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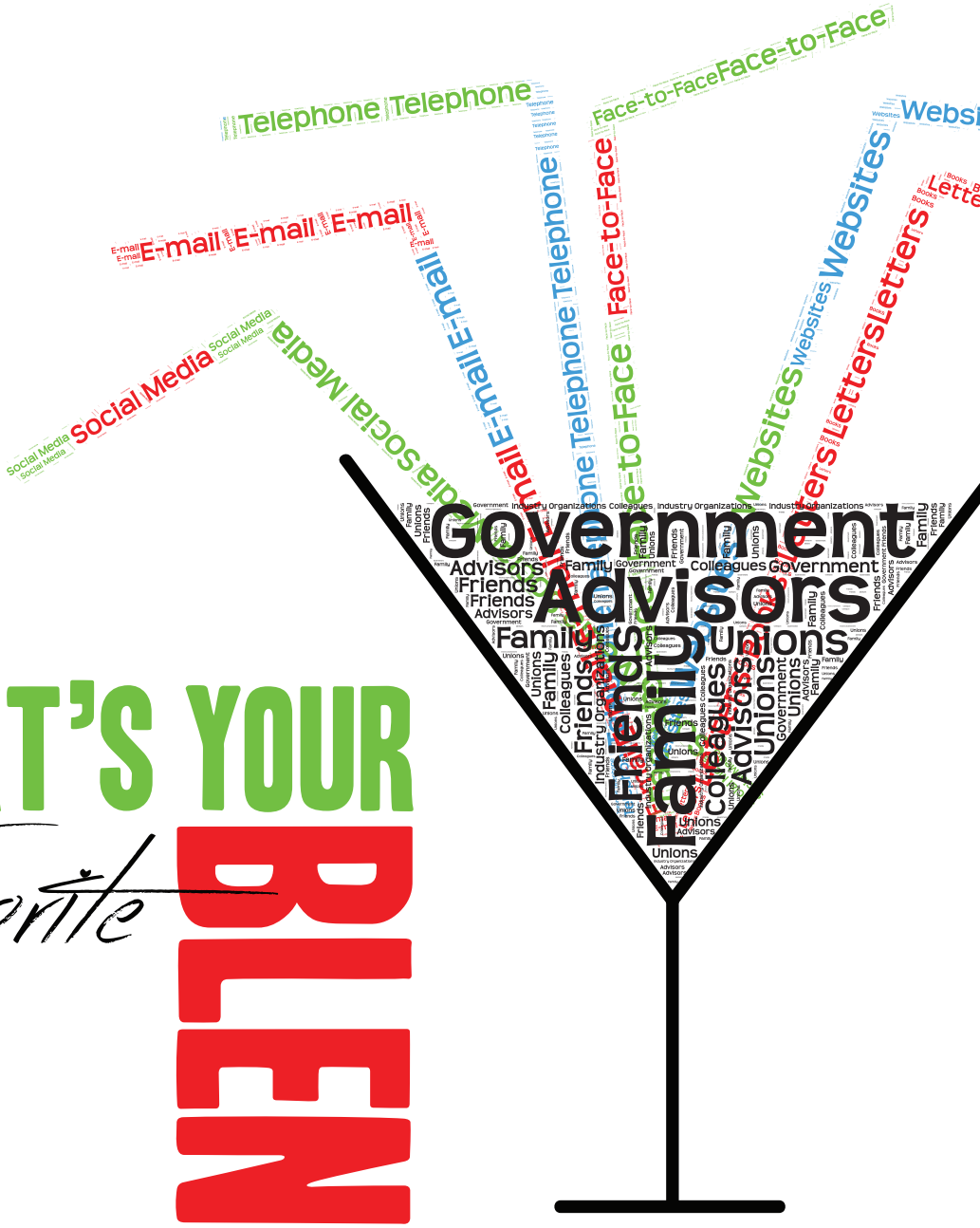

ANALYZING SOURCE AND CHANNEL CHOICES IN BUSINESS-TO-GOVERNMENT SERVICE INTERACTIONS

YVON VAN DEN BOER

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Yvon van den Boer

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DISSERTATION

to obtain
the degree of doctor at the University of Twente,
on the authority of the rector magnificus,
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on account of the decision of the graduation committee,
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by

Yvon Johanna Philomena van den Boer

Born on the 13th of November, 1985
in 's-Hertogenbosch, The Netherlands

This dissertation has been approved by promotor **prof. dr. J.A.G.M. van Dijk** and assistant promotor **dr. W.J. Pieterson**

CONTENTS

PART I

INTRODUCTION & BACKGROUND

CHAPTER 1

GENERAL INTRODUCTION

In the Netherlands, over a million small and medium-sized businesses (SMEs) regularly have to deal with various types of complex government requirements. One of the most well-known examples in this context involves managing tax problems. To cope with these problems, SMEs have various potential information sources in their environment from which to choose. The myriad sources can be coupled with an increasingly wide variety of channels through which information can be obtained. This can be illustrated by the following example:

Imagine that you are working as an entrepreneur and are self-employed. Your business is performing very well, and you have plans to expand. In such a situation, it might be desirable to alter the legal form of your business; however, this differs from business to business. You have various options to obtain information on this topic. For example, you can visit the website (channel) of the Netherlands Tax and Customs Administration (source), seek advice in a face-to-face conversation (channel) with your accountant (source), or discuss the topic via the telephone (channel) with a close friend (source) or even with a number of friends (sources) via Facebook (channel). What would you do?

For several decades, governments have sought suitable service delivery strategies to interact with businesses regarding these complex matters as efficiently and effectively as possible. For example, research on e-government and multichannel management has contributed to current strategies. The primary aim of these strategies is to guide information seekers to electronic channels, such as a website, which are assumed to be less expensive than traditional channels such as the telephone and face-to-face communication. At present, however, the use of the more costly channels remains high (e.g., Pieterson & Ebbers, 2008; OECD, 2012). This calls for new insights to develop revised strategies for efficient and effective service delivery.

1.1 RELEVANCE, GOALS AND CONTRIBUTION

The growing number of available channels and the increasing role of other information sources have made the information flow between governments and businesses increasingly complex. As a result, it will become more difficult for governments to maintain high levels of service. This will particularly be the case if businesses do not primarily rely on the government for accurate and reliable information but instead turn to other sources because they are now easier to access than before (i.e., through the rise of new and social media). Furthermore, the increasing availability of service channels limits the efficiency with which governments can provide services to their clients (i.e., citizens and businesses). These considerations lead to the question of how governments should address the availability of numerous information sources and channels.

Thus, the main practical goal of this dissertation is to provide insights into how and why businesses use the different sources and channels they have at their disposal to complete their tasks. These insights could help governments in the creation of more efficient and effective service delivery strategies.

This situation is further complicated by a lack of theories that can help us to understand a) why businesses use certain available sources and channels and b) what the interdependencies between sources and channels are (i.e., do businesses always use the same source-channel combination, or is interdependency triggered by certain events?). Although theories exist that can help us to understand a) why individuals use certain communication channels (or 'media') (e.g., Media Richness Theory (Daft & Lengel, 1984; 1986)) and b) the processes by which information sources are selected (e.g., Byström and Järvelin's model of information seeking (1995)), there are two main drawbacks (as will be discussed in greater detail in part 2).

The first drawback is the lack of unified or generalizable theories and research outcomes. There is no single theory that is up to date (e.g., including social media) that prescribes or describes channel or source selection processes and has been validated. The second is a lack of integration among theories focusing on channel and source selection processes. Some researchers have mentioned both concepts (e.g., Shannon and Weaver's (1949) model of communication), while others have noted the existence of source-channel interaction (e.g., Saunders & Jones, 1990) or investigated the relationship between the source and channel (e.g., Christensen & Bailey, 1997), but this has not resulted in a validated theory or empirical replication.

Given the lack of relevant theories, the theoretical goal of this dissertation is to provide insights into the selection processes of both channels and sources and pave the way for the creation of an integrated theory. Such integration would enable us to study the similarities, differences, and interdependencies between both selection processes in the dynamic context of information seeking. All of the foregoing leads to the following research question and sub questions that jointly form the core questions of this dissertation:

Which factors are the most important determinants of source and channel choice processes in the context of business-to-government service interactions?

(a) To what extent are source and channel choice determined by the same underlying factors?
(b) How do channel and source choice relate to each other?
(c) Which factors influence the number of sources and channels chosen in a single information-seeking process?

Before discussing the goals and corresponding research questions of this dissertation in greater detail, this chapter will first discuss the context of the study by defining and explaining the main concepts (sources and channels) that play a role in the research, as well as the scope of the work.

1.2 THE CONCEPTS SOURCE AND CHANNEL

A prerequisite for studying the similarities, differences and interdependencies between the source and channel selection processes is to clearly distinguish and conceptualize sources and channels. This dissertation contributes to the development of definitions through a discussion of existing definitions of sources and channels. Chapter 2 will elaborate on this and formulates appropriate definitions for the current context.

Thus, throughout this thesis, the concepts of source and channel are clearly distinguished from one another. The source is defined as the person or organization storing the information, from whom (or which) that information can be obtained from by the seeker (adapted from Christensen & Bailey, 1997). Examples of sources are governmental agencies, advisory organizations, friends, family and colleagues. The channel refers to the means by which information is transferred between the source and seeker (adopted from Pieterson, 2009). Channels are viewed as equivalent to media, such as the telephone, e-mail, websites and face-to-face communication.

1.3 SCOPE OF THE DISSERTATION

The studies in this dissertation address the subject of public service delivery. Governments impose tasks on citizens and businesses, which are often complex (e.g., filing taxes). To perform well on these tasks (e.g., correctly filing tax documents) governments provide services that citizens and business can decide to use. Current public service delivery strategies were found to be insufficient, as they are primarily based on insights derived from the perspective of governments. Therefore, we decided to focus on the users' perspective (i.e., citizens and businesses).

In addition, in line with the notion that governments are not the only potential information sources to consult for solving public tasks, we resolved to focus on the broader context of information-seeking processes. That is, users (i.e., businesses as information seekers) take the initiative to obtain information from governments or other persons or organizations as sources. The information seeker selects the source from and the channel through which information will be obtained and is thus in control of the communication and information-seeking processes. Actual interaction may occur between the seeker and the source (i.e., conversation), but the seeker may also obtain the required information himself (i.e., consultation) (Ebbers, Pieterson, & Noordman, 2008). Other channel modes such as transaction and allocution are beyond the scope of this dissertation.

Although governments deliver services to citizens and businesses, the scope of this dissertation is limited to the context of business-to-government (B2G) service interactions. Despite that the B2G context is far more complex and networked than that faced by citizens, substantial insights into this group are lacking. This complexity is characterized by the notion that businesses can take many forms, from self-employed businesses to businesses with numerous employees (Jansen, Van de Wijngaert, & Pieterson, 2010). This hinders the governments' ability to realize a straightforward service delivery strategy, as it is rather difficult to determine the contact point for a business. Other aspects that indicate a complex and networked context are addressed in chapter 2.

Thus, one would expect service delivery research to devote substantial attention to businesses in general and the use and choice of service channels in particular. However, as will be discussed in chapter 3, most research on channel choice focuses on citizens (e.g., Pieterson & Ebbers, 2008; Reddick, 2005; Thomas & Streib, 2003) and research on businesses is scarce. This calls for additional knowledge on business behavior related to public service delivery.

As the B2G-context is a broad concept, we decided to further narrow the focus by only including small and medium-sized enterprises (SMEs). In this dissertation, the term SMEs refers to self-employed businesses and businesses with up to fifty employees. When we use the terms 'SMEs' or 'businesses' in this dissertation, we refer to this group. Together, these types of businesses form a very large group in the total Dutch business population. The Netherlands Tax and Customs Administration (NTCA) lacks standard procedures to communicate with these types of businesses. Therefore, public service delivery strategies primarily focus on smaller businesses that are dependent on government general service provision. In contrast, for businesses with more than fifty employees, the NTCA has developed special procedures (e.g., the assignment of a specific contact person). The source and channel choices of this group are therefore rather fixed. This group is therefore beyond the scope of this dissertation.

Despite our focus on B2G service interactions, which may imply collective choice behavior by SMEs searching for information, the starting point of this dissertation is individual choice behavior. One of the main reasons for this is our focus on businesses that are relatively small in size. Addressing obligatory public matters is often a secondary task outside of the core business of small organizations (Bergers, 2003). It is more likely that a small team or a single person is responsible for the majority of contacts with government agencies and the search for public information. As a consequence, it is less likely that (large) organizational aspects (e.g., organizational norms and other types of social influences) play a major role in an individual's choice behavior. This might increase the likelihood that choice behavior is predominantly determined by individual rather than organizational factors. Nevertheless, as will be discussed in parts 2 and 3, this dissertation will consider some of these organizational effects to assess their impact, but it begins with individual choice behavior.

Based on the traditions of communication science, this dissertation is positioned at the intersection of the cybernetic and social psychological traditions (Littlejohn & Foss, 2005). The social psychological tradition is reflected in this dissertation, as we focus on the individual choice behavior that occurs within the social context of organizations. It explains how the representatives of organizations, with regard to tax matters, select sources and channels to obtain desired information to complete their tasks. Specifically, it focuses on various users' perceptions (e.g., task, source, channel, and relationship characteristics) and how these affect the source and channel selection processes in the broader context of seeking (public) information in an organizational setting. The cybernetic tradition is then incorporated into the dissertation.

1.4 RESEARCH QUESTIONS AND OUTLINE OF THE DISSERTATION

To ultimately address our core research questions and achieve the goals of this dissertation, we formulated four additional questions that structure and guide the overall research process. These questions refer to analyses of the available findings in research (RQ_a) and theory (RQ_b), conducting a qualitative study to explore the determinants of source and channel choices (RQ_c), and developing a conceptual research model that explains source and channel choices (RQ_d), which will be assessed in a quantitative setting. We will discuss these questions and their underlying goals in greater detail below.

The dissertation consists of five different parts. The present part (part 1) contains, in addition to the general introduction (the current chapter, chapter 1), a chapter that defines the key concepts used in this dissertation (chapter 2), and a chapter that provides insights into the context of B2G service interactions (chapter 3). Chapter 3 addresses RQ_a. The aim of this question is to provide a clear contextualization of the current topic. This enables accurate interpretations of this dissertation's findings related to businesses' source and channel choices in B2G service interactions. Chapter 3 discusses research findings derived from the supplier's perspective (i.e., governments) and the user's perspective (i.e., businesses).

RQ_a *What insights can be derived from a review of existing empirical research findings regarding source and channel choice processes in the context of businesses-to- government service interactions?*

To have a proper understanding of businesses' behaviors in the public service delivery context, a clear conception of the underlying factors regarding source and channel choices is necessary. Chapter 4 discusses channel choice theories, and chapter 5 provides an overview of theories that help us to gain insights into source choices. Together, these chapters form part 2 of the dissertation. Part 2 concludes with a discussion that attempts to connect the varying strands of research by discussing the relevant insights derived in both chapters and answers RQ_b.

RQ_b: *What theoretical insights can be derived from a review of existing theories regarding source and channel choice processes in the context of business-to-government service interactions?*

Building on the insights generated from our review of existing research and theory, we conducted an initial empirical study, which is a qualitative study designed to provide a

thorough overview of the factors that influence the selection of channels and sources. It furthermore is intended to provide initial insights into the similarities, differences and interdependencies between the source and channel selection processes. Chapters 6 and 7 discuss the methodology and the results of this study, respectively. Chapter 7 will provide answers to the question below (RQ_c).

RQ_c: *What potential factors, from an employee's perspective, influence source and channel choice processes in the context of business-to-government service interactions?*

Subsequently, in chapter 8, the findings of the qualitative study (i.e., the potential source and channel choice determinants identified) are contrasted with the information available in the existing literature and subsequent hypotheses are formulated. This will result in a conceptual research model of businesses' source and channel choices in response to RQ_d.

RQ_d: *How can existing theoretical insights and the identified potential factors for source and channel choice processes in the context of business-to-government service interactions be integrated into a conceptual research model?*

The conceptual research model is tested in part 4 (chapters 9 to 12), which reports the results of a second empirical study; results of a quantitative study that provides insights into the similarities, differences, and interdependencies of source and channel choices in information-seeking processes. In so doing, we provide answers to the core research questions of this dissertation.

The dissertation concludes with three chapters (chapters 13 to 15) that form part 5 and refer to the general conclusions, discussion, and implications for theory and practice.

CHAPTER 2

DEFINING KEY CONCEPTS

To have a clear understanding of the various relevant concepts, it is crucial to know which terms and definitions exist and determine which of these are suitable for this dissertation. Therefore, the primary goal of this chapter is to discuss various conceptualizations of the key concepts employed in this dissertation. These include concepts such as channels and sources but also focus on the focal population of this study: individual representatives of SMEs seeking public information.

Whereas part 2 of this dissertation discusses complete theoretical models and the factors influencing these decisions, the present section adopts a narrower perspective and only addresses the conceptualizations of the key concepts. Therefore, to understand the essences of the various theories addressed in the present section, see the next part of the dissertation. Another goal of this chapter is to discuss source and channel choices in the broader context of information seeking. A third goal of this chapter is to motivate our decision to focus on source and channel choice behavior in the context of B2G service interactions.

This chapter first elaborates on how source and channel choices relate to information-seeking processes, according to the existing literature. This is followed by a discussion of the interaction modes that this dissertation focuses on and what has motivated our decision to focus on the B2G context instead of the citizen's context. The final section elaborates on the various definitions of sources and channels.

2.1 SOURCES AND CHANNELS IN THE INFORMATION-SEEKING PROCESS

In the context of this dissertation, individuals select sources and channels to obtain information on a certain task. They begin a search process to obtain the desired information. During the search process, they make use of the services (i.e., service channels) provided by information sources such as governments and commercial advisory organizations (i.e., B2G service interactions). This leads to the observation that the selection of sources and channels is part of a larger phenomenon: the information-seeking process. Subsequently, this raises the question of how source and channel choices are related to information-seeking processes; is there a precise location or stage at which sources and channels are selected? The present section addresses this question.

STAGES OF THE SEEKING PROCESS

This section discusses various theories that provide insights into the flow and sequence of information-seeking processes. As the goal of this section is to determine where source and channel choices occur in the process and not to provide a complete overview of the existing theories on this topic, only a few theories are discussed. The selected theories described in this section are those relevant to finding public information, address to sources and channels in the seeking process, and have a sequential orientation.

One of the selected theories that describes the information-seeking process in a purely sequential manner is the model developed by Kuhlthau (1991). The model is depicted in figure 2.1. The process of information seeking was examined from the user's perspective. The model incorporates the feelings, thoughts and actions that are common to each stage. At each stage, an appropriate task is formulated to transition to the following stage of the process. The first stage concerns 'initiation': "when a person first becomes aware of a lack of knowledge or understanding, feelings of uncertainty and apprehension are common" (p.366, Kuhlthau, 1991). In this stage, an individual's task is to recognize a need for information. Thoughts are related to task comprehension, prior experiences and knowledge. Actions take place in the form of discussing potential approaches and topics.

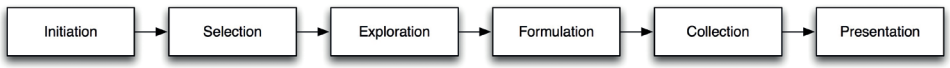

Figure 2.1 *Kuhlthau's model of the Information Search Process (1991)*

The second stage is 'selection'. During this stage, the general topic to be researched is identified and selected. In addition to debating this topic with others, a preliminary search for available information and scanning to obtain an overview of alternative topics may occur. The stage that follows 'selection' is 'exploration'. In this stage, information related to the general topic is obtained to increase personal understanding. "Actions involve locating information about the general topic, reading to become informed, and relating new information to what is already known" (p.367, Kuhlthau, 1991). Kuhlthau notes that at this stage, the information seeker is not typically able to precisely express what information is needed. This makes communication with systems difficult. Thus far, feelings of uncertainty are assumed to be present. This changes when one enters the stage of 'formulation'. A focused perspective is formed in this stage, which, as Kuhlthau (1991) argues, is comparable to a hypothesis. The next stage in the search process is called 'collection'. At this point, information related to the topic of interest is gathered with a

clearer sense of direction. Associated actions involve the selection of relevant information and making detailed notes based on the information obtained from all available sources. The final stage is 'presentation'. In this stage, the research is completed and the findings are presented. A final research summary can be made, but such a summary would primarily contain redundant information with decreasing relevance.

Kuhlthau's (1991) model is purely sequential. Source and channel selection seems to occur at every stage of the search process. This makes it difficult to precisely indicate how source and channel selection relate to the information-seeking process. However, it does indicate that sources and channels fulfill various roles in the overall information-seeking process, as different combinations are selected in each stage to achieve various goals (e.g., exploration, formulation). Nevertheless, other models that are entirely sequential (e.g., Ellis, 1989; Wilson, 1981) seem to have similar issues. Two other models that employ a slightly different approach are discussed below.

