Braddy et al. (2008)	Test whether recruitment websites influence viewers' opinion of recruiting organisations	Pretest-Posttest, 217 students	Viewing website affected organisational favourability, image and attractiveness
Chapman and Rowe (2002)	Analyse effect of videoconference technology and interview structure on employment interview	Experiment, <i>n</i> = 92 job applicants	F2F higher attraction and satisfaction with less structured interviews, video higher satisfaction in structured interviews
Chapman and Webster (2003)	Technology use, what technology, goals, results and organisational factors that lead to adopting technology	Survey, HR professionals from 125 organisations	Technology use is in a state of flux
Chapman and Webster (2006)	Test whether other factors such as procedural justice affect applicant's reactions	Longitudinal field study, <i>n</i> = 588	Signal and expectancy affected applicant's reactions
Chapman and Zweig (2005)	Examine antecedents and consequences of structured interview	2 sample field study, 812 interviewees, 592 interviewers	Interviewers with formal training and interviewers with selection focus use more structure, interviewers were confident about identifying the best candidates regardless of structure, applicants reacted negatively to difficulty of structured interviews, procedural justice not affected
Chapman et al. (2003)	Explore reactions to face-to-face and technology (video/phone)-mediated interviews	Field study, 802 applicants	Face-to-face more fair and higher job acceptance intentions, perceived outcomes higher for FTF and phone, self-monitoring moderated relationship between medium and fairness perceptions
Chapman et al. (2005)	Analyse correlates of recruiting outcomes	Meta-analysis	Attraction outcomes predicted by job-organisation characteristics, recruiter behaviours, perceptions of the process, hiring expectancies and perceived fit

(Continued)

(Continued)

Study	Research Goal	Methods	Key Findings
Chen et al. (2008)	Examine the influence of interview-related and situational factors on interviewer reactions to highly structured interviews	Questionnaire, 292 interviewers	Analytic interviewers and interviewers in firms with high interview norms reacted positively to HR information systems (HIS)
Elgin and Clapham (2004)	Examine electronic versus paper résumé submitting effects	100 students reviewing résumés	Paper résumé applicant more friendly, electronic more intelligent, technologically advanced and possessing better qualifications
Ettinger et al. (2008)	Explore innovation recruiting, re-use of portal	Lead user method, 60 applicants, 15 lead users	Community and social network features, treating various user groups differently pays off
Ettinger et al. (2009)	Explore service quality criteria of web recruiters	73 interviews and content analysis	Quantity of applicants is most important
Fullwood (2007)	Comparing face-to-face and video	48 students completing mind reading task	Video participants less likeable and intelligent
Furmueller et al. (2009)	Explore why applicants stay connected to a recruitment portal	Interviews, 60 applicants, 3 system analysts and 5 programmers	Niche recruiting is important, pay attention to users' social and psychological requirements
Groot and Gooy (2009)	Examine relations between nonverbal cues and interview ratings	110 managers rated by 26 HR people	Nonverbal cues are important for interview ratings
Hoye et al. (2007)	Compare web-based testimonials vs. word-of-mouse	108 interviews with nurses	Word-of-mouse associated with higher attractiveness, applicants more attracted when testimonials provided information about individuals instead of information about the organisation
Iddekinge et al. (2006)	Comparing characteristics of FTF and video ratings	113 students, rated FTF and video	FTF ratings higher than videotaped interviews of the same interviewees

(Continued)

(Continued)