The first model is that of Byström and Järvelin (1995), depicted in figure 2.2 (for an extensive discussion of this model, see chapter 5). At this point, we will focus on the sequential aspects of the model: an analysis of the information needed, choice of action, implementation, and evaluation. Whereas Kuhlthau (1991) focuses on feelings, thoughts and actions, Byström and Järvelin (1995) exclusively focus on thoughts concerning the process and content. Similar to Kuhlthau (1991), they adopt the user's perspective, which is an employee in their study.

Byström and Järvelin (1995) adopt the definition of information need in Belkin et al. (1982). The information need is defined as the gap between the employee's knowledge of a certain task and the perceived requirements associated with the task. Byström and Järvelin (1995) compared their model to that of Kuhlthau (1991) and note that the six stages in Kuhlthau's (1991) model can be divided into a problem-formulation and a problem-solving step. The first four stages are related to problem formulation (initiation, selection, exploration, and formulation). The other stages are related to problem solving (collection and presentation).

Byström and Järvelin (1995) argue that there is no problem formulation phase concerning simple, routine tasks as "the inputs, process and outcomes are a priori known" (p.984). Consequently, they differentiate two types of information need, information needed for 1) problem formulation and 2) problem solving. Byström and Järvelin (1995) assume that actions occur after the recognition of an information need: "After a more or less conscious analysis of the needs and recognition of possible actions, the worker chooses some action

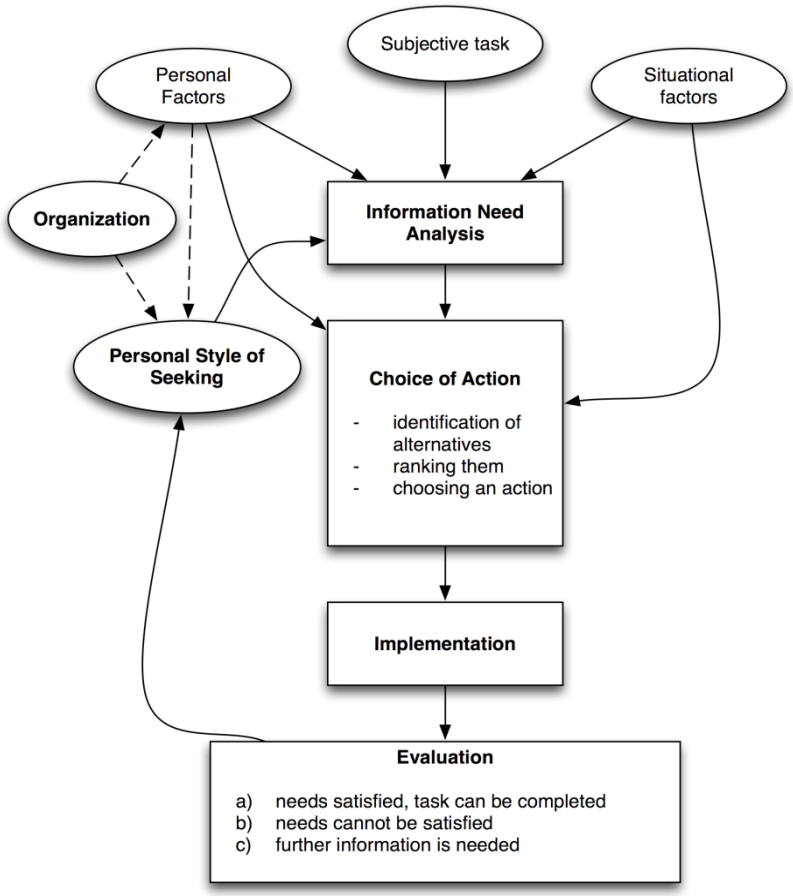

Figure 2.2 *The Byström and Järvelin (1995) model of information seeking*

to obtain pertinent information. The possible actions consist of a (in part consciously) ranked host of information channels and sources to be utilized" (p.196). What follows is the implementation of a chosen action. The process concludes with an evaluation of the results of the implementation with respect to its efficiency and relevancy. A positive evaluation means that the task can be completed. However, new actions are selected when additional information is needed. Byström and Järvelin (1995) found that in complex tasks, problem formulation and understanding are crucial. This step is followed by the problem-solving step, which is the only step in simple tasks. Compared to simple tasks, complex tasks require different information (in type and complexity), obtained through the use of different types of channels from different types of sources. As a consequence, complex tasks involve the selection of an increasing number of sources and channels, which indicates that the information-seeking process increases in length.

A third model that seems relevant in the context of this dissertation is that of Saunders and Jones (1990): a general model relating information acquisition to the decision-making process (see table 2.1 and figure 2.3). Whereas Byström and Järvelin (1995) incorporated both simple and complex tasks, Saunders and Jones (1990) exclusively focus on complex decision-making processes. However, they employed similar ideas, as will be demonstrated below. Saunders and Jones (1990) argue that source and channel selection occurs during the information acquisition component. This component is affected by the various phases and routines of the decision-making process and numerous contextual influences (e.g., time pressure, task characteristics). Again, this section focuses on sequential aspects of the model. For a further elaboration of the model, see chapter 5.

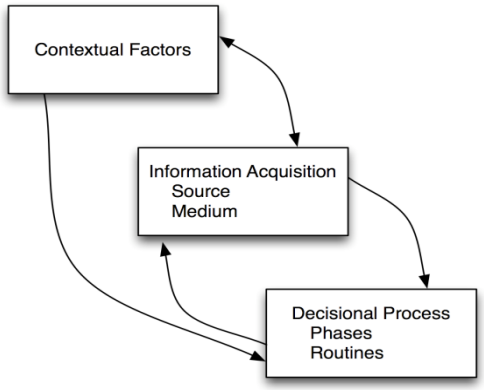

Figure 2.3 *A general model relating information acquisition to the decision-making process (Saunders & Jones, 1990)*

Saunders and Jones (1990) argue that the decisional component flows through three phases: identification, development, and selection. These phases are closely related to various routines (e.g., recognition, search, and evaluation-choice). They argue that various sources and channels are more appropriate at different phases of the process. This is in line with Byström and Järvelin's (1995) understanding that different types of information need lead to the selection of different types of sources and channels. It also agrees with Kuhlthau (1991). For instance, they both recognize that, during the early stages of the seeking process, channels are selected that allow passive and undirected viewing, and this changes as the seeking process unfolds. Furthermore, the models of Kuhlthau (1991) and Saunders and Jones (1990) are both descriptive, while the model of Byström and Järvelin (1995) also incorporated determinants of choices.

Table 2.1 Components of a general model relating information acquisition to the decision-making process (Saunders & Jones, 1990)

Model Component	Primary Structure	Substructure (elements)			
Contextual		Decision arrival time			Value premises
		Number of simultaneous decisions			Time pressures
		Perceived importance			Problem characteristics
		Organization's information environment			
		Established information patterns			
Information	Source	Internal			External
Acquisition	Medium	Face-to-Face (scheduled)			Electronic (e-mail, computer conferencing)
		Face-to-Face (unscheduled)			Addressed document
		Telephone			Unaddressed document
Decisional	Phases	Identification		Development	Selection
	Routines	Recognition		Design	Evaluation/Choice
		Diagnosis	Search	Screen	Authorization

LOCATING SOURCE AND CHANNEL CHOICE IN THE SEEKING PROCESS

The models of Kuhlthau (1991) and Saunders and Jones (1990) indicate that source and choices occur throughout the process. That is, sources and channels are selected during each phase. The model developed by Byström and Järvelin (1995) presents a more nuanced perspective. Kuhlthau (1991) posits that the recognition of an information need results from discussions of the topic with others during the early phases of the process, which indicates source and channel selection. In contrast, Byström and Järvelin (1995) clearly argue that the selection of sources and channels occurs after the analysis of the type of information needed (problem formulation or solving). According to the recognized need, various sources and channels are selected during the action phase.

However, to explain what triggers or influences source and channel choice, it seems necessary to examine the beginning of the process. This is in line with Byström and Järvelin (1995), as they assume that influential factors (e.g., situational factors, subjective tasks) play a role in the information need and action phases. When the source and channel selected are evaluated negatively —for instance, the information obtained is unsatisfactory— information seekers are assumed to return to the action phase and choose a new source and channel (Byström & Järvelin, 1995). They note that the information need is only readjusted when there is absolutely no match between the information that was needed and what was obtained.

Combining the findings of the models discussed above, some conclusions can be formulated regarding the location of source and channel choice in the context of information seeking. First, we assume that the length and flow of the information-seeking process varies according to the type of task involved. Some stages become shorter or longer or are skipped. For instance, when a task is simple or there is little time to find information, one directly, or more quickly, proceeds to the problem solving stages of the seeking process. This affects the type and number of sources and channels selected.

Second, the models seem to indicate that the aforementioned factors exert greater influence on certain stages than on others. When the process begins (i.e., the first stages) with sources and channels being selected based on prior experiences, other factors such as the expertise of a source are of greater importance in subsequent stages. For example, the NTCA is consulted via the telephone because the information seeker has had positive prior experiences with this source-channel combination. However, after speaking with the service employee at the NTCA, it becomes clear that specific information is needed for this task from an expert who is able to interpret the information. This will lead to a new source-channel combination in which the expertise of a source plays a larger role. This change in the influence of certain factors can be explained through the notion that individuals select sources and channels that they believe will be suitable for the task at hand. After using these sources and channels, the information seeker gained additional knowledge on the topic. Based on this knowledge, he or she adjusts or specifies his or her information need and selects a source and channel that suits this new information need.

Thus, there is no precise location at which the selection of sources and channels occurs; instead, it occurs throughout the process. Recognizing the factors influencing the process for selecting sources and channels leads to the conclusion that the choices do not occur in isolation. The information-seeking process does not flow neatly from start to finish with only one source being consulted via one selected channel but rather consists of several iterations in which diverse sources and channels are selected. The sequence of these choices depends on numerous factors and occurs in a complex context.

2.2 MODES OF INTERACTION: CONSULTATION AND CONVERSATION

Our focus on the process as followed by the information seeker entails that the study adopts the user's perspective. Users (i.e., information seekers) take the initiative to obtain information from governments or other persons or organizations as sources. The information seeker decides which source to obtain information from and the channel used

to do so and is thus in control of the communication and information-seeking processes. In keeping with the model developed by Ebbers et al. (2008), this dissertation focuses on the channel modes of consultation and conversation. In consultation, there is no actual interaction between the information seeker and the source. The information seeker takes the initiative and consults a source to obtain the required information. There is interaction in the conversation mode, as the information seeker requests information and the source provides this information customized to meet the seeker's needs. In total, Ebbers et al. (2008) distinguish four modes of interaction —allocution, registration, consultation, and conversation— between organizations and users (see table 2.2).

Table 2.2 Types of interaction modes (Ebbers et al., 2008)

		Interactivity	
		Single sided	Two sided
Initiator	Organization	Allocution	Registration
	User	Consultation	Conversation

Each mode is based on a matrix associating the initiator (user or organization) with a context of one- (transferring information) or two-sided (actual interactions in the form of questions-responses) interactivity. These four modes are informative, although not all interactions between governments and citizens and businesses are exchanges of information, as monetary exchanges also exist (Ebbers et al., 2008). For example, when taxes are filed, citizens and businesses receive or pay money. This fifth mode was added and termed the transaction mode. It is worth noting here that this dissertation focuses on service communication in which information is exchanged between governments and businesses. Therefore, we do not address transaction channels.

Therefore, this dissertation focuses on consultation and conversation. Ebbers et al. (2008) exclusively focused on three channels governments have at their disposal: website, telephone, and front desk (face-to-face communication). The website is an example of consultation, while the telephone and front desk are examples of conversation. However, this dissertation includes not only these channels but also incorporates all potential channels from which information seekers can select. The reason is that, in addition to the government, other types of sources relevant in the present context are included. We assume that these sources can be contacted through a wider variety of channels than simply websites, telephones and face-to-face communication. Examples of other channels are e-mail, written, social media, and Whatsapp/SMS.

2.3 CITIZENS VERSUS BUSINESSES

Governmental organizations deliver services to both citizens and businesses. Due to greater administrative burdens and the complexity of their relationship with governments, businesses have more contacts with governmental agencies than citizens (Arendsen, Van Engers & Te Velde, 2006). Given the importance of e-services for businesses, the European Commission's goal is for 80% of enterprises to have used e-government services by 2015 (European Commission, 2010). In addition, businesses expect high-quality governmental public service delivery (Van de Wijngaert, Pieterson, Jansen, & Van Dijk, 2010). Therefore, one would expect substantial attention in the service delivery research on businesses in general and the choice and use of service channels in particular. However, most research on channel choice focuses on citizens (e.g., Pieterson & Ebbers, 2008; Reddick, 2005; Thomas & Streib, 2003). This calls for gathering additional knowledge on business behavior related to public service delivery.

The business context is far more complex and networked than that of citizens. There are several reasons for this. First, businesses have more contact moments with governments than citizens, as the former are subject to a larger number of rules and regulations (Jansen, Van de Wijngaert, & Pieterson, 2010). Whereas citizens are only required to file tax returns once per year, businesses have many forms of taxes (e.g., turnover tax, corporation tax, tax on dividends) several times a year.

Second, some contact moments between governments and businesses are indirect—via intermediaries—and others are direct. This facilitates a networked environment (Jansen et al., 2010), as parties (e.g., intermediaries) other than the government and a business are involved. The observation that intermediaries are involved in B2G service interactions will be further discussed in chapter 3. In recent decades, organizations underwent rapid and revolutionary changes (Fulk & DeSanctis, 1999). Major developments in the organizational landscape include the changing connection between firms (Fulk & DeSanctis, 1999) and the emergence of (global) networked forms of organizations (Monge & Fulk, 1999). Information exchange is now fundamental to relationships (Castells, 2000). Monge and Contractor (2003) argue that network organizations are organized around complex webs of exchange and dependency relationships involving multiple organizations. This implies that an organization becomes a super organization that has strong links to other organizations and the primary function of which is to link organizations and coordinate their activities. Some (e.g., Cross, Yan, & Louis, 2000) argue that network organizations create so-called boundary-less organizations whereby the boundaries of the internal organizational network

and the external network become increasingly blurred. One of the main components of a (global) network organization is that external (communication) relationships are flexible, established according to organizational needs and are not bounded by horizontal or vertical structures (Monge & Fulk, 1999).

Third, as business itself can take many forms, this also adds complexity (Jansen et al., 2010). A business can be an individual (i.e., self-employed) or a group of individuals (i.e., an organization with employees) exhibiting particular behavior (Jansen & Pieterson, 2010). Jaffee (2001) describes a business as a network of individuals. This network of individuals can be partially influenced by and depends on the environment. In his law of individual differences, Davis (1981) argues that: 1) Individuals within a business differ in background, experiences, perceptions and expectancies, and 2) individuals react differently to situations. This indicates that different employees responsible for tax matters use public service delivery in different ways. From a governmental perspective, this hinders the possibility of employing a straightforward service delivery strategy, as it is rather difficult to determine who the contact point is for the interaction. Despite the recognition that different employees make different choices, it remains unclear for the government whether it is more suitable to concentrate on that particular individual or the business as a whole (i.e., the entire group). Moreover, this lack of clarity hinders the development of clear insight into businesses' needs, expectations and search behavior based on characteristics that are easy to obtain (e.g., an organization's size and form).

Given the complexity of B2G service interactions, it is questionable whether the findings of government-citizen studies are fully applicable to the business context. This observation calls for insights on source and channel choice in B2G service interactions. Therefore, this dissertation focuses on businesses and, specifically, on self-employed individuals and businesses with up to fifty employees. The reason for only considering these types of businesses, and not those with more than fifty employees, is that public service delivery strategies primarily focus on these smaller businesses that depend on general service provision (i.e., they do not have fixed service points such as a particular contact person).

2.4 DEFINITIONS OF THE CONCEPTS OF SOURCE AND CHANNEL

To answer the core research questions of this dissertation, it is crucial to have unambiguous definitions of the concepts of source and channel. First, a clear distinction between the concepts is necessary to study the extent to which source and channel choices are

determined by the same underlying factors. At the conclusion of this dissertation, the concepts are brought together again to provide insights into the underlying mechanisms of the interdependency between source and channel choice. This section discusses the various definitions of sources and channels and determines the definitions that are best suited to the context of this dissertation.

THE EARLY LITERATURE: FROM LINEAR TO NETWORKED MODELS OF COMMUNICATION

As will become apparent later in this section, theories often consider media, channels and sources as equivalent. Nevertheless, some theories recognize that sources and channels are distinct concepts, although they are related to or interdependent with one another. Such recognition can be observed in the early literature in the work of Shannon and Weaver. Their Mathematical Theory of Communication (1949) represented a first step towards understanding communication processes between two persons (i.e., a sender and a receiver). It is relevant in this context because it describes the communication process in its most basic form. The main components of the model include the sender, message, transmission, noise, channel, reception and receiver (see figure 2.4).

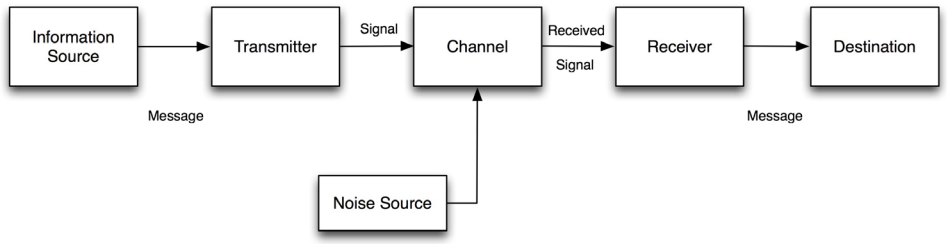

Figure 2.4 *The Mathematical Theory of Communication (Shannon & Weaver, 1949).*

To match the sender's intended meaning with the receiver's interpretation, it is crucial to use a suitable channel to convey the message in a desired way. In their model, Shannon and Weaver (1949) regarded communication as a linear process. However, others (Dervin, 1989; Rogers & Kincaid, 1981) argued that communication is a process of convergence and interaction and thus more relational and social (Rice, 1990). That is, communication is formed through interaction and results in a convergence of meaning rather than through the transportation of an objective message from a source to a receiver without involving the nature of the relationship (Rice, 1990). Thus, although the model of Shannon and Weaver (1949) is a strong simplification of reality, it leads to the observation that in addition to the

(crucial) role of the channel in the communication process, it is also necessary to understand a) the role of the sender/source of information and b) the relationship between the channel and source as integral components of the communication process and prerequisites for successful communication.

Berlo (1960) developed a similar model. His S-M-C-R model includes six main components in the communication process: (1) the communication source, (2) the encoder, (3) the message, (4) the channel, (5) the decoder, and (6) the communication's receiver. The source is the person or group of persons with a reason to initiate the communication process. This reason or purpose is expressed in a message and carried by a channel to the receiver. In the context of this dissertation, the communication source in Berlo's model refers to the information seeker that initiates the seeking process and asks the source to provide information. Thus, the information source refers to the receiver in Berlo's model. Although Berlo (1960) recognizes that several meanings of the word 'channel' exist in communication theory, he argues that "a channel is a medium, a carrier of messages" (p.31). Berlo (1960) clearly differentiates between the concepts of source and channel However, indications of the interaction between the source and channel can be found in the notion that "channels couple the source and receiver, enabling them to communicate" (p.67, Berlo, 1960). The source needs to select an appropriate channel that matches the message and receiver. The model of Shannon & Weaver (1949) and that of Berlo (1960) regard communication processes as linear flows of information from sender to receiver (i.e., allocution). However, this dissertation focuses on consultation (as explained in chapter 1), as information seekers consult sources and ask them to provide information.

Another indication of the importance of addressing the differences and interaction between the selection of sources and channels can be derived from work of Daft and Lengel (1984). Their explanation of media richness is based on the reasoning of Bodensteiner (1970) and Holland, Stead, and Leibrork (1976). Daft and Lengel (1984) argue that media differ in feedback capability, communication channels utilized, source, and language. Furthermore, they posit that "each medium is not just a source, but represents a difference in the act of information processing" (p.11). Sources can be personal or impersonal. Channels are auditory or visual in nature (see table 2.3). For instance, as a medium, the telephone provides rapid feedback via an audio channel from a personal source in natural language. From this, we can infer that Daft and Lengel (1984) regard the channel as the form in which information is transferred from a personal or impersonal source. While these theorists distinguish among the concepts of medium, channel, and source, this distinction is blurred in other studies (e.g., Gerstberger & Allen, 1968; O'Reilly, 1982).

Table 2.3 Media characteristics related to the richness of processed information (Daft & Lengel, 1984)

Information Richness	Medium	Feedback	Channel	Source	Language
High	Face-to-face	Immediate	Visual, Audio	Personal	Body, Natural
↕	Telephone	Fast	Audio	Personal	Natural
	Written, Personal	Slow	Limited Visual	Personal	Natural
	Written, Formal	Very Slow	Limited Visual	Impersonal	Natural
Low	Numeric, Formal	Very Slow	Limited Visual	Impersonal	Numeric

Let us return to the basic model of communication proposed by Shannon and Weaver (1949). As mentioned above, this model has been criticized for being overly simplistic (Dervin, 1989; Rogers & Kincaid, 1981) and failing to account for the complexities of the communication process (Rice, 1990). One of the first models building upon and expanding the mathematical model is two-step flow theory (Katz & Lazarsfeld, 1955). An important contribution of two-step flow theory is that it illustrates that communication processes often involve a) multiple steps and b) multiple sources of information that serve different functions in the communication process. Monge and Contractor (2000; 2003) further extend this notion. They propose that patterns of contact are contained in communication networks, which can take numerous forms and are created by flows of messages between communicators over time and space. The nature of communication between persons, groups or organizations is defined in terms of relationships. Individuals are involved in numerous relationships with others through various networks, and those others are also involved in relationships with several others, and so forth (Haythorntwaite, 2002). Therefore, the lines in these networks between senders and receivers of information are increasingly blurred, and communication processes often involve multiple senders/receivers, multiple steps and multiple channels. In these models, the sender and receiver do not occupy fixed positions. This seems to be the case in the context of the present dissertation. For instance, governments communicate with businesses to inform them of certain issues, and businesses use public services to obtain information (with or without intermediaries). To untangle these networks, it is necessary to understand why individuals use various channels and sources of information and how these concepts interact.

MORE RECENT THEORIES OF CHANNEL AND SOURCE CHOICE

As will be discussed in part 2, theories on source and channel choice are rooted in two different research areas: one area focuses on media choice behavior, while the other emphasizes information behavior. This section begins with an analysis of media choice theories, whether and how they differentiate between sources and channels, followed by an analysis of theories rooted in the area of information behavior.

Media choice theories

While most media choice theories are to some extent based on the Media Richness Theory (MRT) proposed by Daft and Lengel (1984; 1986), none of them differentiates among the concepts of channel, source and medium. In the previous section, it became clear that Daft and Lengel (1984; 1986) regard channel and medium as distinct concepts. They argue that media differ with respect to feedback capability, the communication channels utilized, source, and language. Channels are auditory or visual in nature. However, Carlson and Zmud (1994; 1999) seem to consider channel and media to be equivalent concepts without providing any explanation. Ultimately, they relabeled the term media as channel and used it in their final model of Channel Expansion Theory (CET) (Carlson & Zmud, 1999). Thus, explanations of the terms channel and the medium are lacking, and the authors only provide examples from which we can ascertain that they consider the concepts to be similar. Fulk, Schmitz and Steinfield (1990) only use the term media; the source is not explicitly or implicitly involved in their Social Influence Model (SIM). Pieterson's (2009) perspective is in line with that of Carlson and Zmud (1994, 1999); channel and medium are regarded as equivalent concepts. However, after a deliberation on both terms, they explicitly select the term channel. Pieterson (2009) uses the term channel as it is more commonly employed in the service delivery context, which was the context of his research. He defines the channel as "the means by which a message is sent by a source or obtained by a receiver" (p.13). Similarly, the Dual Capacity Model (DCM) proposed by Sitkin et al. (1992) considers the concepts to be equivalent, as regard the medium as the conduit for information, which is one of the dual conceptions of the capacities of a channel. The concept of a medium as a conduit is originally related to Shannon and Weaver's (1949) model of communication. They conceptualize the medium as "a container for information that can be characterized by how much information it can convey" (p. 566). In brief, whereas Daft and Lengel (1984) clearly distinguish among the concepts of medium, channel, and source, this distinction is blurred in other media choice studies, and the terms seem ill defined and are used interchangeably. The following section focuses on information-seeking theories.

Information-seeking theories

Whereas media choice theories lack definitions of the source, theories on information-seeking behavior incorporate definitions concerning both channels and sources. For an extensive elaboration of the models discussed in this section, see chapter 5.

Byström and Järvelin (1995) argue that there is no absolute distinction between channels and sources. From the seeker's perspective, a channel can be considered "the guide" to appropriate sources. Examples of channels are colleagues and telephone directories. A colleague, for instance, can become a source when he or she provides the seeker with

relevant information. Furthermore, the authors mention the following classification of types of information sources: (1) other persons who are concerned with similar tasks or parts of the task (e.g., the administrative component), (2) experts and well-informed colleagues, (3) the literature, and (4) official documents (e.g., agendas, letters, etc.), (5) personal collections (i.e., personal notes), (6) registers, and (7) commercial databases (Byström & Järvelin, 1995). Ultimately, whether something or someone is considered a channel or a source depends on the role fulfilled in the information-seeking process: whether that someone or something is a "guide" to or a "direct provider" of the information. Byström and Järvelin (1995) are among the few scholars (e.g., Saunders & Jones, 1990; Christensen & Bailey, 1997) who explicitly discuss the concepts of sources and channels; however these contributions are all dated because they do not incorporate electronic channels such as websites. Many use channel and source interchangeably and do not define or describe one or both concepts (e.g., Wilson, 1981; 1999; Krikelas, 1983; Savolainen, 1995; Johnson, 2003). Some only provide examples of channels and sources; however, it can also be inferred that those studies employ the terms source and channel interchangeably (e.g., Baldwin & Rice, 1997; Boyd, 2004; Julien & Michels, 2004). Even Byström uses the two terms interchangeably in an article co-authored with Hansen (2005).

While Byström and Järvelin (1995) consider the channel the "guide" to a certain information source, Leckie et al. (1996) seem to regard the channel as a mechanism for characterizing information sources: "sources of information can be broadly characterized by types of channels or formats, including formal (e.g., a conference, a journal) or informal (for example, conversation); internal or external (source within organization or outside; oral or written (that is, written including paper copy and electronic text); and personal (own knowledge and experience, professional practices)" (p.184). This allows us to infer that they regard the channel as the form (in its broadest sense) in which the information is transferred between a seeker and an information source.

Baldwin and Rice (1997) use the concepts of information sources and communication channels interchangeably. Apart from various examples of channels included in the model, there is no definition or description of the concepts presented. Examples of channels are newspapers, magazines, personal files and other analysts (i.e., colleagues). These are considered internal channels. Examples of external channels are company contacts, classified by type and position, other external contacts, visits to other companies, annual meetings, the use of a computer at home, and memberships in private clubs. Remarkably, Baldwin and Rice (1997) generally employ the term channel, while both Leckie et al. (1996) and Byström and Järvelin (1995) prefer the term sources. A potential reason for this

is that Baldwin and Rice (1997) have a history in communication science, while the others have a background in information science.

Saunders and Jones (1990) describe the concept of a source as follows: "the source refers to human or organizational sources" (p.34). They distinguish between internal and external sources, where internal refers to sources within the organization. Moreover, they define media as "those mechanisms (such as meetings, telephones, and memos) selected to transfer information from a source to the decision maker" (p.32). It is important to note that Saunders and Jones (1990) employ the term media instead of channels, most likely because they adopted the term from an early communication study authored by Daft and Lengel (1986). However, comparing the models presented thus far leads to the observation that the term channel is used in a broader sense than simply being an equivalent term to media. As Pieterson (2009) notes, the latter is common in the communication literature. Nevertheless, Leckie et al. (1996) conflate the terms and use channel when they refer to a medium as well as when characterizing a mechanism used by an information source (e.g., internal or external).

Boyd (2004) employs the term information channel and explains the concept as the source or medium by which information seekers find and use information. "These channels include both digital (e.g., web, e-mail) and non-digital (e.g. telephone, face-to-face) methods. Sources include: friends, family, television, the web, trade organizations, journalists, authors and publishers etc. All these methods and sources have various levels of influence on the information seeker" (p. 84, Boyd, 2004). At first glance Boyd (2004) distinguishes the source and channel. However, he seems to employ the source and channel interchangeably, because it was argued that information might flow from the channel as well as information can be sought out from the channel. In particular the latter statement— information can be sought out from the channel— seems to refer to the source as defined by Christensen and Bailey (1997).

Apart from simply being rooted in different disciplines, there is another indication for the divergent explanations and uses of the terms channels, sources, and media, namely the variety in focus and depth of the models discussed thus far. Boyd (2004) focuses how information (i.e., information individuals receive or have access to, the information source, and the seeker's comprehension of the information) influences decision-making behavior of information seekers. Both Byström and Järvelin (1995) and Leckie et al. (1996) studied the entire information-seeking process that begins with the recognition of an information need, is followed by an action phase (i.e., the actual selection and use of sources and channels)

and concludes with an evaluation. Conversely, Saunders and Jones (1990) explicitly focus on the actual acquisition (and transfer) of information (i.e., communication) required to ultimately make a thoughtful decision. Information acquisition is considered the action phase (i.e., the actual selection and use of sources and channels) in the model of Byström and Järvelin (1996) and the phase in which information is sought in the model of Leckie et al. (1996). Saunders and Jones (1990) regard the selection of sources and channels as the actual communication between source and seeker. In contrast, the other two models instead considered the selection of sources and channels to be the process of finding a suitable source. They did not explicitly consider the actual transfer of information. Byström and Järvelin (1995) and Leckie et al. (1996) regard the channel as the way and the form in which information is sought, respectively, in a more general sense and with a broad focus. They do not address the actual transfer of information in great depth and use the terms channels and sources interchangeably. In contrast, information acquisition (i.e., communication) is the core of the model developed by Saunders and Jones (1990) and is studied in greater depth by explicitly explaining that the medium is the mechanism for transferring information from source to seeker. Furthermore, Christensen and Bailey (1997) define the information source "as a repository of information" (p.376). It is the person or location in which the information is stored and from which one can obtain information. The terms media and channels seem to be regarded as interchangeable.

The abovementioned models are ambiguous with respect to the definitions, descriptions and examples of sources, channels and media. Apart from the lack of definitions in many studies (e.g., Wilson, 1981; 1999; Krikelas, 1983; Johnson, 2003), the concepts are explained differently and often conflated with one another. Byström and Järvelin (1995) argue that the channel can become a source and vice versa. It depends on the function it serves in the seeking process, whether it is a guide or a direct provider of information. It is considered a channel in the former situation and a source in the latter. However, this seems a highly unmanageable definition for practitioners, as the entire seeking process must be completed before one can determine whether someone or something served as a channel or source. Leckie et al. (1996) regard channels as mechanisms for characterizing types of sources. Many others use the terms interchangeably without devoting attention to the differences and similarities between channels and sources (e.g., Ellis, 1989; Savolainen, 1995; Baldwin & Rice, 1997). This implies that most researchers consider channels and sources to be equivalent.

However, two studies (Saunders & Jones, 1990; Christensen & Bailey, 1997) described in this section specifically consider both concepts and argue that they should not be conflated. As will be elaborated on in this section, this dissertation agrees with the notion that sources and channels are different concepts. Both studies regard the source as the place at which

information is stored. The channel is regarded as the mechanism for transferring the information flow from source to seeker. Examples of sources are humans or organizations. Channels are the telephone and face-to-face communication, for instance. Nevertheless, empirical evidence of this distinction is scarce and lacking in depth. Although Christensen and Bailey (1997) observed an interaction effect between the selection of sources and channels, their explanations are brief and provide little insight into the mechanism for the purported interaction. Similarly, the model proposed by Saunders and Jones (1990) is not empirically supported because it is pretheoretical in nature. Essentially, the models of Saunders and Jones (1990) and Christensen and Bailey (1997) consider the concepts of sources and channels in greater detail and argue that a clear distinction between the two is vital for an unambiguous understanding of the mechanisms that determine the choices faced in the information-seeking process. The challenge for future research is to identify the differences and similarities between and the interaction mechanisms for selecting sources and channels.

COMPARING DEFINITIONS IN THE VARIOUS RESEARCH DOMAINS

In the media choice literature, the concepts of channel and medium are considered equivalent, except for the early understanding developed by Daft and Lengel (1984) that channel and medium (and source) differ. Apart from Pieterson (2009), no definitions or descriptions are provided in the more recent media choice literature. Similarly, none of these media choice models explicitly involves the concept of an information source. Consequently, it must be concluded that the current media choice literature lacks an understanding of this aspect.

However, these theories provide some implicit hints regarding their conceptualization of sources. These indications will be briefly mentioned below; for a further elaboration of these models, see part 2. Although the concept of a source is not explicitly involved in media choice theories, CET seems to accord the information source some influence in determining channel choice. Specifically, it assumes that experiences with the source (i.e., the co-participant) affect the selection of the channel. Similarly, DCM indicates that prior experiences (i.e., the communication history between two communicators) of a seeker with a source to some extent determine channel choice. In addition to the effect of the interaction history, sender and receiver (i.e., seeker and source) characteristics are also assumed to be influential. Despite these indications of a relationship between the source and the channel, it remains difficult to derive more detailed insights into this relationship from the models rooted in the media choice literature.

In contrast, the models of information-seeking behavior discussed above seem to include

source choice, at first glance. A closer examination seems to indicate that channels and sources are also often confounded concepts in this domain, as illustrated by the interchangeable use of the terms channels and sources (e.g., Baldwin & Rice, 1996; Byström & Hansen, 2005; Julien & Michels, 2004). Nevertheless, several others note that the concepts differ from one another (e.g., Saunders & Jones, 1990; Byström & Järvelin, 1995; Leckie et al., 1996; Christensen & Bailey, 1997).

Table 2.4 presents the various definitions of channels and sources. The definitions provided by Byström and Järvelin (1995) seem unmanageable, as a channel could become a source, and vice versa, depending on the function it fulfills in the information-seeking process. As this dissertation focuses on the mechanisms driving the source and channel decisions, and not on the entire seeking process, this definition seems inappropriate. Moreover, while Leckie et al. (1996) seem to differentiate between source and channel, they only provide a definition of channels, and what they precisely mean when they refer to the source remains somewhat vague. Christensen and Bailey (1997) define a source as "a repository of information" (p.396). It is a person or place in which information is stored and from which one can obtain information. Saunders and Jones (1990) only provided a description of a source: "the source refers to human or organizational sources" (p. 34). They view the medium as the mechanism that transfers information from a particular source to the seeker. This definition of a medium is in line with that of Christensen and Bailey (1997). Pieterson (2009) employs a similar definition of a channel—which is considered equivalent to a medium—as "the means by which a message is sent by a source and obtained by a receiver" (p.13).

As the context of this dissertation is identical to that of Pieterson (2009) —namely the service delivery context—we generally adopt that definition of a channel. Regarding the definition of a source, this dissertation adopts the definition of Christensen and Bailey (1997), with the addition that sources are human in nature (i.e., one person, a group of persons, or an organization). This changes their original definition, as we disagree that a source can also be regarded as simply the location (e.g., a website) where information is stored. Rather, we agree with the description of Saunders and Jones (1990) that sources are human or organizational in nature. Thus, this dissertation defines a channel as the means by which information is transferred between source and seeker (adopted from Pieterson, 2009). The source is defined as the person or organization storing the information, from whom (or which) that information can be obtained from by the seeker (adapted from Christensen & Bailey, 1997).

Table 2.4 Overview of the existing definitions of sources and channels in the media choice and information-seeking literature

Reference	Involved concepts	Provided definitions of media, source, and channel
Shannon & Weaver (1949)	Channel & Source	The source selects messages. The channel is the carrier of information.
Berlo (1960)	Channel & Source	The source is the person or group of persons. The channel is the carrier of the message.
Daft & Lengel (1984, 1986)	Channel & Source	The channel is the form in which information is transferred from a personal or impersonal source.
Saunders & Jones (1990)	Channel & Source	The medium is the mechanism that transfers information from the source to the seeker. The source refers to human or organizational sources.
Fulk et al. (1990)	Channel	No definitions provided.
Sitkin et al. (1992)	Channel	No definitions provided.
Carlson & Zmud (1994; 1999)	Channel	No definitions provided. Channel and medium are equivalent terms.
Byström & Järvelin (1995)	Channel & Source	The channel is the guide to the source. A channel can become a source when information is directly provided.
Leckie et al. (1996)	Channel & Source	The channel is the mechanism characterizing the type of source: (in)formal, internal/external, oral/written.
Baldwin & Rice (1996)	Channel & Source	No definitions provided. The terms source and channel are used interchangeably.
Christensen & Bailey (1997)	Channel & Source	The source is a repository of information. The channel transfers the information from source to seeker.
Boyd (2004)	Channel & Source	An information channel is the source or medium by which information seekers find and use information.
Pieterson (2009)	Channel	The channel is the means by which a message is sent by a source or obtained by a receiver.

The definitions of source and channel used in this dissertation make a clear distinction between the two concepts, which allows us to simply provide several examples of both sources and channels. Examples of sources include governmental agencies, advisory organizations, friends, family and colleagues. Examples of channels are the telephone, e-mail, websites and face-to-face communication. However, there might be some debate regarding the following technologies: databases, the Internet, and search engines. Are these considered as sources or channels?

We argue that databases, the Internet and search engines are neither sources nor channels. First, we will discuss our conception of search engines. Search engines only provide an overview of the available sources and guide an individual towards these sources. They do not create content. The other persons or organizations to which search engines guide

information seekers are considered the actual sources. Moreover, by guiding information seekers to the underlying sources, they are also guiding seekers to a specific channel to obtain information from that source. For instance, when someone begins a search process on Google, they are guided towards the websites of various sources. Keeping in mind the definitions of sources and channels, it can be argued that Google is the 'supporting-channel' that leads information seekers towards the channel website to contact a specific source. Thus, search engines are neither sources nor channels, but are considered 'supporting-channels'.

Similarly, databases and the Internet cannot be classified as sources or channels, according to our definitions. Like search engines, they are not content creators (i.e., sources), neither they are equivalent to media (i.e., channels). We argue that databases and the Internet are the infrastructure that forms the underlying mechanism that allows channels to transfer information from information sources to information seekers. They can be compared to a CD on which the information is stored, telephone cables, or the paper conveying a written message.

This chapter provided us with improved understandings of the various key concepts and their definitions in this dissertation. The aim of the following chapter is to provide a clear contextualization of B2G service interactions, which helps us to correctly interpret the findings of this dissertation regarding source and channel choices in information-seeking processes.

CHAPTER 3

THE CONTEXT OF BUSINESS-TO-GOVERNMENT SERVICE INTERACTIONS

The present chapter will demonstrate that source and channel choice behavior is embedded in a complex and dynamic environment that has experienced highly impactful developments in recent decades. Although this dissertation intends to adopt a purely scientific approach, one must recall that such a dynamic environment hinders research that examines source and channel choice in an isolated context. Thus, to correctly interpret the findings of the various studies presented in this dissertation, it is crucial to develop a clear contextualization of the present research. For instance, having insight into a) users' channel preferences and b) the channels governments have included in their palette of available channels help to explain the decision to include certain channels in the main study. The primary goal of this chapter is to provide this context. This chapter is organized as follows. First, the focus will be on research findings and strategies implemented from the supplier's perspective (i.e., governments). Then, the chapter turns to a discussion of the findings of research adopting the demand side's perspective (i.e., businesses as users). The chapter concludes with a discussion of the role of intermediaries in B2G service interactions.

3.1 STRATEGIES OF GOVERNMENTS TO MANAGE THEIR SERVICE DELIVERY

THE RISE OF ELECTRONIC CHANNELS

One major development that transformed the organizational landscape into a dynamic and networked society is technological change (Van Dijk, 2012). The rise of the Internet has facilitated media such as websites and, now, social media (e.g., Twitter and Facebook), that are often labeled web2.0 (Estabrook, Witt, & Rainie, 2007). Sharing information with others is easier and less expensive (Mulgan, 2004) and individuals seek a wider variety of appropriate sources for various situations (Boase et al., 2006). De Vos (2008) found that businesses consult various sources during their search for governmental information. Moreover, electronic channels are not only used for socializing but also for seeking information, making decisions, and exchanging experiences (Boase et al., 2006). Boase et al. (2006) found that financial matters are a topic of discussion on the Internet, which was found to be very useful in making decisions. These results suggest that individuals could share information on tax matters with others on Facebook, or on a special forum related to tax matters. These websites facilitate finding other entrepreneurs who may have

similar questions one's own and therefore serve as a source of information. In addition to the notion that this impacts information quality (Agichtein et al., 2008) this suggests that, for instance, the use of electronic channels to obtain tax-related information will result in consulting sources other than the government. Moreover, other sources, which are now more accessible, are consulted more frequently.