Study	Research Goal	Methods	Key Findings
Iddekinge et al. (2007)	Study antecedents of impression management use and effectiveness in structured interviews	132 students, simulated interviews	Impression management (IM) had less effect in strong situations
Jansen and Ettinger (2009)	Explore expectations and limitations of e-recruiting services	8 students	Lack of personal communication and contact
Kim and O'Connor (2009)	Examine the status and issues in implementation of e-recruitment systems	Surveys, 10 US states	Differences in adoption, challenges were budget constraints, technical difficulties and HR staff adapting to change
Kluemper and Rosen (2009)	Examine feasibility of social networking information in selection decisions	63 raters judging 6 subjects	Judges were consistent and able to distinguish high from low performers
Lievens and Peeters (2008)	Examine interviewers' sensitivity to impression management	55 students and 18 professional interviewers	Importance of IM was relatively small as compared with job-related competencies, some effect for interview format
Lievens et al. (2002)	Study trends and challenges in personnel selection	26 HR representatives	Labour market shortages, technological developments, applicant perceptions and construct-driven approaches were major trends
McCroy (2000)	Describing implementation of applicant tracking	Case study	Description of the implementation of applicant tracking system in the state of Nebraska
Marchal et al. (2007)	Study market intermediaries in large companies	Observing intermediaries and comparing job ads	Information available to applicants is subject to filtering, search engine toolkits have considerable impact on ad content
Millar (2010)	Examine whether cruise companies make use of internet recruiting	Content analysis of websites	e-recruiting methods are used, but not to their fullest capability
Nickel and Schaumburg (2004)	Explore importance of perceived privacy to evoke user trust and self-disclosure	Experiment, 2 websites, 12 participants	Interface conveying a high level of privacy increased user trust

(Continued)

(Continued)

Study	Research Goal	Methods	Key Findings
Pfiffelmann et al. (2010)	Study job seeker attraction to organisations, reactions to online recruiting	120 job seekers judging corporate websites	Usability and person-organisation fit were positively related to attraction, with P-O fit mediating the relation between usability and attraction. Only found for women
Potosky and Bobko (2004)	Compare between paper and internet-based selection tests	65 students	Modest degrees of cross-mode equivalence
Putwain et al. (2010)	Examine relations between personal characteristics and test anxiety	175 students reporting data	Relationships found between achievement goals and anxiety
Reeve and Schultz (2004)	Examine whether individuals use selection process information in job ads in decisions to apply	Questionnaires, 207 students	Individuals do make use of selection process information when making job-pursuit evaluations
Schreurs et al. (2005)	Test effects of face-to-face contacts when attracting applicants for the military	Surveys, 408 potential applicants	Positive relationships between perceptions of the recruiter and intentions to apply
Sieverding (2009)	Study display rules and emotional suppression in an employment interview	74 students, simulated interview, post-interview questionnaire	Suppressors evaluated as more competent, women's emotional suppression related to depressed state after interview
Silverster and Anderson (2003)	Compare face-to-face and telephone interviews	31 applicants, face-to-face and telephone interview	More causal attributions in telephone interview, personal attributions associated with higher ratings in phone interviews, attribution to global causes in FTF interview results in lower rating
Silverster et al. (2000)	Compare face-to-face and telephone interviews	70 candidates, receiving both FTF and phone interview	Applicants are rated lower in phone interviews, candidates who first have a phone interview perform better in face-to-face interview

(Continued)

(Continued)

Study	Research Goal	Methods	Key Findings
Soman and Madan (2010)	Test predicting interview outcomes from voice characteristics	26 candidates, interviews	Successful candidates have a characteristic speaking style, interview outcomes can be predicted
Straus et al. (2001)	Explore effects of interview medium on ratings	59 participants, video, phone and FTF interviews	Ratings higher for telephone versus FTF, video not different from FTF, applicants react less favourably to video when compared with FTF
Sylvia and Mol (2009)	Study applicant reactions to web-based recruitment and selection	Field study, 1360 applicants	External (as opposed to internal), Belgian (as opposed to Dutch) and internet-savvy candidates were more satisfied with the online procedure
Thompson et al. (2008)	Influence of website design on job seekers	182 participants reviewing online job ad	Formatting more important than usability, impressions of the employer mediated relationship between satisfaction with the website and willingness to pursue employment
Tsai et al. (2005)	Examine impression management: moderating roles of interview structure, customer contact requirements and interview length	151 job applicants	More structured interview leads to weaker relation between IM and evaluation, same for low customer contact and longer interviews
Wallace et al. (2000)	Study legality of recruitment websites	Content analysis of websites	Most websites not in line with equal employment opportunity (EEO) guidelines
Wegge (2006)	Test emotional consequences of videoconferencing	2 experiments, n = 88 and n = 60	Seeing one's own picture leads to negative reactions
Williamson et al. (2003)	Test website effects on intentions to pursue employment	252 students, evaluating websites	Website orientation and outcome expectancy influenced organisational attractiveness
Williamson et al. (2010)	Test relationships between firm reputation, website attributes and applicant attraction	277 students, evaluating websites of 159 firms	Amount of company and job information, website vividness and firm's reputation have a three-way interactive effect on applicants' perceptions and thus website effectiveness