Research by Pieterson and Ebbers (2008) has shown that the availability of electronic channels has increased the moments of contact between citizens and the government. Citizens seems to perceive that contacting the government has become easier (e.g., reduced communicative distance), which has led to substantial demand for online information. However, these new media are not replacing the old media but exist in addition to existing channels (Pieterson & Ebbers, 2008). For example, youths often use multiple sources at simultaneously (Roberts & Foehr, 2008), and many individuals often use sequences of media rather than making isolated choices (Stephens, Sornes, Rice, Browning & Saertre, 2008). Furthermore, individuals often switch between receiving information passively and seeking it actively in a single search process (Ramirez, Walther, Burgoon & Sunnafrank, 2002). Thus, multi-directional flows conveyed via electronic and interpersonal media (partly) replace uni-directional flows conveyed via the mass media. This phenomenon is labeled "mass self-communication" (Castells, 2007). Thus, organizations increasingly apply sophisticated communication technology to coordinate and communicate within these structures (Monge & Fulk, 1999). The growing importance of information exchange and relationship building is likely to affect the media selected to communicate within and between organizations. This implies that the position of government in relation to businesses is changing and thus affects the distance between the two.

E-GOVERNMENT

The primary contribution of research on electronic government (e-government) comes in the form of shaping the service delivery strategies of governments worldwide. E-Government simply means communication between governments and their customers (e.g., citizens, businesses) via electronic communication technologies (Evans & Yen, 2006). The phenomenon of e-government began in the mid-1990s, primarily driven by the development and growth of electronic communication technologies (Joseph, 2013). Heeks and Bailur (2007) found that the earliest reference to the term 'e-government' dates to 1997. In her 2002 article, Wimmer noted that, at the time, the public sector had recognized the success of electronic communication in the private sector and begun to modernize and innovate public service provision under the umbrella term of e-government. The European Commission (2004) also recognized the need for a new strategy to realize effective and

efficient governmental service delivery. “Citizens expect faster public service delivery, companies want administrative burdens to be reduced, and public bodies need to raise productivity in order to deliver better and faster services within tight budgets” (European Commission, 2004, p. 1). This is what the European Commissioner for Enterprise and Information Society, Erkki Liikanen, said in September 2003. The implementation of electronic channels should lead to faster service delivery, a reduction in administrative burdens and increased productivity (European Commission, 2004). These new forms of interaction were supposed to facilitate direct information exchange between governments and their clients by providing online information where clients consume services, anywhere, anytime and in any way (e.g., European Commission, 2004; Gagnon, Posada, Bourgault & Naud, 2010). However, as will be explained subsequently in this chapter, simply adding these electronic channels does not seem sufficient to ensure effective and efficient service delivery.

MULTICHANNEL MANAGEMENT

To improve existing e-government strategies, in 2007 the OECD presented an overview of the successes and challenges facing e-government in the Dutch national context. Although the OECD (2007) concluded that the government had successfully implemented e-government services, some improvements were in order. The first improvement concerned a user-centered focus and improved guidance on how users should use service delivery. Furthermore, it proposed that the mandatory use of ‘e-government building blocks’ and particular e-services would improve efficiency. The third recommendation calls for improved monitoring and evaluation methods to achieve more user-focused service delivery. In addition, the OECD (2007) observes a lack of the systematic use of the available multichannel strategies in the Dutch government’s service delivery. To address this concern, the OECD recommended the development of a general ‘public-sector-wide’ strategy for multichannel management. This would result in positive changes in habits, which would benefit both customers and governments.

Therefore, multichannel management would be a solution, as it would lead clients to inexpensive online channels (OECD, 2007). Multichannel management can be defined as: “The use of multiple service channels within one public service delivery process or the use of different channels for different service delivery processes, whereby the different channels relate to each other” (p. 46, Pieterson, 2009). Pieterson and Van Dijk (2006) argue that various types of channel strategies exist: parallel, replacement, supplemental and integrated positioning. The latter two positioning strategies are considered multichannel strategies. While in supplemental positioning, certain services are coordinated on

certain channels, all services are offered through all channels in integrated positioning. In supplemental positioning, governments offer various types of services via the most appropriate channels. In integrated positioning, governments guide their clients to certain channels and the channels refer to one another.

STATUS QUO OF PUBLIC SERVICE DELIVERY STRATEGIES

Despite the new strategies and improvements, the realization of effective and efficient service delivery proved to have been more complex than it had seemed. Several countries (e.g., Australia, Canada, Switzerland, The Netherlands) noted that clients often preferred to consume services via the traditional channels instead of electronic channels (Ebbers, Pieterson, & Noordman, 2008). Service provision had become increasingly complex with a palette of more channels than had ever been available before (Gognan et al., 2010). Furthermore, Gognan et al. (2010) noted that many studies focused exclusively on electronic channels and ignored traditional channels, while other aspects such as attracting interest are also important to make such a strategy a success. Moreover, governments have fragmented organizational processes, which hinder the use of a balanced multichannel management strategy (Klievink & Janssen, 2010). For instance, various departments are responsible for the operation of different channels. Therefore, Klievink and Janssen (2010) argue that a coordinated approach is necessary because government service delivery is characterized by various dependencies such as those among systems, channels, and services.

INCREASING FOCUS ON THE USER

At present, many governments still experience substantial demand through their more costly channels such as the telephone and face-to-face communication. A report of the OECD (2012) on demand management strategies demonstrates that this is the case. The report concludes that strategies to increase efficiency are available. According to the OECD (2012), a key component is to analyze the underlying reasons for or causes of demand for the more costly channels. The insights derived from such an analysis would allow for the development of "demand management strategies that will eliminate, reduce or shift the demand to more cost-effective service options" (p. 46, OECD, 2012). Although this indicates a user-centered approach, governments continue to adopt the supplier's—and not the user's—perspective by establishing goals intended to reduce the costs and increase the efficiency of government service delivery. The same approach is followed in the 2007 report. It is worth noting that the OECD has adopted a different multichannel management approach from those of Pieterson (2009), Ebbers et al. (2008), and Pieterson and Van Dijk (2006). This difference demonstrates the lack of a true user's perspective on the part of the OECD (2007; 2012). Whereas the OECD adopts a rather technical

approach (i.e., data synchronization, central data storage, etc.), Pieterson and colleagues approach multichannel management from a more behavioral perspective (Pieterson, 2009). The behavioral perspective adjusts channel management strategies towards the needs and tasks of the user (i.e., citizens and businesses). This dissertation agrees with Pieterson (2009) in the sense that the behavioral approach is more suitable to increase efficiency and customer satisfaction in service delivery. Moreover, the technical approach is based on needs of governments and neglects the actual needs of citizens and businesses as the users of services delivered by governments. Ebbers et al. (2008) argued that it is important to match the preferences of governments and those of their clients. Having discussed the strategies implemented by governments, the following section addresses research findings derived from the user's perspective.

3.2 GOVERNMENT SERVICE DELIVERY FROM THE USER'S PERSPECTIVE

We now turn to the user's perspective on government service delivery. As explained in chapter 2, this dissertation focuses on businesses. Therefore, this section only discusses the findings of research conducted in the B2G context. The goal is not to provide a complete overview of the available research findings on this topic but rather to provide a first insight into the type of research and associated findings in this context.

As noted in chapter 2, despite that businesses have more contact moments with the government than citizens, most research focuses on the channel choices of citizens instead of businesses. Therefore, this section is organized as follows. First, additional insights are provided on the business context. This is followed by relevant research findings on source choice and channel choice.

THE BUSINESS CONTEXT

Bergers (2003) notes that SMEs are a difficult group to communicate with, as the characteristics of this target group vary substantially (e.g., size, branch). She argues that SMEs focus on the core aspects of their business such as the core competencies of the business, turnover, client databases, profits, and image. In contrast, little attention is devoted to back office tasks (e.g., administration). Furthermore, when an organization's size increases, the need to divide tasks among the various employees also increases. Departments are formed in 48% of businesses employing 0 to 9 employees. The corresponding figure for businesses with 10 to 49 employees is 82%. Bergers (2003) observed that the managing director is the first contact person in 91% of SMEs. All information present in the organization flow—in the first instance—via the managing director. Consequently, the managing director has

numerous job responsibilities. A lack of time and knowledge on aspects that are considered to be secondary to organizational activities leads to the understanding that an organization's environment has substantial influence on how the organization operates (Bergers, 2003). Figure 3.1 depicts the persons or organizations that affect an entrepreneur operating his or her businesses. The first circle from the inside of the figure presents the parties with the greatest influence. Daily contact is assumed, which leads to the conclusion that these parties influence decisions made in the organization. Bergers (2003) argues that the presence of trust is crucial in this context. As governmental agencies have little influence, she argues that successful strategies for the government to influence firm behavior can be found in collaboration with parties in the inner circle (e.g., accountants).

As noted in chapter 1, this dissertation focuses on individual information-seeking behavior. Nonetheless, the results of Bergers (2003) emphasize the importance of contextual aspects in determining source and channel choices. Such aspects should be therefore included in the dissertation.

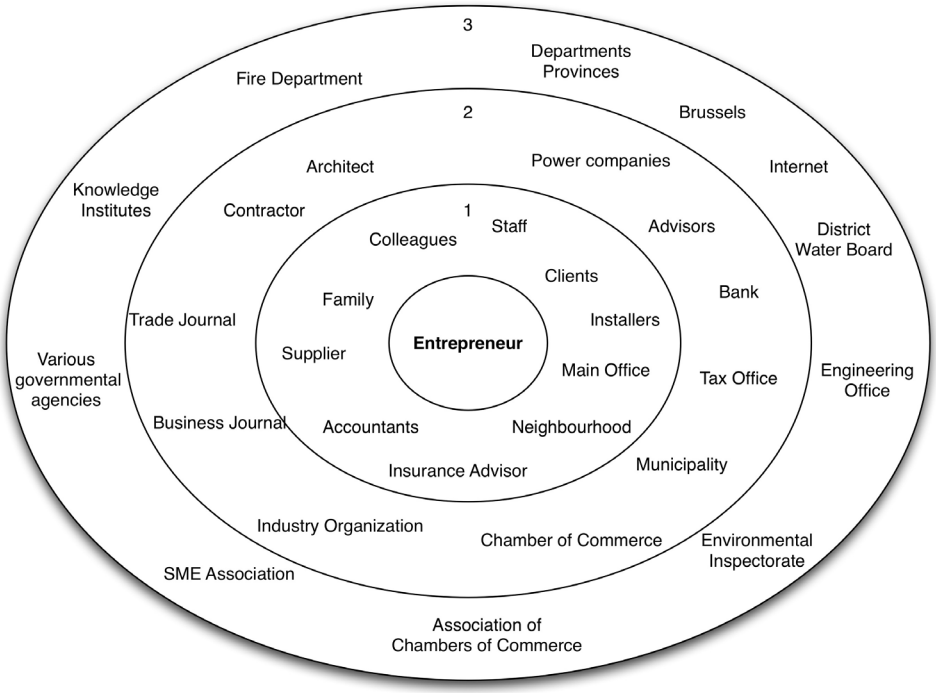

Figure 3.1 *An overview of sources that may affect the business environment (Bergers, 2003)*

The following two sections focus on the sources and channels that are the most preferred and used according to various studies conducted in the Dutch context of B2G service

interaction. These results help to determine which sources and channels should be included in this dissertation.

SOURCE CHOICE

This section will discuss the findings of various studies to provide initial insights into the source choice behavior of businesses seeking governmental information. Bergers (2003) distinguishes three types of information-seeking behavior among SMEs. The first type consists of entrepreneurs in small, dynamic industries (e.g., interior design). Their search efforts are primarily focused on general information, which is often obtained from industry organizations. Specific information is primarily obtained from sources such as accountants, advisors or controllers. The second group comprises entrepreneurs in moderately dynamic industries (e.g., installers). Similar to the first group, they obtain general information from industry organizations. Specific information is obtained from sources in their personal or formal networks and industry-related sources (e.g., trade journals). The seeking process is quite intense. The third and final group operates businesses in a highly dynamic industry (e.g., software engineering). Their information-seeking processes for both general and specific information are highly intense. Bergers (2003) notes that these businesses enrich and interpret the information obtained to suit the needs of their own business. The finding that SMEs adopt various information-seeking strategies, and thus consult various sources, again illustrates the complexity of B2G service interactions. It also informs us that many types of sources could be relevant in the context of this dissertation.

De Vos (2008) found that businesses' most frequently consulted sources are intermediaries (i.e., accountants and tax advisors) and industry organizations. Furthermore, the NTCA and ministries are regularly consulted. Businesses of varying sizes (from 1 to 500 employees, self-employed were not included) participated in an online survey on searching for information on legal regulations. Another result presented by De Vos (2008) concerns the observation that when the size of an organization decreases, the contact frequency with sources also decreases. Whereas De Vos (2008) studied actual source choice behavior, Jansen, et al. (2010) measured intentional behavior via direct questions on source (and channel) preferences. With respect to sources, they defined five main categories: search engines (e.g., Google), portals, governmental agencies, expert organizations and personal networks. However, in this dissertation, search engines are regarded as 'supporting channels' instead of information sources (see chapter 2). Nevertheless, the findings of Jansen et al. (2010) indicate that search engines are the most preferred, followed by the government and expert organizations. Van den Boer, Pieterson, Van de Wijngaert, and Arendsen (2012) observed that the NTCA and intermediary organizations are the most

popular sources to consult. However, businesses' most frequent contacts are their personal sources (e.g., colleagues, friends/family). This indicates that these types of sources could also be important for the dissertation. This supports Bergers' (2003) contention that colleagues, friends, and family are located in the inner circle, which includes the persons or organizations that exert the most influence on entrepreneurs. With regard to formal sources, financial advisors are contacted the most frequently, followed by the NTCA (Van den Boer, et al., 2012). While the most frequently consulted source seems to differ across studies, from the findings discussed above allow us to conclude that both the government and intermediaries (specifically expert organizations, such as accountants, and industry organizations) are the most popular sources. These sources should certainly be included in this dissertation. Other sources that may be of importance are personal sources. The following section focuses on findings related to channel choice.

CHANNEL CHOICE

By far, the most frequently selected channels to contact governmental agencies are websites and the telephone (De Vos, 2008). Other channels such as face-to-face communication and the mail are seldom employed. Furthermore, De Vos (2008) found that whereas citizens often selected the service desk (i.e., face-to-face communication) as the channel to communicate with the government, businesses rarely did. Efficiency is more important for businesses than for citizens. Therefore, businesses are more likely to deviate from their preferred channel and select one appropriate the task and situation. De Vos (2008) reported interesting results regarding the differences in channel use and channel preferences. As noted above, the website was the most frequently used channel in the Netherlands in 2008, followed by the telephone. In contrast, the most preferred channel was the telephone, followed by websites. Thus, the results indicate a contrast. The results indicate that the telephone is used less than preferences would suggest, while the opposite pattern was observed for websites. Using data from the Netherlands from 2009, Jansen et al. (2010) analyzed the channels of the Internet, telephone, and the service desk and found that the Internet is the most preferred channel when general or orientating information is needed. In contrast, specific information or highly important information leads to choices of the telephone or the service desk. These results are derived from responses to direct preference questions. The results of the vignette study –which measured actual choice behavior– were similar (Jansen et al., 2010). However, one exception was that the service desk was preferred in situations in which orientating information was sought.

Although most studies discussed in this and the previous section focused on both source and channel choice, they addressed the source and channel choices as independent choice

processes. In contrast, Van den Boer et al. (2012) analyzed the interaction between the selection of sources and channels. The main finding of their study was that businesses choose various source-channel combinations to obtain suitable information. With respect to governmental sources, the telephone is the most popular, followed by the website. For intermediary organizations, face-to-face communication is a popular channel. A similar pattern is observed for personal sources. The second most used channel to consult both sources is the telephone. For lobbyist organizations, face-to-face communication, the telephone and e-mail are frequently selected. According to these findings, Van den Boer et al. (2012) argue that the selection of sources and channels is interdependent, as different channels are selected to contact various types of sources.

From the findings discussed above, it is evident that the channels of websites and the telephone are by far the most frequently chosen when seeking governmental information. Furthermore, face-to-face and e-mail communication are regularly selected when consulting various sources. These four channels should be included in this dissertation.

3.3 OTHER PARTIES INVOLVED IN BUSINESS-GOVERNMENT INTERACTIONS

Thus far, research findings and the perspectives of governments and clients have been presented. It is now necessary to shed light on another element in B2G service interactions, as the interactions between these actors are not isolated but occur in a broader context. The previous section on source choice indicated that the government is one source in the network of the potential sources. Intermediaries (e.g., accountants, industry organizations) in particular seem to play a role in B2G service interactions. This section discusses the role of intermediaries in this context.

The changing role of other sources (i.e., intermediaries) in government-client interaction has been recognized in recent studies on both formal (Janssen & Klievink, 2009; Arendsen, Ter Hedde, & Hermsen, 2011) and informal intermediaries (Van den Boer et al., 2012). Arendsen and Ter Hedde (2009) noted that strategies and policies regarding the use of electronic channels primarily focus on direct service delivery to clients, while communication between governments and their clients increasingly occurs via commercial third parties. Recently, some have argued that it is desirable to involve intermediaries in an organization's service strategy (Janssen & Klievink, 2009; Arendsen & Ter Hedde, 2009). Janssen and Klievink (2009) focused on formal intermediaries and suggested a re-intermediation strategy, as they believe that intermediaries in government-client interaction provide added value. For instance, this strategy enables governments to adopt a

more demand-driven approach to service delivery. It also reduces complexity in addressing tax issues for both citizens and businesses. Moreover, the strategy improves information quality because intermediaries aid in the interpretation of information and ensure that the information provided by clients is correct. As a final argument, Janssen and Klievink (2009) contend that the use of intermediaries will reduce transaction costs via economies of scale.

However, even though few empirical studies exist on this topic, we can envision some drawbacks of the use of intermediaries. First of all, it raises the number of steps in the communication process (or degrees of separation in network terms (Monge & Contractor, 2003)), and this could increase the amount of noise in the communication process (Shaw, 1964), thereby rendering the communication process potentially less effective. A second drawback, which seems especially relevant in the context of (formal) B2G service interactions, is the question of accountability. Who is accountable for the quality of the information in a mediated communication processes? Is it the original source (i.e. the government) or the intermediary party? Given the legal ramifications involved, this could impact the feasibility of successful mediated communication processes. In addition, due to the combination of various types of sources, coupled with a wide variety of available channels to obtain information through, it is unclear whether the information they obtain is accurate or can be trusted. The original source of information is increasingly unclear for clients. These factors entail a diffuse interaction process, and how this affects information quality remains unknown.

As noted in chapter 2, in this dissertation, intermediaries are considered information sources, as we adopt a user's perspective. The notion that intermediaries should play an increasing role in public service delivery strategies emphasizes the importance of studying the role and added value of the information source in current (multichannel management) strategies.

PART II

RELEVANT THEORIES FOR STUDYING SOURCE AND CHOICE IN BUSINESS-TO-GOVERNMENT SERVICE INTERACTIONS

INTRODUCTION OF PART 2

The various models discussed in chapter 2 are consistent in recognizing that at least a receiver (i.e., business), medium (or channel), and sender (or source) are involved in communication processes. The focus of this dissertation is the communication process of businesses that search for information to solve their problems related to governmental service delivery. In order to have a proper understanding of businesses' behavior in B2G service interactions, we need a clear conception of the underlying factors regarding source and channel choices.

Current strategies regarding the channels used for governmental service delivery are theoretically rooted in the media choice literature. In these strategies, the medium or channel is focus of attention. Furthermore, by stressing the importance of the channel, the other components of the communication process (medium and receiver) have received lesser attention. Consequently, not only has the role of the source in the communication process been ignored, but the possible interaction effects between source and channel as well. This ignorance might be an explanation of the less than desired success of governmental service delivery strategies.

Thus, this lack of insight needs to be filled up and means that we have to search for theories beyond the media choice domain that do meet these expectations. Since choice making and decision-making are strongly related, it would be most obvious to zoom in on theories in the realm of decision-making. However, the focus of the current dissertation is not to study the different insights regarding rational and (inter)subjective choice making. A theoretical perspective that does pay attention to the role of the source is rooted in the information seeking behavior literature. Various models (e.g., Byström & Järvelin, 1995; Leckie et al., 1996) consider the choice of an information source not only as an important, but even as the first step in the action phase (i.e., actual information retrieval and interaction) of the information seeking process. Moreover, some of them provide insight into the interaction of source and channel selection (e.g., Saunders & Jones, 1990; Christensen & Bailey, 1997). These theories could aid in building better models for government service delivery and therefore deserve attention in this dissertation. Moreover, the example above shows us that the existing literature might aid us in gaining a better understanding of the communication processes that underlies business-government interaction. For this reason, the focus of this part of the dissertation is on existing theories and research.

The following additional research question will guide this part of the dissertation (RQb): *What insights can be derived from a review of existing empirical research findings regarding source and channel choice processes in the context of businesses-to-government service interactions?*

To gain a full understanding on this topic, the state of the art regarding media choice theories is discussed in chapter 4. This is followed by a discussion of existing theories on information seeking behavior that provide more insight into the role of the source, viewed from the perspective of the information seeker (chapter 5). This part of the dissertation ends with a discussion that that tries to piece together the various strands of research, thereby focusing on the interdependencies between source and channel.

CHAPTER 4

RELEVANT THEORIES ON CHANNEL CHOICE BEHAVIOR

Two well-known theories —which form the basis of many media choice theories— are Social Presence Theory (Short, Williams & Christie, 1976) and Media Richness Theory (MRT) by Daft and Lengel (1984; 1986). These theories are rooted in contingency theory (Conrad & Poole, 2012; Rice, 1992). That is, for effective and efficient communication the characteristics of the task at hand should be matched with the characteristics of a medium (Rice & Gattiker, 2000). MRT was originally developed to provide insight into how organizations process information, and was called Information Richness Theory (Daft & Lengel, 1984). MRT argues that "communication media used in organizations determine the richness of information processed" (Daft & Lengel, 1984: p.7). Media are supposed to vary in richness along a continuum, with Face-to-face conveying the richest information while written, formal documents convey less rich information (Daft & Lengel, 1984; 1986). Furthermore, the theory argues that different media are suitable for different tasks.

Albeit MRT is one of the most well-known theories of media choice, it is generally criticized for its rational approach (Webster & Trevino, 1995). Other forms of critique include, for instance, the poor operationalization of the concepts (Rice & Gattiker, 2000) as well as conflicting results regarding the media richness assumptions (e.g., Rice & Shook, 1990). The various forms of critique led to the notion that further development of the theory was needed (e.g., Rice, 1992; Valacich, Mennecke, Wachter, & Wheeler, 1994). Consequently, a variety of extensions and new theories have been developed. What unites these extensions is the assumption that choice making in the organizational context is more than just fitting tasks to media. Aspects such as social influence (Fulk, et al., 1990), symbolic meaning (Sitkin et al., 1992), available time and knowledge specificity (Choudhury & Sampler, 1997), and experiences (Carlson & Zmud, 1994; 1999) have been added in the past. More recently, Pieterson (2009) proposed a model of channel choice that incorporates the impact of situational and emotional constraints. Further, he argues that the process of choice making is dominated by habits rather than rational considerations.

Since numerous theories on channel choice exist, this section discusses only those that are relevant for the current dissertation. First, the theory should have its origin in the organizational context. Second, relevant theories should take into account various aspects of influence, or should explain a particular aspect and its influence in depth. Third, extra attention will be paid to theories that recognize the relationship and/or interdependency between source and channel.

4.1 CHANNEL CHOICE AS A SUBJECTIVELY AND SOCIALLY CONSTRUCTED CHOICE

The Social Influence Model (SIM) by Fulk, Schmitz and Steinfield (1990) builds on MRT's idea of matching tasks to media, but takes a fundamentally different approach by focusing on perceptions and experiences. Their model is shown in figure 4.1. They argued that "current media-use theories fail to recognize a central premise of current organization theory: Behavior occurs in a very social world which is far from neutral in its effects" (p.117). The relevance of SIM for the present study can be found in the notion that aspects of the direct environment of a certain individual who encounters a choice are of influence on the final choice.

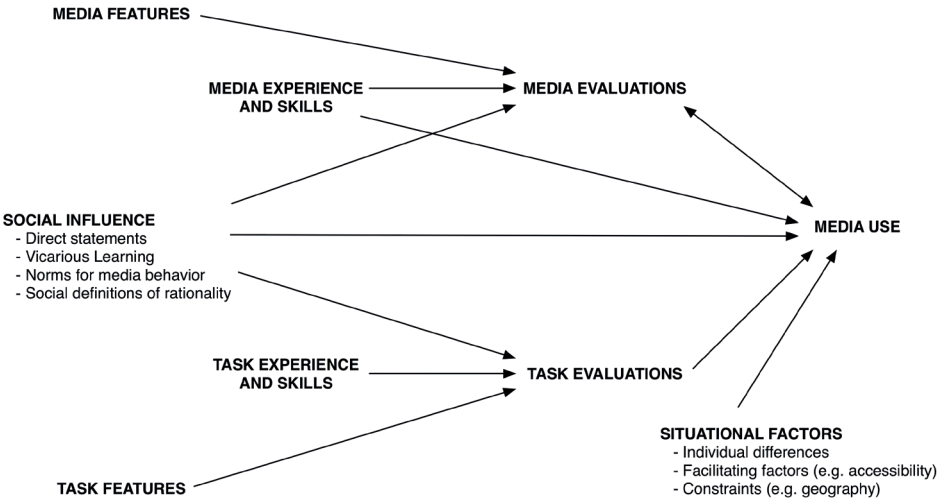

Figure 4.1 *Social Influence Model of Fulk et al. (1990)*

SIM starts with the same assumption as rational models such as MRT and states that individuals do process stimuli cognitively. However, it adopts a different perspective as it assumes that channel perceptions are not completely rational, but are subjectively and socially constructed. That is, individuals do not choose a channel solely on the objective characteristics of a channel. Instead, attitudes, opinions and behavior of others affect the channel choice as well. This is called social influence.

Social influence could occur in various forms. The first form is that of direct opinions of others about a certain channel (Salancik & Pfeffer, 1978). For instance, a colleague advises you to use the telephone with an urgent question, since he has experienced that an answer

via e-mail usually takes too long. It is probable that you follow his advice and decide to choose the telephone in this situation.

This example shows that perceptions vary across individuals and situations. The second kind of social influence is "vicarious learning", which is the experience of seeing others using a channel that could lead to that same behavior. This is based on Bandura's Social Learning Theory (Bandura, 1986). Imagine that you see a colleague making a phone call to discuss a complex issue. The colleague receives positive feedback since he or she has chosen a suitable channel. Based on this positive outcome, you may model future behavior on this experience. Further, Fulk et al. (1990) assume that "behavior is subject to social influence in the form of widespread norms and pressure for sense-making" (p.125). For example, it may be a norm in the organization to use e-mail regardless of the topic or situation. Consequently, employees will use this channel while it may not be the most efficient and effective channel to use in that particular situation. Finally, behavior could also be retrospectively rational, which means that someone rationalizes his or her choice behavior after the behavior has occurred. In this situation, one provides explanations for their past behavior. This assumption is based on the sense-making perspective of Weick (1979). In sum, Fulk et al. (1990) argue that "rationality is subjective, retrospective, and influenced by information provided by others" (p. 123).

As discussed above, Fulk et al. (1990) argue that social influences in various forms affect the use of media. It also affects media and task evaluations. Media evaluations are determined not only by social influences, also experience with media, derived skills and (objective) features of media are of importance. Similarly, task experiences, skills, and features of the task influence task evaluations. Further, SIM proposes that situational factors such as individual differences, facilitating factors (e.g., accessibility of the medium), and constraints (e.g., geography) affect media use directly.

SIM focuses solely on the choice of media and what this is predicted by. The model incorporates only causal relationships. It does not focus on the process of channel choice since, for instance, no feedback loops are included. Despite the notion that media choice is more than just a simple task-medium fit and the addition of various influencing factors, the model is still narrow in focus. First, SIM does not incorporate influences of events that occur around a specific moment of choice such as the stage of the information seeking process (e.g., orientation or problem solving). Second, although Fulk et al. (1990) argue that social influences are vital predictors of media choice, they lack in operationalization of the concepts and neglect other contextual influences such as organization size. Further,

apart from the poor operationalization and the notion that empirical evidence for the SIM is delivered in parts, various others validated the core notion of SIM (e.g., Rice, Grant, Schmitz & Torobin, 1990; Carlson & Zmud, 1994; 1999; Kraut, Rice, Cool & Fish, 1998). Since this dissertation focuses on choices of employees in the organizational context, the notion that influences from the social environment impact choices of individuals is considered as a relevant potential influencing factor and is included in this dissertation.

4.2 THE IMPORTANCE OF EXPERIENCES FOR CHANNEL CHOICE

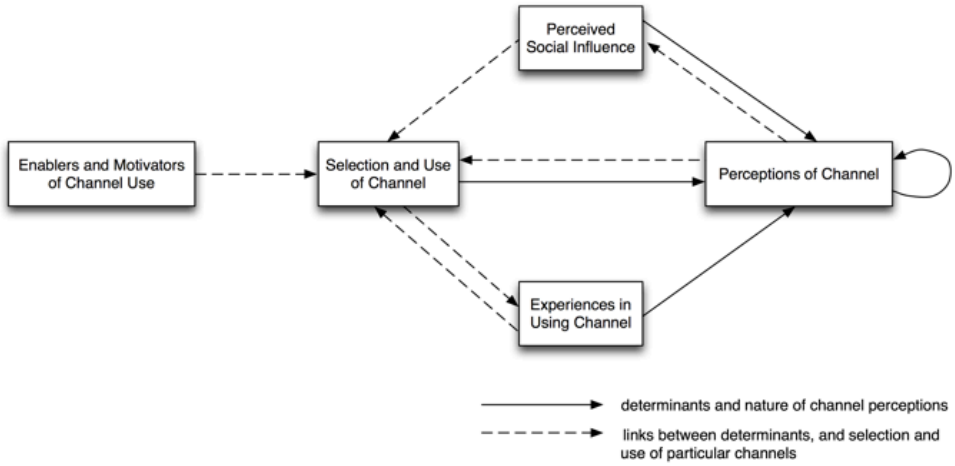

Figure 4.2 *Model of the Use and Perceptions of Communication Channels (Carlson & Zmud, 1999)*

Carlson and Zmud (1994; 1999) agree with Fulk et al. (1990) that choice behavior is subjectively and socially constructed. However, Carlson and Zmud (1999) do note that findings in the literature regarding the impact of social influences on media choice are inconsistent, particularly since the rise of new media. Various researchers also found conflicting results (e.g., Markus, 1994; Rice & Shook, 1990; Webster & Trevino, 1995). To correct this, their Channel Expansion Theory (CET) provides an explanation for these inconsistencies by arguing that – next to social influences – prior experiences of media use are strong influencers of media perceptions (Carlson & Zmud, 1994; 1999). Their model is depicted in figure 4.2. While SIM pays some attention to the aspect of experiences, prior experiences form the core of CET. The main contribution of CET is the notion that experiences determine the perceptions of channels, and indirect the selection of channels. Those experiences are divided in four different kinds: (1) experience with a given channel, (2) experience with the topic at hand, (3) experience with the organization-context, and

(4) experience with other communicators. It is argued that an increase in experience with a given channel will lead to an increase in the perceived richness of that channel as well. This is called the channel expansion effect. The same relationships are discovered for the other kinds of experiences, except for experience with the communication topic (Carlson & Zmud, 1999). However, the impact of channel experience on channel perceptions decreases when the other kinds of experiences increase. Further, although excluded from the study, CET assumes that enablers and motivators such as situational factors are of indirect influence on channel perceptions, via channel use.

As discussed above, CET argues that prior experience of a communicator with another communicator is a crucial aspect for the perceived richness of a certain channel (Carlson & Zmud, 1994). That is, as communicators develop a history of communication with each other, they will obtain knowledge and understanding of each other. As time progresses, richer information can be transferred through a specific channel than in the earlier stage. Hence, it can be inferred that the communication history between seeker and source —both regarded as communicators— affects both future channel use and the kind of information that is transferred through certain channels. This notion can be regarded as a hint for the role of the contacted source in the channel choice process. To illustrate this, an information seeker can contact the accountant as an information source via e-mail when there has been successful prior communication between both via this particular channel.

Although the CET published in 1999 is depicted as a causal model (see figure 4.2), the model contains some elements of a more sequential model. As the model incorporates both the selection and use of a channel, it implies that the focus of attention is not only the moment of choice. This notion suggests a more sequential nature of the model. Other indications of the sequential nature are the feedback loops, which show the effect of the prior experiences of channel use on channel perceptions and future channel selection and use. CET contains just a few concepts —channel perceptions, social influence and experiences— and can be considered therefore as ill defined. However, the combination of a causal and sequential nature supports the assumption that events around the moment of choice (e.g., prior experiences and use) affect future channel choice.

The original model of CET was published in 1994. Five years later Carlson and Zmud (1999) published empirical evidence for the general notion of the model. Whereas the proposed effects of channel experience and experience with the communication partner were supported, partial support was found for the effect of the organization-context, and only a marginal effect for the impact of the experience with the topic of the message (Carlson & Zmud, 1999). Whereas e-mail was the solely included channel in this study,

D'Urso and Rains (2008) included several channels in their study testing the channel expansion effect and found full evidence for the impact of all kinds of experiences. Timmerman and Madhavapeddi (2008) delivered consistent findings and noted that the theory is applicable to various kinds of channels (e.g., face-to-face, telephone, e-mail). It can be concluded that substantial support for CET has been delivered, which reflects the importance of experiences on the selection of channels in general and on the perceived richness in particular. Hence, this dissertation recognizes the importance of experiences as a factor and argues that theories should benefit from having experiences as an influencing factor for channel choice.

4.3 A DUAL INTERPRETATION OF CHANNEL CHOICE

Although often a single perspective on choice making is adopted, the Dual Capacity Model (DCM) of Sitkin et al. (1992) combines two perspectives (see figure 4.3). They consider the medium as follows: "A communication medium is a conduit through which data and meaning are conveyed or manifest" (p.564). That is, communication of information is more than just a transmission of objective information as also a transmission of meaning is involved. This dual interpretation is based on earlier research of O'Reilly and Pondy (1979). Sitkin et al. (1992) consider media as equal to channels, when they view the medium as the conduit of information. Originally, the concept of a medium as a conduit is related to the Shannon and Weaver (1949) model of communication. Hereby, the medium is seen as "a container for information that can be characterized by how much information it can convey" (p. 566). This is also called the data carrying capacity (Sitkin et al., 1992). The symbolic conception is rooted in the approach of McLuhan (1964) of the medium is the message. It is conceptualized as the symbol carrying capacity of the medium, since the meaning of a medium depends on the situation. For instance, e-mail can be interpreted differently from organization to organization. Whereas in one organization it is common to send e-mail, it can be viewed in another organization as impersonal.

Besides this dual conception of a communication medium, Sitkin et al. (1992) included various other factors that affect media choice. The first of those factors are task contingencies. It consists of characteristics of the task (e.g., uncertainty, analyzability (equal to ambiguity in MRT), and urgency) and the message (e.g., complexity, clarity, data volume, and whether the message contains positive or negative news). The second factor consists of communication capability constraints, which is the umbrella term for characteristics of the sender, receiver and the organization. Competency, media-accessibility, flexibility, and level of self-monitoring are examples of sender characteristics. Characteristics of the receiver

are level of education, knowledge and familiarity with a medium and the topic. Besides, also communication history between sender and receiver is assumed to be of influence. Organizational characteristics are for instance experience, structure, available time, and needs. The third factor contains normative contingencies, which covers cultural norms, role expectations (the symbolic meaning of a medium differs from position to position), and institutional expectations (the meaning of a medium for the entire organization or branch).

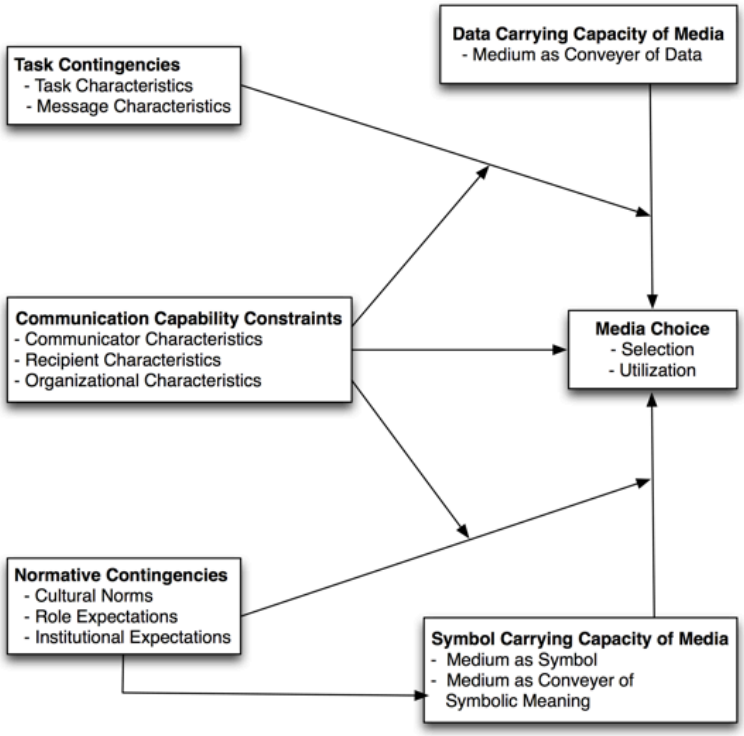

Figure 4.3 *Dual Capacity Model (Sitkin et al., 1992)*

Empirical evidence of DCM is scarce. Although some citations exist (e.g., Stephens & Davis, 2009; Chang & Yang, 2012), evidence for the entire model has not been published so far. The relevance of this model to this research can be found in the addition of especially the communication capability constraints and normative contingencies. On the one hand, Sitkin et al. (1992) assume that characteristics of the sender, the receiver as well as the organization are of influence on the choice of media. It can be inferred that the media choice of an information seeker is determined by characteristics of the seeker themselves, the one where whom is obtaining information from (i.e., the information source), and the interaction history between both. On the other hand, DCM argues that normative contingencies affect

media choice. This implies that position of the employee (i.e., the information seeker), as well as the kind of organization, influence media choice due to the various meanings media have on both levels. These meanings lead to various expectations in media behavior of the information seeker. Thus, although empirical evidence for this model is scarce, Sitkin et al. (1992) provide some interesting indications. The first indication considers the impact of the organization on the seeker's media choice. The other indication refers to the assumption that aspects of the seeker affect media choice, but also the other – where the information is obtained (i.e., the source) – and the interaction history between both are vital. Since this theory incorporates implicitly the impact of the source as well as organizational influences, both indications are considered to be crucial to this dissertation. Therefore, personal and organizational characteristics as well as source and relationship characteristics are taken into account.

4.4 THE IMPACT OF SITUATIONAL FACTORS

More recently Pieterson (2009) proposed a model of channel choice of individuals and provided some empirical evidence for the earlier discussed models in this chapter (see figure 4.4). Pieterson (2009) agrees with SIM and DCM that characteristics of tasks and channels are subjective and varied from individual to individual. Further, the model is in line with CET as it recognizes the influence of experiences on future channel choice. Nevertheless, his main contribution can be found in delivering detailed insight in the impact of situational factors on channel choice, which was missing in SIM and DCM. Moreover, he claims that situational factors (e.g., available time and geographical distance), as well as emotional aspects are of more importance to the selection of channels than assumed before. The model suggests that individuals select those channels that take as little time and effort as possible. For instance, the channel that is close by will be chosen above all other channels. Further, individuals tend to choose – in first instance – the same preferred channel regardless the task at hand; at second instance perceived characteristics of task and channel are taken into account, which makes it a more elaborated choice. A more elaborate consideration will be made when, for example, the complexity of the task is perceived as high. Concerning the more straightforward tasks habitual decision-making seems more obvious.

Whereas the model of Pieterson (2009) originated from empirical findings in the government-citizen context, this dissertation focuses on the government-business context. Apart from the evidence delivered while testing the model, there was no further empirical validation.

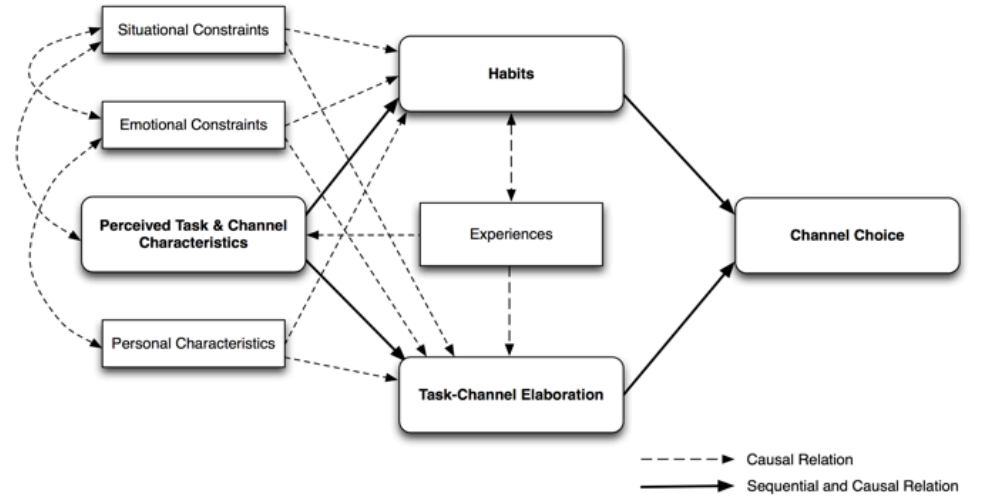

Figure 4.4 *A sequential framework of the channel choice process of individuals (Pieterson, 2009)*

Nevertheless, both SIM and DCM have recognized the impact of situational influences in the organizational context, which supports the claim that these factors strongly affect the selection of channels. Thus, the relevance of this model to this dissertation can be found in the notion that situational factors strongly affect the selection of channels. As discussed in chapter 3 it is argued that the business context is far more complex than the citizen-context. This indicates that the tasks businesses have to cope with are complex and, therefore, ask for a more elaborated consideration according to Pieterson's model. Hence, only the notion that situational influences affect channel choice is considered as relevant for this dissertation and will therefore be incorporated in this study.