References

- Allen, D., Mahito, R., and Otondo, R. (2007). Web-based recruitment: Effects of information, organizational brand, and attitudes toward a Web site on applicant attraction. *Journal of Applied Psychology*, 92(6), 1696-1708.
- Anderson, N. (2003). Applicant and recruiter reactions to new technology in selection: A critical review and agenda for future research. *International Journal of Selection and Assessment*, 11(2-3), 121-136.
- Anderson, N. and Witvliet, C. (2008). Fairness reactions to personnel selection methods: An international comparison between the Netherlands, the United States, France, Spain, Portugal, and Singapore. *International Journal of Selection and Assessment*, 16(1), 1-13.
- Barrick, M., Shaffer, J., and DeGrassi, S. (2009). What you see may not be what you get: Relationships among self-presentation tactics and ratings of interview and job performance. *Journal of Applied Psychology*, 94(6), 1394-1411.
- Bartram, D. (2000). Internet recruitment and selection: Kissing frogs to find princes. *International Journal of Selection and Assessment*, 9(6), 261-274.
- Bauer, T., Truxillo, D., Paronto, M., Weekley, J., and Campion, M. (2004). Applicant reactions to different selection technology: Face-to-face, interactive voice response, and computer-assisted telephone screening interviews. *International Journal of Selection and Assessment*, 12(1-2), 135-148.
- Bauer, T., Truxillo, D., Tucker, J., Weathers, V., Bertolino, M., Erdogan, B., and Campion, M. A. (2006). Selection in the information age: The impact of privacy concerns and computer experience on applicant reactions. *Journal of Management*, 32(5), 601-621.
- Becker, W. J., Connolly, T., and Slaughtier, J. E. (2010). The effect of job offer timing on offer acceptance, performance, and turnover. *Personnel Psychology*, 63(1), 223-241.
- Bertling, M., Brady, S.J., Bromley, R.G., Demathieu, G.R., Genise, J., Mikuláš, R., and Uchman, A. (2016). Names for trace fossils: a uniform approach. *Lethia*, 39(3), 265-286.
- Blackman, M. C. (2002). The employment interview via the telephone: Are we sacrificing accurate personality judgments for cost efficiency? *Journal of Research in Personality*, 36(3), 208-223.
- Bondarouk, T. (2011). Theoretical approaches to E-HRM implementations. In: T. Bondarouk, H. J. M. Ruël, and J. C. Looise (Eds.), *Electronic HRM in Theory and Practice*, pp. 1-21. Bingley, UK: Emerald Group.
- CedarCrestone (2012-2013). HR Systems Survey White Paper, 15th Annual Edition.
- Chapman, D. S. and Rowe, P. M. (2001). The impact of videoconference technology, interview structure, and interviewer gender on interviewer evaluations in the employment interview: A field experiment. *Journal of Occupational and Organizational Psychology*, 74(3), 279-298.
- Chapman, D. and Rowe, P. (2002). The influence of videoconference technology and interview structure on the recruiting function of the employment interview: A field experiment. *International Journal of Selection and Assessment*, 10(3), 185-197.
- Chapman, D., Uggerslev, K., Carroll, S., Piasentin, K., and Jones, D. (2005). Applicant attraction to organizations and job choice: A meta-analytic review of the correlates of recruiting outcomes. *Journal of Applied Psychology*, 90(5), 928-944.
- Chapman, D., Uggerslev, K., and Webster, J. (2003). Applicant reactions to face-to-face and technology-mediated interviews: A field investigation. *Journal of Applied Psychology*, 88(5), 944-953.
- Chapman, D., and Webster, J. (2003). The use of technologies in the recruiting, screening, and selection processes for job candidates. *International Journal of Selection and Assessment*, 11(2-3), 113-120.
- Chapman, D. S., and Zweig, D. I. (2005). Developing a nomological network for interview structure: Antecedents and consequences of the structured selection interview. *Personnel Psychology*, 58(3), 673-702.
- Chapman, D., and Webster, J. (2006). Toward an integrated model of applicant reactions and job choice. *International Journal of Human Resource Management*, 17(6), 1032-1057.
- Chen, Y., Tsai, W., and Hu, C. (2008). The influences of interviewer-related and situational factors on interviewer reactions to high structured job interviews. *International Journal of Human Resource Management*, 19(6), 1056-1071.
- Cole, M. S., Field, H. S., Giles, F. G., and Harris, S. G. (2004). Job type and recruiters' inferences of applicant personality drawn from resume biodata: Their relationships with hiring recommendations. *International Journal of Selection and Assessment*, 12(4), 363-367.
- Daft, R. L., and Lengel, R. H. (1986). Organizational information requirements, media richness and structural design. *Management Science*, 32(5), 554-571.
- Elgin, P. and Clapham, M. (2004). Attributes associated with the submission of electronic versus paper resumes. *Computers in Human Behavior*, 20(4), 535-549.
- Ettinger, E., Wilderom, C., and Ruël, H. (2009). Service-quality criteria of web recruiters: A content analysis. In *Proceedings of the 2009 42nd Hawaii International Conference on System Sciences (HICSS)*, pp. 1-10. Waikoloa, Big Island, Hawaii Jan. 5-8. ISBN: 978-0-7695-3450-3.
- Ettinger, E., Wilderom, C., and Van Dick, R. (2008). Transforming exchange-based job boards into lasting career communities. In *Business Information Systems Conference (Workshops)*, pp. 109-116. Innsbruck, Austria, May 6.
- Frost, M. (2001). Video interviewing: Not yet ready for prime time. *HR Magazine*, 2001 (August), 93-98.
- Fullwood, C. (2007). The effect of mediation on impression formation: A comparison of face-to-face and video-mediated conditions. *Applied Ergonomics*, 38(3), 267-273.
- Furtmueller, E., Wilderom, C., and Van Dick, R. (2009). Utilizing the lead user method for promoting innovation in e-recruiting. In Bondarouk, T. V., Ruël, H. J. M., Oiry, E., and Guideroni-Jourdan, K. (eds.), *Handbook of Research on E-Transformation and Human Resources Management Technologies: Organizational Outcomes and Challenges*, pp. 252-274. London: IGI Global.
- Hirevue. (2010). The Original Online Video Job Interview. Retrieved on 18 October 2010, from www.hirevue.com.
- Holm, A. (2009). Virtual HRM: A case of e-recruitment. Unpublished chapter, University of Aarhus, Aarhus, Denmark.
- Interviewstudio (2010). Welcome to Interviewstudio. Retrieved on 18 October 2010, from www.interviewstudio.com.
- Jones, J., Brasher, E., and Huff, J. (2002). Innovations in integrity-based personnel selection: Building a technology-friendly assessment. *International Journal of Selection and Assessment*, 10(1-2), 87-97.