4.5 SUMMARY OF THE RELEVANT INSIGHTS

The primary objective of this chapter was to review relevant existing theories with various perspectives on media choice of organizations. Whereas the selection of media in the early literature starts with a simple fit between task and medium, the subsequent models provide consistent findings that numerous aspects influence the selection of channels. In general, apart from the well-recognized influences of perceived channel and task characteristics, factors such as situational aspects, experiences, and social influences are considered to be of importance as well.

However, the discussed media choice models seem inadequate to the current situation for several reasons. First, it seems obvious that most considered media choice models solely

include on causal relationships. Their main focus point is media choice and its determinants (e.g., task characteristics, situational factors, experiences). Possible influential aspects that occur around the moment of choice (e.g., the use of the channel itself) are frequently neglected. Exceptions are the models of Carlson and Zmud (1999) and Pieterson (2009). Both seem to recognize the influence of events around the channel choice. Carlson and Zmud (1999) have incorporated channel use and argue that experiences while using the channel affect channel perceptions and future channel choice. Pieterson (2009) studied both first and second channel choices and incorporated sequential relationships as well.

Second, as media choice itself is the main focus point a real actor-centered approach is lacking. Some theories such as MRT and CET simply pass over the possible effects of the user characteristics on channel selection. SIM mentions that individual differences are of importance, however, no further explanation of the exact impact and meaning is provided. Pieterson (2009) recognizes the influence of personal characteristics, and also Sitkin et al. (1992) argue that characteristics of the communicator influence channel choice. Nevertheless, starting point of both models was to find determinants of channel choice. And as, for instance, Pieterson (2009) included only a single organization (i.e., information source) and the use of its available service channels; it indicates a lack of an actor-centered approach.

By not adopting or even not recognizing the perspective of the actor, other aspects that affect choice making can be simply neglected. This leads to a third aspect that media choice models ignore: the influence of the organizational environment seems poorly examined. Except for the model of Pieterson (2009) and the early-developed MRT, all models recognize to some extent the influence of the organizational environment. However, just a few aspects of the environment seem to be taken into account. SIM and CET only consider social influences from colleagues and the social norms in the organization to be of influence, for example. Other aspects such as organization size and position of the actor in the organization are left out.

The fourth and final point concerns the role of the source in relation to channel choice. As manifested in part l, it is important to incorporate the source in research on channel choice behavior, for both practical and theoretical reasons (see chapter 3 and 2, respectively). While all discussed media choice theories are built upon MRT to some extent, none of them actually differentiates between the concepts channel, source and medium as MRT did. In contrast, all of them narrowly focus on the channel or medium and ignore the (potential) difference and interdependence between these concepts. Moreover, they neglect the role of the information source in the communication process.

Although the source is not explicitly involved, CET seems to assign some influence of the information source on channel choice. More specific, it is assumed that experiences with the co-participant affect the selection of the channel. Likewise, DCM indicates that prior experiences (i.e., communication history between two communicators) of a seeker with a source determine to some extent channel choice. Albeit DCM received the least empirical evidence of the discussed models, the indications for the importance of source choice for channel selection are most prominent. Next to the impact of the interaction history, also sender and receiver (i.e., seeker and source) characteristics are supposed to be of influence. Conversely, SIM solely focuses on media choice and contains no indications regarding any impact of the chosen information source. Despite of the indications for a relationship between the source and the channel, it remains difficult to derive more detailed insights into this relationship from the discussed models.

To shed more light on the role of the source in the process, the next chapter focuses on literature regarding information seeking behavior, in which source choice fulfills a prominent role. In addition, more insights in the source-channel interdependency will be derived from this research domain.

CHAPTER 5

RELEVANT THEORIES ON SOURCE CHOICE BEHAVIOR

The previous chapter discussed theories that focus on the selection of channels. This chapter focuses on theories that incorporate both sources and channels, but primarily focus on the selection of sources. Many of these theories seem rooted in the realm of information behavior, specifically information seeking behavior. Besides, there are several other aspects that manifest the relevance of these types of theories for this dissertation.

Similar to theories in the media choice literature, some theories on information seeking have a causal nature (e.g., Johnson, 2003). However, others describe a sequential process of information seeking (e.g., Ellis, 1989; Kuhltau, 1991), and some combine sequential and causal relationships (e.g., Ingwersen, 1996; Byström & Järvelin, 1995). These theories are rather complementary to channel choice theories by adding sequential aspects.

Another aspect that underlines the relevance of information seeking theories for this dissertation is the use of an actor-centered perspective. In contrast, theories on media choice behavior focus on a single source and often neglect aspects of the user. Various researchers (e.g., Vakkari & Kuokkanen, 1997; Wilson, 1999; Pettigrew, Fidel, & Bruce, 2001; Ingwersen & Järvelin, 2005) compared models from the early literature up to approximately 1985 with models generated after 1985. In general, models developed before 1986 (e.g., Allen, 1969; Wilson, 1981; Krikelas, 1983; Paisley, 1986) are criticized because of their limited scope and approach from the perspective of information systems and its users, which delivers an unrealistic and distorted image of the information seeking process in practice (Ingwersen & Järvelin, 2005). However, a call for enrichment in the field came from Dervin and Nilan (1986). This call induced a major shift from a systems perspective towards a more actor-centered approach where questions of why actors behave as they did gained more importance. Ever since, it is well established that models on information seeking behavior involve aspects such as context, situation, various kinds of tasks, and the flow of the entire seeking process (e.g., Pettigrew et al., 2001; Ingwersen & Järvelin, 2005). The model of Johnson, Donohue, Atkin and Johnson (1995) is a typical example of a model that focuses attention on the actor (i.e., the information seeker). Main focus of their study was the imperatives that motivate an individual to start an information seeking process. In other words, what is the impact of the individual's condition (i.e., demographics, personal experience) on choices in the seeking process? And what determines the likelihood that someone will take action and starts a seeking

process? Another example is the study of Julien and Michels (2000) that explicitly adopts the sense-making perspective of Dervin (1983; 1992). This study focuses on aspects of the situation that triggers information behavior, instead of narrowing down to a single type of source. Also Ingwersen and Järvelin (2005) focus attention to the actor in their general analytical model of information seeking and retrieval. They argue that information seekers are cognitive actors surrounded by influential social, organizational and cultural contexts. All these new models provide a more realistic depiction of the information seeking process today, since they cover influences from context and situation, for instance. Hence, knowledge from the information-seeking domain can deliver a main contribution to the present knowledge in the media choice area, since those models focus on exactly those voids observed in existing media choice models.

In addition, whereas the models regarding media selection build up on each other and reflected, adapted and criticized each other's theory, the models focusing on information seeking seem to have been developed rather independently. As McKenzie (2003) notes, most developed information seeking models lack incorporation of existing findings. In addition, Hewins (1990) found that relevant literature on this topic is not limited to one discipline, but rather scattered. Hence, the abundance of existing models on information seeking interferes with the provision of a comprehensive overview of all existing models. In order not to drown in hundreds of models, it was decided to zoom in only on models that focus on the work context, since the current research considers the information seeking process of businesses.

This chapter is organized as follows. First, several theories will be discussed that incorporate choices of both source and channel, contain sequential as well as causal elements, and recognizes similar influencing factors compared to chapter 4. However, as shown in chapter 2, definitions of the concepts channel and source vary across information seeking theories and the concepts are often used interchangeably. As a consequence, it is difficult to determine whether there are differences concerning the factors that affect channel and source choice. This leads to the overall observation that most of the discussed theories in chapter 4 —and the theories we will discuss next in the present chapter— ignore the (in this dissertation proposed) interdependence between source and channel choices. Nevertheless, towards the end of this chapter two theories are discussed that touch upon interaction between source and channel.

5.1 IMPACT OF TASK ON CHOICES IN INFORMATION-SEEKING PROCESSES

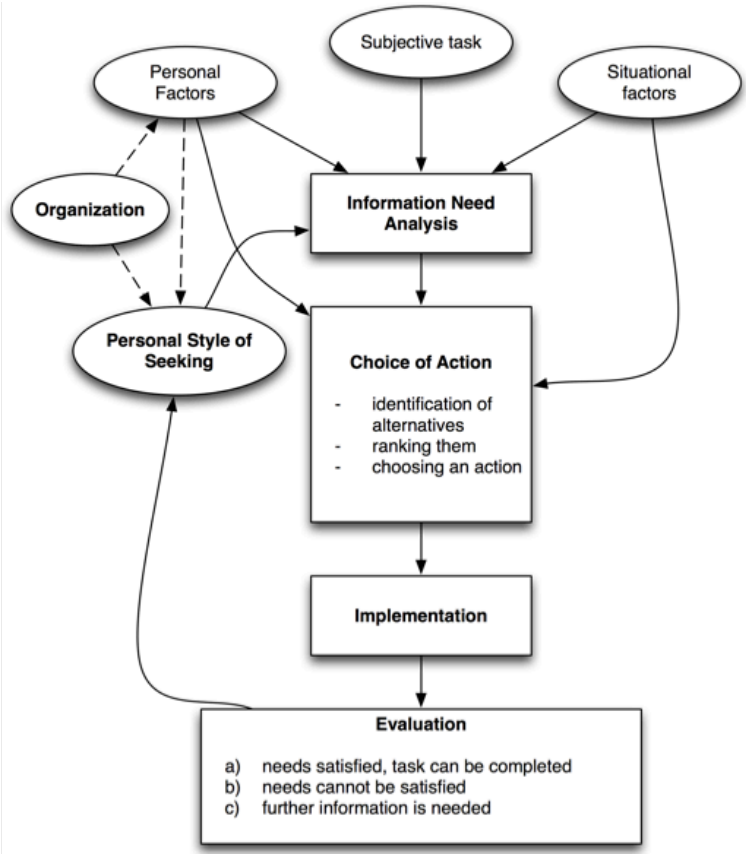

Figure 5.1 *The Byström and Järvelin (1995) model of information seeking*

Main point of the information-seeking model of Byström and Järvelin (1995) is that people use various channels and sources in their search for various types of information while performing various tasks (see figure 5.1). It is a holistic model that stems from models of Feinman et al. (1976) and Mick et al. (1980) and has its roots in the information science. It was developed in the intra-organizational context, where an employee is performing a certain task (i.e., problem solving). Byström and Järvelin (1995) adopted the perspective of the employee. They adopt the notion that perceptions of tasks and the information seeking process in general should be considered as each employee may interpret the same task differently. They consider the perception of the task as the main starting point for the interpretation of an information need and choices and actions during the information

seeking process. One of their core findings while testing their model is the successful completion of the information seeking process in terms of finding appropriate sources declines, when the complexity of a task increases. Likewise, as task complexity increases people use more sources in general, choose more internal channels, and perceive a higher need for both domain and problem solving information.

The model contains causal as well as sequential elements, since both influencing factors and general phases of the information seeking process are included. The model starts with the phase of recognizing an information need, which is affected by the perceived task, and personal (e.g., education, experience, attitude, etc.), organizational, and situational (e.g., available time) factors.

Next, which actions are chosen depends on the information need, personal style of seeking and again personal and situational factors. The action phase consists of identifying, ranking and selecting information channels and sources. These can be internal or external in terms of location (e.g., inside or outside the organization). Here, the perceived accessibility (cognitive, physical or economical) of channels and sources is also of importance. Once sources and channels have been selected and implemented, the results are being evaluated to determine if the information need is satisfied, or that further information is needed (e.g., a complex task may require several processes) or the need cannot be satisfied at all.

Researchers criticized the model of Byström and Järvelin (1995) for having a limited scope by focusing only on problem solving issues (Vakkari & Kuokkanen, 1997), and for being to narrow in terms of context (Järvelin & Wilson, 2003; Case, 2007), since it is developed and validated only in the working-context. Nevertheless, our research takes place in exactly this type of context; the working-context. Further, they used a combination of quantitative and qualitative methods to build the model. This has resulted in detailed descriptions and insights of information seeking in the working context. Consequently, it was possible to conduct thorough additional research to validate and develop the model (Järvelin & Wilson, 2003). Vakkari (1998) argues that the model can be considered as an enrichment of the knowledge and understanding regarding the information seeking process in general and the importance of task complexity specifically. The model delivered a major contribution in terms of precision and scope (Vakkari, 1998).

Although Byström and Järvelin (1995) did not test the entire model, empirical evidence for (parts of) this model has been delivered by various studies. This has led to thorough development and growth of the model (Järvelin & Wilson, 2003). Vakkari and Kuokkanen

(1997) and Vakkari (1998; 1999) refined and extended the original model of Byström and Järvelin (1995). Vakkari and Kuokkanen (1997) explicated the relationship between tasks and the use of information sources, for instance. The researchers themselves examined elements of the model in other studies (e.g., Byström, 1999; Byström, 2002; Järvelin, 2004; Byström & Hansen, 2005). In addition, evidence for the relationship between the kind of task and the choices people make in their search process has been found in many other studies in information science (e.g., Ingwersen, 1996; Ingwersen & Järvelin, 2005; Leckie, et al., 1996) as well as in communication science (e.g., Daft & Lengel, 1984; 1986, Fulk, et al., 1990).

Finally, a relevant aspect of the model is that both causal and sequential elements are ncluded. It was found that various factors such as situational factors are of influence in various phases of the information seeking process. On the one hand, this makes it more complex, on the other hand it seems a more complete and realistic depiction of the practice. Byström and Hansen (2005) argued that a full understanding of information seeking activities could not be achieved without adopting a broader perspective by involving various influencing factors (e.g., context and situation) in the whole process. Other models such as the model of Wilson (1981) and the model of Savolainen (1995) are only sequential in nature, or just a list of important concepts, rather than explaining and specifying the direction of relationships. Comparing this to the media choice theories, the contribution of the Byström and Järvelin model can be found in the insight they provide about when (i.e., on which moment or stage in the information seeking process) which factors are of importance. This knowledge can be merged with the knowledge derived from media choice theories that mainly provide knowledge about the underlying influencing mechanism. Hence, the combination of causal and sequential elements in the model of Byström and Järvelin (1995) can be considered as a starting point for the constitution of the synthesis between the media choice and information seeking research domains.

5.2 INFORMATION SEEKING OF EMPLOYEES IN VARIOUS PROFESSIONS

Leckie et al. (1996) developed a model of information seeking that is based on an analysis of existing literature – in library and information sciences – regarding the information seeking behavior of employees in various professions. They claim that their model is generalizable across all kinds of work roles or professions. The main premise of the model is that work roles and related tasks of employees trigger and shape an information need that leads to an information seeking process.

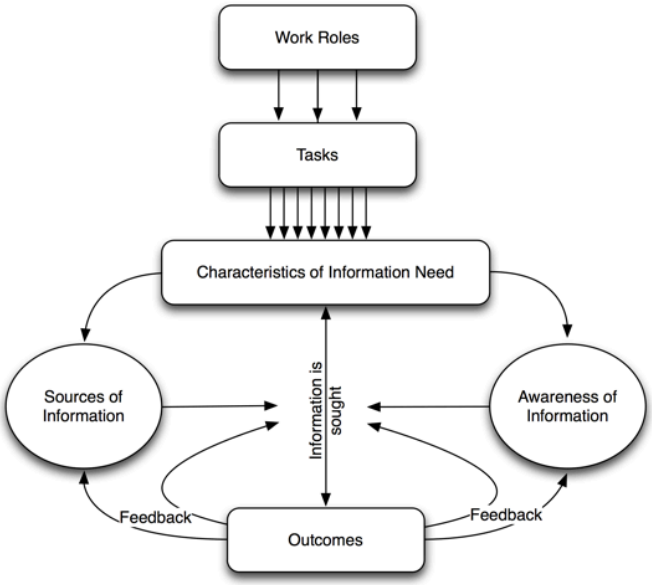

Figure 5.2 *The Leckie (1996) model of information seeking*

The model is depicted as a causal process flowing from top to bottom, which also visualizes various phases in the information seeking process. This flow from the recognition of an information need, to the information seeking activity and finally the outcomes of the process (see figure 5.2). The activity of information seeking itself is influenced by the selection of information sources and the awareness of information. Apart from providing numerous examples and characterizations of sources (e.g., formal/informal, internal/external), the influencing mechanisms of the information source on the seeking process remain unexplained. However, the influencing mechanisms of information awareness are explained by arguing that the seeker's general awareness about information sources and their content will shape the information seeking process (i.e., which choices are made). The main variables for awareness are thought to be familiarity and prior success with a source, together with trustworthiness (i.e., reliability), packaging (e.g., convenience and usefulness), timeliness, cost, quality, and accessibility of the source. Besides, the outcomes of the seeking process are greatly influenced by variables such as career stage and geographic location. When an outcome of the process is not as desired and further information seeking is needed, the process starts all over again. This is shown by the feedback loop in the model. Moreover, Leckie et al. (1996) argue that it is possible that all components in the model occur simultaneously, which implicates the true complexity of the work life.

Leckie et al. (1996) themselves did not provide any (new) empirical support for the model. Instead, the presented empirical evidence in their paper originally comes from the analyzed studies. As a consequence, the various components as well as the relationships between the components in the model are not discussed in much depth. It remains vague whether Leckie et al. (1996) propose a causal or sequential relationship between specific aspects. Indeed, they argue that all components can occur simultaneously. This is similar for the exact meaning and mechanisms of the various relationships, which remain unexplained. However, this weakness of the model could also be turned into a strength. It is one of the few that explains the information seeking process of people in various working contexts by integrating various findings into one model. This implies that the model is useful for depicting an overall picture of the information seeking process. That is, the model gives an idea of which elements and relationships matter without extensive explanations. Main aspect of influence is considered to be the role of the employee in the organization, which is relevant to the present context since employees in various roles could be responsible for the tasks (e.g., financial issues of an organization) under study. For this reason the position of the employee will be included in our research as one of the personal characteristics.

5.3 INDIVIDUAL AND ORGANIZATIONAL INFLUENCES ON CHOICES

Although the models discussed so far were developed in the organizational context, they did not specify the (possible) influence of that same organization on the information seeking behavior of the employee in question. Byström and Järvelin (1995) did mention the organization as one of the influencing variables, but did not explain or measure the variable while testing their model. The same is true for the influence of personal factors of the seeker. Moreover, Leckie et al. (1996) did not mention the potential influence of the organization nor the personal factors at all. But we can ask ourselves whether and to what extent the choices with respect to the information seeking process are determined by the personal characteristics of the employee itself and by influences from the environment of the employee in terms of the organization?

Baldwin and Rice (1997) did study the influence of both individual and organizational aspects on information seeking activities. In their theoretical model they propose direct influence of individual characteristics (e.g., gender, age, years of experience, education, marital status, etc.) and organizational resources (e.g., staff size, budget and costs, type of organization, size and location of organization, use of databases and libraries in general and individual) on the selection of channels (see figure 5.3). Both direct and indirect

influence of these variables was assumed – via the selection of channels – on outcomes of the information seeking activities. They found empirical evidence for the direct influence of organizational resources on the selection of channels and outcomes. The supposed influence of individual characteristics was not supported in their study. All this implies that employees seeking for information are more guided by existing norms in the organization for the use of for example libraries and databases, along with more general influences such as staff and organization size and type of organization.

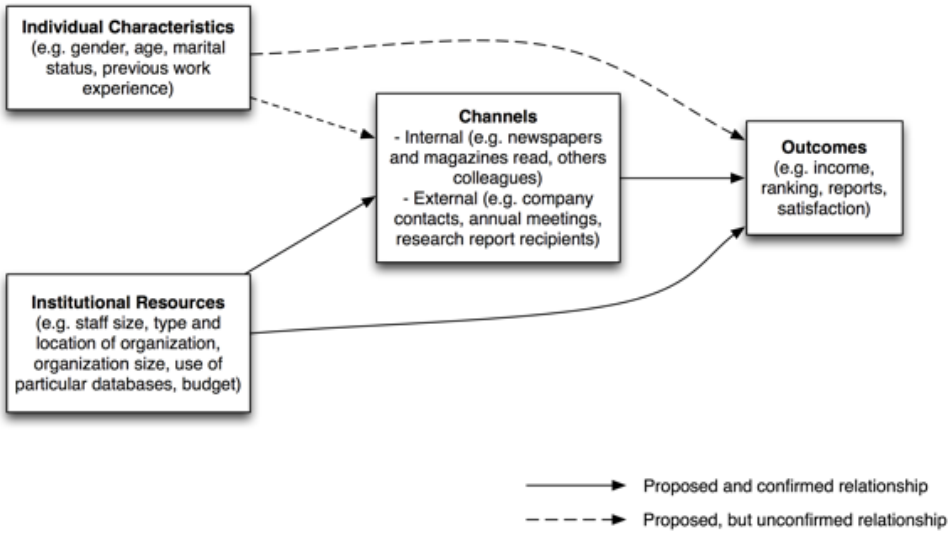

Figure 5.3 *Proposed theoretical model of Baldwin and Rice (1997) involving individual characteristics, institutional resources, information sources and communication channels.*

Baldwin and Rice (1997) conducted their research only among securities analysts, which limits the generalizability of their findings to other organizations. In particular because the kind of role the employee fulfills in the organization is of strong influence –in both aforementioned models of Byström and Järvelin (1995) and Leckie et al. (1996)– on choices made in the information seeking process. Nevertheless, the examined influences of individual and organizational aspects were studied in depth by getting qualitative data and the participation of analysts across several organizations varying in characteristics such as size and branch. Moreover, by only including securities analysts, the variable of the working role was kept consistent across the participants, which made it possible to study the influence of individual characteristics that are not necessarily work related. The main contribution of the Baldwin and Rice (1997) model is the explanation of specific effects, rather than providing insight in the sequential nature of choice making in the

information seeking process. The insights derived from this study can be considered as rather complementary to the other models. It congregates with media choice models in such a way that it provides a deeper understanding of the impact of the organizational context on choice making. These findings underline the importance of incorporating organizational aspects in this research and are therefore taken into account.

5.4 INFORMATION ACQUISITION TO MAKE DECISIONS

As the models discussed above mainly focus on problem solving issues that trigger the information seeking process, Saunders and Jones (1990) focus on decision making as the trigger to search for information (see figure 5.4). In other words, one seeks information to obtain more knowledge and information for making a thoughtful decision. Literature in the decision making discipline was combined with communication literature, as they argued that previous research has failed to capture the temporal and dynamic aspects of information acquisition (Saunders & Jones, 1990). As a first step in filling this gap in the literature, they proposed a general and preliminary model of information acquisition in the organizational context accompanied by propositions for causal relationships.

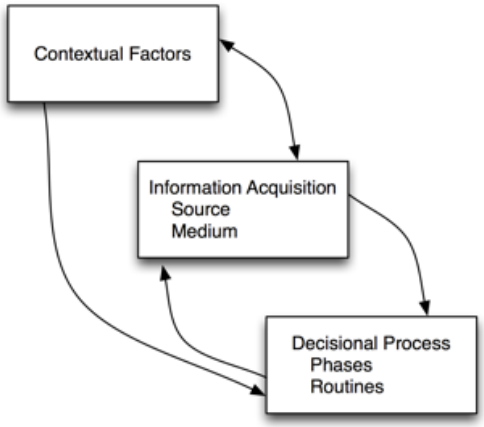

Figure 5.4 *A general model relating information acquisition to the decision-making process (Saunders & Jones, 1990)*

The proposed model of Saunders and Jones (1990) contains three main components: (1) the decisional component, which is based on Mintzberg, Raisinghani, and Theoret (1976), (2) the information acquisition component, and (3) the contextual component. The decisional process flows through from the stage of identification, through development

to the selection phase and has several corresponding routines (e.g., recognition, search, screen and evaluation/choice). The component of information acquisition covers the selection of information sources and media in transferring the information from the source to the seeker. The contextual component involves various influences from the context on the selection of sources and media: (1) decision arrival time, (2) number of simultaneous decisions, (3) perceived importance, (4) established interaction patterns (i.e., symbolic interaction), (5) the information environment of the organization, (6) time pressure, and (7) characteristics of the problem at hand. Saunders and Jones (1990) argue that those contextual influences affect the selection of both media and sources, which, in turn, occur across the whole decision making process. In other words, there is no specific point or phase in the process to determine where media and source selection takes place since it occurs throughout the various phases. The model developed by Saunders and Jones (1990) is a pretheoretical model and is presented as a fundament and motivation for future research. Empirical validation of the model is scarce —some evidence was collected by Jones, Saunders and McLeod (1993)— and their proposed distinction between source and channel has not been addressed later in the literature in more depth. Moreover, electronic media were not included in both studies, which impede generalization for information seeking in today's information environment with numerous electronic channels available.

Although the causal relationships are not discussed in detail, they include various contextual aspects that are supposed to affect channel and source choices and in the end the entire process. They argue that different contextual aspects affect the process at different moments. Likewise, different sources and channels are suitable for various stages. Exactly these elements are missing in most media choice models. Altogether, the model of Saunders and Jones (1990) congregates with media choice models at the point that this model explains in which phases of the process channel and source choice occurs, and which aspects of context are of importance for each stage. Although media choice theories strongly focus on the effects of influencing factors, they lack in insight about the moment in the information seeking process these factors become of importance. Saunders and Jones (1990) studied exactly the latter, though they provided little insight into how the factors influence choices. The derived knowledge from both domains can be merged at this point.

5.5 INTERPLAY BETWEEN SOURCES AND CHANNELS

Saunders and Jones (1990) and Jones et al. (1993) did not include electronic media in their studies because of the little use of those media at that time. Conversely, Christensen and Bailey (1997) conducted their study only a few years later. They noted that the raise of

electronic media facilitated a growth of staggering pace in the access to and the amount of information. As a result source selection has become increasingly important, which was considered as a motivation for Christensen and Bailey (1997) to examine the interaction between the selection of media and sources regarding information acquisition. Surprisingly, it remains unclear if they actually included electronic media in their study since they mention only the telephone, face-to-face, informal and formal written as channels. Moreover, they suggest in the conclusion section that studies involving electronic media such as e-mail are needed.

They argue that the channel through which the information is transferred from source to the seeker is not independent from the kind of source selected. In a scenario-study they found that source accessibility and routineness of the task moderate the selection of a channel. They found that for equivocal tasks lean media are selected in case of restricted access to certain sources (i.e., rich channels are not available). In contrast, for unequivocal tasks rich media will be chosen when lean channels are unavailable due to restricted access. Thus, the linear relationship between task equivocality and media richness no longer persists when source accessibility is restricted. Even though support was found for their claim that sources and channels interact, their explanations are somewhat superficial and brief. Unfortunately, only the notion of source-channel interaction is argued, but the underlying mechanism behind this interaction or examples of this interaction remain unexplained. The same is true for the conclusion section, although they present an abundance of suggestions that might be fruitful to test and explore the interdependency between channels and sources. For all of these reasons, the contribution of Christensen and Bailey (1997) should be considered as a call for future research, accompanied by some indications for the existence and importance of source-channel interaction. The synthesis of this model with media choice models can be found in the notion that the selection of a source is interrelated with the choice for a channel and which factors indicate and affect the interaction.

5.6 SUMMARY OF THE RELEVANT INSIGHTS

This chapter discussed various models all of which have something to do with the selection of channels and sources during information seeking in the work context. The discussed models in this chapter differ most in their focus as some models examine the entire process (Leckie et al., 1996; Saunders & Jones, 1990) and some study particular elements extensively (Baldwin & Rice, 1997; Christensen & Bailey, 1997). The model of Leckie et al. (1996) is an integration of numerous existing models, has a broad focus, but the various elements are not discussed in much depth. Conversely, the model of Byström and Järvelin

(1995) is thoroughly explained and further examined in other studies (e.g., Vakkari & Kuokkanan, 1997; Vakkari, 1998; 1999). This has led to refinement and extension of the original model. Therefore, most useful to the current research is the latter model, which helps to understand the impact of factors such as task and situation on choices in the information seeking process.

Leckie et al. (1996) and Byström and Järvelin (1995) mention the influence of individual and organizational factors, however, they both lack thorough explanations or examinations of those influences. In contrast, Baldwin and Rice (1997) decided to focus just on the influence of these aspects. Organizational factors were found to be of influence on the selection process of channels and sources. The proposed influence of individual aspects was not supported. With these findings Baldwin and Rice (1997) elucidates the importance of the organizational impact on individual choices. Similarly, Saunders and Jones (1990) argue that the organizational environment –as an aspect of context– influences the selection of sources and channels as well as the whole decisional process.

Common to all discussed models is the recognition that context of the individual seeker highly influences the information seeking process. Context should be interpreted in its broadest sense as it includes various aspects across the discussed models. Examples are kind of organization, fulfilled role of the information seeker in the organization, and situational aspects such as available time, but also the arrival time of the information need and how many other questions one has to resolve at the same time. Context received also some attention in the media choice domain. However, whereas theories of media choice consider a specific form of context influence (e.g., social influences, norms) as one of the influencing variables on media choice, theories of information seeking behavior often start with the context of the information seeker as shaping mechanism for the course of the information seeking process. This characterizes the actor-centered approach as it starts with mapping how the information seeker perceives aspects in their environment and how this affects the information need and the choices made in the information seeking process. Using this approach leads to a broader, more complete and realistic depiction of the choices that people encounter in the information seeking process. Specifically, it uncovers that choosing media is only one kind of choice making in the information seeking process. All models discussed in this chapter included not only choices in media (e.g., telephone, face-to-face), but also choices for persons and organizations or places as sources of information, however, clear definitions of the concepts were lacking as mentioned in chapter 2.

Whereas media choice models solely focus on the selection of the channel, it is obvious that the information-seeking domain wields a broader perspective. Although the terms source

and channel are often used interchangeably and considered as similar, some information seeking theories contain indications for the argument that the selection of channels interacts with the selection of sources (e.g., Saunders & Jones, 1990; Christensen & Bailey, 1997). These theories support the notion that a source and a channel are two different concepts, though at the same time related to each other. Relatively, Christensen and Bailey (1997) provide the most insight into the mechanism of source-channel interaction. They found that the linear relationship between task equivocality and media richness no longer persists when source accessibility is restricted. In other words, when not all channels are available to a source (i.e., limited source accessibility) aspects of the task is no longer the vital influencing factor for channel selection. This is essential support for the present dissertation in which interdependency between sources and channels is argued and will be unraveled.

COMPARING THEORIES OF SOURCE AND CHANNEL CHOICE: RELEVANT INSIGHTS AND CLUES FOR RESEARCH

Goal of part 2 of this dissertation is to find an answer to the following research question: *What insights can be derived from a review of existing empirical research findings regarding source and channel choice processes in the context of businesses-to-government service interactions?* To find answers, chapter 4 and 5 provided an annotated picture of relevant theories respectively on media choice and information seeking behavior. Answers to this research question will be provided below.

SOURCE-CHANNEL INTERDEPENDENCY

Having a look at the communication process teaches us that the realm of media choice research focuses in a disproportionate way on the process of media selection and neglects the role of the information source. Most of these proposed theories are strictly causal of nature. In contrast, the information seeking domain pays more attention to the source next to the channel – although both concepts are often treated as similar – and focuses primarily on the sequence (i.e., flow and outcomes) of the information seeking process. Some models include causal elements, though detailed explanations are missing.

Nevertheless, explicit indications for the notion that the selection of channels and sources is interdependent can be derived from the information seeking literature. The most prominent indication can be derived from the work of Christensen and Bailey (1997). They support the notion that a source and a channel are two different concepts, though at the same time related to each other. The interaction between source and channel is recognized in such a way that the selection of a channel is predominated by restricted source accessibility over the impact of task equivocality. Thus, the selected source plays a role in the selection process of a channel. Further, implicit indications for the interplay between source and channel choice can be derived from the media choice literature and are found in the proposed influence of experiences with communication partners (a.k.a. sources) (CET: Carlson & Zmud, 1994; 1999) as well as the impact of established communication patterns with others (DCM: Sitkin et al., 1992). However, research that identifies the interdependencies between source and channel, and the variables that indicate and trigger the source-channel interaction does not exist (to our knowledge). Filling exactly these gaps in the extant literature is an important next step in the development of communication theories.

INFLUENCING FACTORS

The selection processes of channels and/or sources are supposed to be affected by numerous aspects as shown in table 5.1. That task influences the flow of the information

Table 5.1 Summary and comparison of different theories on media choice and information seeking behavior

Reference	Originated in domain of	Involved source and/or channel choice	Factors of influence on channel/ source choices
Saunders & Jones (1990)	Decision-making and Media choice	Channel & Source	Contextual: perceived importance, established interaction patterns, environment, time pressure, task characteristics.
Fulk et al., (1990)	Media choice	Only Channel	Perceptions of & experiences with tasks & channels, social influences, situational factors
Sitkin et al. (1992)	Media choice	Only channel. Hints to source.	Task contingencies (perceived & objective), normative contingencies, communication capability constraints
Carlson & Zmud (1994; 1999)	Media choice	Only channel	Perceptions of channels, perceived social influence, experiences
Byström & Järvelin (1995)	Information seeking	Channel & Source	Subjective task, situational, personal, and organizational factors, personal style of seeking
Leckie et al. (1996)	Information seeking	Only source	Work role, task and awareness of information
Baldwin & Rice (1996)	Information seeking	Channel/Source	Organizational aspects and (marginal) individual factors
Christensen & Bailey (1997)	Information seeking	Channel & Source	Task routineness, source accessibility influence channel choice
Pieterson (2009)	Media Choice	Only Channel	Situational & Emotional aspects, personal and perceived task & channel characteristics, experiences

seeking process, and thereby choices, is generally recognized in the research domains of both media choice (e.g., Daft & Lengel, 1984; 1986; Fulk et al., 1990; Sitkin et al., 1992; Pieterson, 2009) and information behavior (e.g., Byström & Järvelin, 1995; Leckie et al., 1996). The impact of personal aspects as well as situational factors is recognized in several theories in both domains (e.g., Fulk et al., 1990; Sitkin et al., 1992; Byström & Järvelin, 1995; Pieterson, 2009).

However, conflicting findings with regard to personal aspects exist as Baldwin and Rice (1997) argue that personal aspects are only marginally of influence compared to organizational factors. Influences of prior experiences are explicitly mentioned in media choice theories (e.g., Carlson & Zmud, 1994; 1999; Pieterson, 2009). With regard to the information seeking models prior experiences are included as feedback loops at the end of the seeking process (i.e., evaluation phase) (e.g., Byström & Järvelin, 1995; Leckie et al., 1996). Thus, that communication is not just a simple transmission of information is generally recognized by theories in both research domains.

Theories of media choice attribute a modest role to the concept of context as influencing variable. They recognize only some forms of contextual influences such as social influences (Fulk et al., 1990; Carlson & Zmud, 1994; 1999) and cultural norms (Sitkin et al., 1992). Conversely, theories of information seeking behavior consider the context as the shaping mechanism for the entire information seeking process. The process starts with the information seeker who perceives aspects in their environment or context – which should be interpreted in its broadest sense – that triggers the start of an information seeking process. This characterizes an actor-centered approach. Examples of contextual aspects are established interactions patterns and the information environment of organizations (Saunders & Jones, 1990), staff and organization size, type and location of the organization and general use of sources and channels (Baldwin & Rice, 1997). The latter seems to be equal to norms of channel use as proposed by the media choice theories. But also awareness of available sources in the environment of the seeker seems of importance, as Leckie et al. (1996) argue.

THE SYNTHESIS

As discussed above, research in both domains has suggested a wide variety of factors that influences channel and source choice in the organizational context. Based on the observation that there are almost no references in the literature from one domain to the other, it can be concluded that both domains have been studying similar or related events but separately from each other. This has led to various focuses of attention and various conceptualizations of similar concepts.

Apart from the observation that several factors are recognized in both domains, the information seeking literature recognizes a wider variety of factors for studying choice making of organizations (e.g., contextual aspects, inclusion of source choice). Further, whereas media choice models are rather narrow in focus, information-seeking models adopt a broader view. Their starting point is often the need for information viewed from the actor. In general, the causal relationships proposed in the media choice models are rather well studied compared to the information seeking models. The latter focuses rather on sequential aspects instead of causal aspects. Exactly these observed limitations in the separate domains form the basis for a synthesis between both. That is, where the information seeking models lack in causal deepening and associated explanations, it is well explained in media choice models. And the other way around, where media choice models have their focus on solely media choice and its determinants, information-seeking models can add sequential aspects and an actor-centered approach, which includes channel choice as well as source choice.

Several contradictions exist between the two theoretical fields —and even between models of the same research area— for instance, the differences in definitions concerning the concepts source and channel. Nonetheless, these differences in approach and the lack of overlap (i.e., no references exist from one domain to the other) present the chance to achieve a synthesis of findings and knowledge from both domains. This results in merging promising insights with respect to crucial elements of the communication process.

THE FOCUS OF THIS RESEARCH

All in all, further development and research is needed to (1) gain a clear understanding of the mechanisms behind channel and source choices and its interdependency, and (2) determine how insights from the two research domains can be synthesized. This dissertation takes a first step to explore these two trails. Therefore, channel and source choice are studied simultaneously to identify equivalences and contrarieties, but also to uncover the underlying mechanisms of how both are chosen. The next chapter provides exploratory insight by presenting the results of a qualitative study concerning the choices organizations face while seeking for governmental information.

PART III

AN EXPLORATION OF SOURCE AND CHANNEL CHOICE DETERMINANTS: A FIRST EMPIRICALSTUDY, HYPOTHESES AND A CONCEPTUAL RESEARCH MODEL

INTRODUCTION OF PART 3

The previous part concluded with the notion that a synthesis of media-choice and information-seeking theories is much needed. Such a synthesis would facilitate a more realistic and complete depiction of the source and channel choices that people make in the information seeking process, the extent to which source and channel choice are influenced by the same factors and how these choices affect each other.

The available literature on source and channel choice identifies numerous factors that influence the selection process, though several contradictions between the two theoretical fields and between models in the same field were identified. To increase our understanding of which factors really impact the selection processes, we need to resolve these contractions and find valid predictors of source and choices. For this reason, the purpose of this part of the dissertation is to provide an overview of the factors that influence the selection of channels and sources. Apart from this, we aim to provide initial insights into the interdependency of source and channel selection processes. We conducted a qualitative study since this method perfectly suits this purpose: "qualitative methods are typically used for providing an in-depth understanding of the research issues that embraces the perspectives of the study population and the context in which they live" (Hennink, Hutter, & Bailey, 2011, p.10). The qualitative study tries to find answers to the following additional research question (RQ_c): *What potential factors, from an employee's perspective, influence source and channel choice processes in the context of business-to-government service interactions?*

The first chapter of this part describes the method used for the qualitative study. What follows is a presentation of the findings in chapter 7. Subsequently, in chapter 8 the findings of the qualitative study are contrasted to the available knowledge in the existing literature presented in part ll. Furthermore, the research model is presented, as well as the hypotheses for the quantitative study. This quantitative study serves to find an answer to the fourth additional research question (RQ_d): *How can existing theoretical insights and the identified potential factors for source and channel choice processes in the context of business-to-government service interactions be integrated in a conceptual research model?*

CHAPTER 6

RESEARCH METHOD

This chapter explains what method was used to conduct the qualitative study. The first section considers the design of the study, which concerns the measurement method and the operationalization of the questions. The sampling method will be the topic of discussion in the second section, which is followed by the explanation of the analysis procedure.

6.1 STUDY DESIGN

MEASUREMENT METHOD

We used a combination of several qualitative research methods in this study. First we conducted focus group interviews. Due to the interaction between the participants, focus group interviews are well suited to generate multiple issues and perspectives about a topic (Morgan, 1988; Krueger & Casey, 2009). Another advantage of group interviews is that they can elicit the underlying opinions, behaviors and motivations in complex topics (Krueger & Casey, 2009). However, because of the group interaction, group interviews may lack depth regarding insight in individual motivations for behavior (Morgan, 1988). Therefore, focus group interviews were followed by single interviews. Single interviews tend to uncover more depth and meaning in behavior, which tend to be hidden in the group interviews (Morgan, 1988; Krueger & Casey, 2009).

In both group and single interviews a semi-structured approach was used. That is, the questions were formulated and roughly sequenced, but the possibility remained to change the sequence during the interviews. Overall, the more general questions were asked in the beginning, to become familiar with the topic (Krueger & Casey, 2009).

After the introduction part the participants in the focus group interviews were asked to draw or write down the different steps they followed during their search for answers to their last question. This engages participants, gives them a moment of reflection and encourages each participant to tell their own story (Krueger & Casey, 2009). Subsequently, the participants were asked to share their story with the group and discuss about it.

For the single interviews we chose to combine direct questions with the use of the projective technique (in the form of a cartoon). The participants were confronted with the beginning

of the cartoon and were asked to fill in the sequel of the cartoon. This technique uncovers the deeper and more unconscious (subjective) feelings and thoughts of the participants (Donoghue, 2010). We choose this technique since respondents do not always share their innermost feelings. This technique originates from marketing research and enables the participants to project their own feelings, emotions and thoughts on the third person in the cartoon (e.g., Green, 1984; Webb, 2002).