- Kim, S., and O'Connor, J. (2009). Assessing electronic recruitment implementation in state governments: Issues and challenges. *Public Personnel Management*, 38(1), 47-66.
- Kluemper, D. H., and Rosen, P. A. (2009). Future employment selection methods: evaluating social networking web sites. *Journal of Managerial Psychology*, 24(6), 567-580.
- Lengel, R. H., and Datf, R. L. (1984). An exploratory analysis of the relationship between media richness and managerial information processing. (No. TR-DG-08-ONR), Texas A&M University, Department of Management, College Station, TX.
- Lievens, F., and Peeters, H. (2008). Interviewers' sensitivity to impression management tactics in structured interviews. *European Journal of Psychological Assessment*, 24(3), 174-180.
- Macan, T. (2009). The employment interview: A review of current studies and directions for future research. *Human Resource Management Review*, 19(3), 203-218.
- Meade, A. W., Johnson, E. C., and Braddy, P. W. (2008). Power and sensitivity of alternative fit indices in tests of measurement invariance. *Journal of Applied Psychology*, 93(3), 568.
- Pfeffeltmann, B., Wagner, S., and Libkuman, T. (2010). Recruiting on corporate web sites: Perceptions of fit and attraction. *International Journal of Selection and Assessment*, 18(1), 40-47.
- Ployhart, R. (2006). Staffing in the 21st century: New challenges and strategic opportunities. *Journal of Management*, 32(6), 868-897.
- Posthuma, R., Morgeson, F., and Campion, M. (2002). Beyond employment interview validity: A comprehensive narrative review of recent research and trends over time. *Personnel Psychology*, 55(1), 1-81.
- Reeve, C., and Schultz, L. (2004). Job-seeker reactions to selection process information in job ads. *International Journal of Selection and Assessment*, 12(4), 343-355.
- Stone, D. L., Deadrick, D. L., Lukaszewski, K. M., and Johnson, R., (2015). The influence of technology on the future of human resource management. *Human Resource Management Review*, 25(2), 216-231.
- Straus, S., Miles, J., and Levesque, L. (2001). The effects of videoconference, telephone, and face-to-face media on interviewer and applicant judgments in employment interviews. *Journal of Management*, 27(3), 363-381.
- Strohmeier, S. (2009). Concepts of e-HRM consequences: A categorisation, review and suggestion. *International Journal of Human Resource Management*, 20(3), 528-543.
- Thompson, L., Braddy, P., and Wiensch, K. (2008). E-recruitment and the benefits of organizational web appeal. *Computers in Human Behavior*, 24(5), 2384-2398.
- Tsai, W., Chen, C., and Chiu, S. (2005). Exploring boundaries of the effects of applicant impression management tactics in job interviews. *Journal of Management*, 31(1), 108-125.
- Van Iddekinge, C., Raymark, P., Roth, P., and Payne, H. (2006). Comparing the psychometric characteristics of ratings of face-to-face and videotaped structured interviews. *International Journal of Selection and Assessment*, 14(4), 347-359.
- Wegge, J. (2006). Communication via videoconference: Emotional and cognitive consequences of affective personality dispositions, seeing one's own picture, and disturbing events. *Human-Computer Interaction*, 21(3), 273-318.
- Williamson, I., Lepak, D., and King, J. (2003). The effect of company recruitment web site orientation on individuals' perceptions of organizational attractiveness. *Journal of Vocational Behavior*, 63(2), 242-263.

4

Exploring the Uses and Gratifications of Digital Tools as Knowledge Transfer Media in Organisations

Laura Zapata-Cantú, Teresa Treviño, Flor Morton and José Luis Pineda

CONTENTS

4.1	Introduction.....	88
4.2	Literature Review.....	89
4.2.1	Knowledge Transfer in Organisations.....	89
4.2.2	Knowledge Transfer Mechanisms: Face-to-Face and Technological.....	89
4.2.3	Motivations of Using Digital Tools and Uses and Gratifications Theory.....	91
4.3	Research Questions.....	92
4.4	Methodology.....	93
4.5	Results.....	93
4.5.1	Formal Digital Tools.....	94
4.5.1.1	Email.....	94
4.5.1.2	Video Conference Software (Skype for Business and WebEx).....	95
4.5.1.3	Internal Collaboration Platform.....	95
4.5.1.4	File Hosting in the Cloud (OneDrive).....	96
4.5.2	Informal Digital Tools.....	96
4.5.2.1	Instant Messaging Application for Smartphones (WhatsApp).....	96
4.5.2.2	Video/Text Chat Services (Skype).....	97
4.5.2.3	Other Digital Tools.....	98
4.5.3	Usage Situations.....	98
4.5.4	Integration of Digital Tools and Changes to the Office's Physical Space.....	99
4.6	Discussion.....	100
4.6.1	Motivations to Use Formal and Informal Digital Tools.....	100
4.6.1.1	Information Transfer.....	101
4.6.1.2	Convenience.....	101
4.6.1.3	Social Interaction.....	101