INSTRUMENT & PROCEDURE

The same themes were addressed in both group and individual interviews, for instance:

- The use of channels and sources in general, including participants' experiences
- The information-seeking process from question to answer
- Reasons to choose a particular channel in a certain situation to answer a certain question
    - × The influence of the social environment on their channel and source choices
    - × Perceptions of channel and source characteristics
    - × Perceptions of task characteristics

We used a semi-structured approach in both group and single interviews, which enabled the participants to randomly discuss the various topics and talk about problems they encountered recently. For instance, the following questions were asked:

- What sources did you use the last time you were looking for information about taxes? Why did you use those particular sources?
- What channels did you use for contacting each source? Why did you choose those particular channels in combination with these sources?
- What earlier experiences did you have with these source-channel combinations, and does that influence your current information-seeking process?
- Do you use the same channels/sources regardless of your questions? Why (not)?
- Do you discuss with others in your environment what channels and sources you should use? If so, how does this work?

6.2 SAMPLE

SELECTION OF PARTICIPANTS

Employees working in businesses who are responsible for or involved in financial matters formed the population. All respondents were randomly selected by a research agency, based on the database of the Dutch Chamber of Commerce. To control for geographical bias, the single and focus group interviews took place at various places throughout the Netherlands. The single interviews were held at the offices (enterprises with employees) or the homes (self-employed) of the respondents.

SAMPLE SIZE & CHARACTERISTICS OF PARTICIPANTS

For the focus group interviews, the sample population was divided into two groups; 1) the self-employed and 2) people from enterprises with up to 49 employees. In the literature, three or four group interviews for each category is considered as acceptable (Krueger & Casey, 2009). Therefore, we conducted a total of six group interviews: three sessions with self-employed participants and three sessions with employees working in an enterprise of up to 49 employees. The ideal size of a focus group, for non-commercial purposes, is five to eight people (Krueger & Casey, 2009) or six to ten people (Morgan, 1988). For the six focus group interviews, n=58 people were randomly selected. Eventually, n=40 people participated in these interviews, with an average of n=6.67 participants per group interviews.

For the single interviews, we used one sample population containing both the self-employed and enterprises with employees. From this population, n=15 people were randomly selected. However, this sample contained more participants working in enterprises with employees, because we were more interested in this sub group. The reason is that we expected a greater variety, compared to enterprises without employees, with regard to several characteristics of the participants and their organizations. This could impact the information seeking process. An example of such a characteristic is the position in the organization, which leads to various levels of knowledge and interest of the subject.

A third of the participants in the individual interviews were self-employed. Other participants were working at enterprises with employees; half of these had up to ten employees. All participants in the single-interviews made at least some use of a financial intermediary to help manage their tax affairs. No business fully managed its tax affairs on its own. In contrast, a fifth of the participants in the focus group interviews fully managed their own tax affairs. The rest of the participants uses a financial intermediary to some degree. Finally, three-quarters of all participants in both single and focus group interviews were men and a quarter was woman.

6.3 ANALYSIS

All group interviews were video and audio recorded. The single interviews were only audio recorded. We transcribed the collected data as soon as possible after conducting the interviews to make sure that the gathered information remained clear and problems with interpretation could be quickly solved (Taylor & Bogdan, 1984). We used the inductive analysis technique (Patton, 2002). This means that the findings in this research emerged

from the data itself and not from expectations and existing theoretical models (Thomas, 2006). Even though it is difficult for a researcher to completely disregard the existing theoretical perspectives, we think this is the best method because of its high flexibility and theoretical freedom (Braun & Clarke, 2006).

We systematically analyzed the data collected. First, we identified or coded relevant elements regarding the purpose of our research. To identify these elements, we searched for sentences or phrases within sentences in which participants were talking about their channel choice behavior. For example *" ... you cannot find this on the Internet because it is focused only on this situation. This is often the reason for calling someone…."*. Second, we labeled the coded phrases and sentences, which resulted in thirteen categories. To realize this, we selected words or word phrases and grouped them. Next, we made clusters of synonyms. For example, *"... I live nearby..."* and *" ... at that moment it was too far for me ..."*. Both statements say something about the distance to a source. Table 6.1 provides an overview of the final coding scheme. Third, we refined and reduced the identified categories by analyst triangulation (Patton, 2002). Three other scientists coded one group and three individual interviews. By doing this, almost 50% of the collected data was double-coded. The average interreliability rate between the coders and the researcher was k=.769, which can be considered as substantial (Landis & Koch, 1977). Finally, we organized a discussion between the coders and the researcher to shorten and refine the list of categories.

Table 6.1 Main factors in final coding scheme

Factors	Description
Perceived source characteristics	The subject determines the expertise, level of involvement, approachability of a source or how experienced a source is regarding the topic of knowledge.
Perceived channel characteristics	The subject determines the speed of feedback, interaction possibility of a specific channel. Or whether or not it is possible to register certain information with that channel, or the suitability of a certain channel to exchange specific information.
Task characteristics	The subject determines how the complexity, importance or specificity of the task is related to the organization and how this affects choices.
Prior Experiences	The subject determines how prior experiences (positive or negative) led to the choice for the same or another channel or source.
Relationship characteristics	The subject determines the nature of the relationship with a certain source ((in) formal, closeness, frequency of contact, etc.)
Situational factors	The subject determines how the time (e.g., evening or daytime), available time to solve a task, or distance to a source influences choices.
Social Influences	The subject determines how advice of others, or learning from watching others' choice behavior, leads to a certain choice.
Personal characteristics	The subject determines how their personal characteristics or circumstances (e.g., age, position in organization, attitude) lead to certain choices.
Organizational characteristics	The subject determines the characteristics of the organization (e.g., branch, size, starter versus non-starter) and how this affects choices.

Sample incident
*"Uh, why are you going to an accountant for example… he thinks from the view of an entrepreneur, he thinks along with me." (I-12)**
"In a normal situation you cannot reach that person by telephone. You get the call center of the NTCA, it is not that easy to reach the expert. There is also no direct phone number or e-mail address..." (FG5-P6)
"Than you consult the accountant, you call him, because it is direct, the fastest way…" (FG4-P4)
"The accountant is always specific thus that I always call him in first instance, and that is also the easiest way to get a quick answer." (I-10)
"Because of the complexity it is always the accountant… (FG4-P6) Usually I call the NTCA, for those trivial questions." (FG5-P2)
"… for a more specific question I would prefer an expert who knows about the nature of my business and is familiar with my business and will provide suitable answers." (I-15)
"My experiences have taught me that it is the best not to call (the NTCA). First of all, you spend huge amounts of time on the phone whereas if you write a letter you will get the answer." (FG5-P7)
"Well, I knew that guy {an accountant} well and for a very long time, before I started with this. Thus, there is a friendly relationship. Thus, I call him and sometimes also in the evening…" (I-3)
"Yes, I can call him {the expert, a retired accountant}, I can also visit him. It is friendly in such a way that it is also possible in the evening. And it is a man who gives me useful advice and someone who really looks at my business figures, he won't make something up, but he really puts effort in it, tries to help." (I-14)
"Most of the times I drop by. I live nearby and than I can talk to that person face-to-face." (FG2, P5)
"It depends, when I have little time I grab the phone." (I-1)
"Most of the times I use the Internet outside office hours. If it is the NTCA I prefer to call. But when its evening and something pops up my mind and I have some time left, I I try to obtain information via the Internet…" (FG2-P4)
"… if you encounter each other and you have a 'hot' topic that you don't know much about and he says this and this and do that and go have a look on that specific website. That happens sometimes … "(I-5)
"If you look over someone's shoulder how he is doing that.. yes, there are several ways about how to use the internet for example, … oh yes, that's also a way how I could use it.." (I-12).
" As an entrepreneur it is necessary to know about everything a bit, but to go deeper, you shouldn't want that. You should be busy with running a business, with your job. I did my own bookkeeping for a while. If had enough time I was up to date, but on a given moment I was busy and it all heaps up." (FG2, P3)
"... in the magazines I use you can find a simple description and summaries. But then you know where to look for it. It is possible by using the Internet, you can also buy a book, I have also almanacs about taxes in my bookcase, that is also an important source… but I'm being able to work with that." (I-11)
" To find an answer to my question I called the NTCA, but because it takes too long, and I don't have that much time because of my shop, I went to the website of the NTCA for searching." (FG-6, P-2)

CHAPTER 7

RESULTS OF THE FIRST EMPIRICAL STUDY

This chapter discusses the findings of the qualitative study. It starts with a discussion of the identified factors for source and channel choices. The second part describes the findings related to source and channel choices throughout the information seeking process.

7.1 IDENTIFYING KEY FACTORS FOR SOURCE AND CHANNEL CHOICES

Participants indicated that various factors are involved in their selection process of sources and channels to find the information to perform their tasks. Table 7.1 provides an overview of the percentage of times these factors were mentioned by participants among the total of mentioned considerations. A distinction was made between expressions that are source related and channel related. The results of the focus group interviews and single interviews are separated and adding each up to 100%.

Table 7.1 Frequency distribution of factors

	Focus groups (n=246)		Single Interviews (n=271)	
Factors	Source Related	Channel Related	Source Related	Channel Related
Task characteristics	8.1%	6.5%	8.1%	8.8%
Prior Experiences	14.8%	13.3%	7.0%	6.3%
Relationship characteristics	4.1%	.4%	3.0%	1.5%
Situational factors	2.4%	3.6%	2.9%	10.1%
Social Influences	1.6%	1.2%	1.5%	2.6%
Perceived channel characteristics	.0%	15.9%	.0%	12.5%
Perceived source characteristics	15.9%	3.7%	12.7%	1.9%
Personal characteristics				
Age	.0%	.0%	.0%	1.5%
Position in organization	1.2%	.0%	3.3%	3.7%
Attitude	3.3%	.0%	5.5%	.0%
Organizational characteristics				
Size	1.6%	.8%	1.1%	1.1%
Branch	.0%	.4%	1.1%	1.9%
Phase (starter vs. non-starter)	.8%	.4%	1.5%	.4%
Total	53.8%	46.2%	47.7%	52.3%

The results show that for task characteristics considerations were related almost equally to both source and channel choice. This indicates that both channel and source choices are

affected by characteristics of the task. For example, for a complex task participants will consult an expert source such as the advisor via a personal channel such as face-to-face or the telephone. For a simple question another source and channel will be chosen, for instance, the government via the website.

Expressions about prior experiences for sources or channels are rarely mentioned separately. Considerations about prior experiences mainly contain experiences with the use of certain source-channel combinations. General experiences do exist, but the experience with a certain channel such as the telephone may change when the experience with this channel in combination with a particular source such as the government differs from that general experience. For instance, someone associates the telephone with getting a quick answer, however, when the waiting time to reach the government via the telephone is long, the experience for the telephone in combination with this specific source will change.

This study finds that statements with respect to relationship characteristics primarily refer to the selection of the source instead of channel choice. In both focus group and single interviews most considerations were source related. However, there were also some statements in the single interviews explicitly related to channel choice. For instance, a participant described his relationship with the accountant as friendly and informal since they know each other for a long time. This is one of the reasons to communicate face-to-face with the accountant. In contrast, another participant noted that she often communicates via e-mail with the accountant, since her relationship with the accountant is formal, she barely even knows him. Only when they need to discuss many things, she calls him.

In contrast to the impact of relationship characteristics, statements with regard to the impact of situational factors seem primarily related to the selection of channels instead of sources. In particular the results of the single interviews uncover this pattern; the difference in the focus group interviews is small but in the same direction. This difference between channel and source choice indicates that these situational aspects do influence channel choice, but for source choice other factors are more of importance. For social influences there is no substantial difference between the effect on source choice and channel choice. Expressions for this factor were difficult to elicit, though some of the participants in the single interviews explicitly elaborated about the impact of others concerning their channel choice.

Statements about channel characteristics solely relate to the selection of a channel. No explicit statements were found that are related to source choice. Considerations with respect

to characteristics of the source are primarily expressed when making a source choice. When zooming in it seems that this pattern is particularly related to the perceived level of expertise of the source (two-thirds of these expressions are about expertise). None of these expertise-related considerations affect channel choices. On the other hand, other types of source characteristics (e.g., approachability, involvement) do affect not only source choice, but channel choice as well. These findings indicate that these more service-related skills of a source influence what channel is selected. For instance, s source such as the government is perceived as being difficult to reach via the telephone, which leads to the choice for the website as an alternative channel.

Considerations concerning the influence of personal characteristics seem primarily related to source choice. This pattern is found in particular for attitude. Statements about position in an organization seem both source and channel related, although the percentages are quite low. Age seems more related to channel choice than source choice. Especially older people expressed that they prefer the more traditional channels such as face-to-face and telephone. This may affect source choice as well. For instance, the NTCA has recently decided to restrict the accessibility via the desk (face-to-face). For people who preferred this channel, this has led to the choice for another source.

Finally, considerations with respect to organizational characteristics were mainly found in the single interviews and were related to both source and channel choices. For example, a business in the retail has to deal with customers during office hours. Therefore the entrepreneur switches to a channel where he can search for information at his own pace. In contrast, for businesses in other branches it may be easier to call instead. Concerning source choice one has the option to do everything themselves or to consult an accountant. An explanation for the difference between the single and focus group interviews may be that in the focus group interviews more self-employed respondents participated, who have no experiences with organizational influences.

7.2 FROM QUESTION TO ANSWER; THE INFORMATION-SEEKING PROCESS

It seems obvious that the seeking process often does not end after consulting a single source through a single channel. Only when a business has chosen to outsource their financial matters and consult for every question the accountant immediately (which occurred in a fifth of the single interviews and none of the group interviews) the search mostly ends after consulting one source (and channel). Instead, it occurs frequently that several channels and sources are chosen to obtain the needed information. The following citation depicts clearly how the seeking process flows:

"At that moment I had to pay VAT, BPM and Aggregation because I drove a business-car. I needed information about these various payments. To find answers I first made a phone call to the NTCA, but because this took too long, and I don't have enough time with my store, I started to search for information on the website of the NTCA. This was like a spider web, which has led me to Google, where I found a lot of different answers, but not one complete answer. Next I sent an e-mail to my accountant, he gave me a short answer, saying he wanted to look into it… however, that takes time and time is money. So, I returned to Google and found a business website and found in the end unambiguous and clear information." (FG6-P2)

In the above citation the respondent starts with the recognition of information need and defines a task; he had to pay several taxes and needed information about how this works. The next step was to gather information by consulting a source through a channel; calling the NTCA. He experiences that the phone call takes too long and evaluates it therefore as negative. At this moment he has not obtained the desired information. This leads to the choice for a new source-channel combination; the website of the NTCA. Again, this delivered not the desired information and again a new source-channel combination is chosen. In total, this respondent has chosen five source-channel combinations of which the fifth was positively evaluated, delivered useful information, and a decision was made. The following citations below depict a similar picture of the various stages in the seeking process:

"The question was about a request with regard to expenses for an employee who has an office at home. The first step I took was visiting the website of the NTCA, with the underlying assumption that I would be able to find the formally correct information there. But there was too much information. So, the second step was to search on the Internet with general terms, where I checked how other businesses deal with this issue…. Just so that I would not reinvent the wheel. The third step was oral deliberation with my controller, to verify if the answers I found were correct. And he, as step four, checked some things by calling the NTCAAll this together delivered a clear answer under which circumstances, whit what kind of contract, and how to formally capture everything…" (FG6-P3)

"There was an article in the newspaper, and I had read several things on the website, about what you should do as a startup company and what you could claim. Then I read the word 'doorwerkpremie' [kind of benefit]. In first instance I looked at the website of the NTCA, but that provided no answer. Next I called the NTCA, told them I was a startup company and they explained everything about the facilities for starters, barring an answer about that particular benefit… Next, I asked the administration office about this. They had heard about it, but they also had look into it at that moment. Finally, via them the issue was solved." (FG5-P4)

It can be inferred that the seeking process starts with the recognition of an information need, which is reflected in the question or task about a certain issue. This is followed by

the actual search for information, in which sources are consulted through several channels. In this particular phase, situational factors such as having little time, but also perceptions about for instance the source (as is stated by the respondent in the second citation), affect the selection and use. The subsequent phase is the evaluation of the use of the source and channel and the derived information. This reflects also the satisfaction of the just used source and channel to find answers on that particular question. For instance, just gained experiences (but also general prior experiences) with the use of certain channels and sources seem to affect the selection of a new source-channel combination. In this evaluation phase it is determined whether the obtained information is useful and whether a decision can be made based on the obtained information. If not, a new source-channel combination is chosen. If yes, the seeking process ends and a decision will be made.

From the citations above it can be derived that the respondents expected to find the correct answer at each step –selecting and using a source-channel combination– they took. After a negative evaluation they continue their seeking process and select another source and channel. However, the results of the current study revealed also other possible explanations for selecting several source-channel combinations. In the citations below, the participants state that they select a particular source-channel combination to fulfill a certain goal:

1) *"Thus, first I do some homework and visit the website and then… take that information in consideration and go to the accountant." (I-12)*

2) *(P3) " In first instance I always visit the website." (P7) "For me it is than usually first informative, to obtain initial information. My accountant works it out further. But I know at least more about in which direction I ought to guide him." (FG3).*

3) *"The NTCA via the Internet to orientate, to read. The specific regulations, the brochure can be viewed on the website of the NTCA. To consult the primary source…." (FG6-P4)*

4) *"First the telephone and in the end e-mail. To make first contact and to pass on specific information, e-mail will be used… the telephone, yes, to formulate the question and to get the information question back and to close the question I send you an e-mail with the things you need and than a reply will follow generally with the needed information." (I-10)*

5) *"In first instance I visit the website and then, to get certainty that I choose the best solution, I always contact the bookkeeper, the tax advisor…" (FG1-P4)*

6) *"After I found something, I called the NTCA to be certain that I had interpreted the information properly." (FG4-P4).*

Several goals are stated in the citations above, such as to orientate (citation 1, 2 & 3) or explaining something, to make first contact or continue an earlier contact (citation 4), to exchange the information (citation 4) or to gain certainty by checking some earlier provided answers (citation 5 & 6). From this it can be inferred that channels and sources are selected that are suitable to the kind of information needed and the stage of the information seeking process.

The next chapter will contrast the results presented in the current chapter with existing findings in the literature (elaborated in part 2), which will lead to a conceptual research model of source and channel choice.

CHAPTER 8

DISCUSSION AND CONCLUSIONS: PRESENTING HYPOTHESES AND A CONCEPTUAL RESEARCH MODEL OF SOURCE AND CHANNEL CHOICES

Part 2 of this dissertation ended with the notion that it is generally recognized in the available literature that numerous aspects affect the selection processes of channel and sources. This chapter compares the findings of the qualitative study presented in chapter 7 to knowledge available in the literature. In preparation for the quantitative study, hypotheses are formulated and a preliminary model is presented. This model serves to answer the following additional research question (RQ_d): *How can existing theoretical insights and the identified potential factors for source and channel choice processes in the context of business-to-government service interactions be integrated in a conceptual research model?*

The chapter starts with contrasting the various influencing factors for source and channel choice that are identified in the qualitative study with findings in the extant literature. As a result, hypotheses are formulated and a conceptual research model of source and channel choice by organizations is developed step-by-step. Subsequently, hypotheses are formulated that focus on source and channel choice related to the flow and length of the information seeking process.

8.1 SOURCE AND CHANNEL CHOICE PREDICTORS AND INDICATORS FOR INTERACTION

PERCEIVED SOURCE & CHANNEL CHARACTERISTICS

As concluded in part 2, it is well established in the literature that the selection of a source or channel is not a straightforward rational choice but a rather subjective and socially constructed selection. One of the indicators that it is a subjective process is the notion that *characteristics* of *sources* and *channels* are considered to be perceptions that differ from person to person (Fulk et al., 1990).

Several characteristics are identified as vital influencers for source choice. The first factor is trustworthiness (Hertzum, Andersen, Andersen & Hansen, 2002). An increase in perceived trustworthiness makes it more likely that a source will be selected to obtain information from. Sheppard and Sherman (1998) explain that trustworthiness is a broad concept that

involves many aspects such as competence, reliability, discretion, benevolence, concern, and empathy. Second, Woudstra and Van den Hooff (2008) studied perceived source quality – which is closely related to trustworthiness – and found that the source choice depends on quality-related considerations (e.g., match between task and topic of knowledge of the source and expected perspective, reliability, up-to-dateness. In contrast, others argue that accessibility of a source is the most significant factor (e.g., Gerstberger & Allen, 1968; O'Reilly, 1982; Hardy, 1982).

Although the relative importance of the various *perceived source characteristics* is subject to debate, it seems obvious that they do matter. This is in line with the results of the explorative study presented in chapter 7. The results uncovered that the more a characteristic (e.g., expertise, accessibility, involvement) is assigned to a certain source (e.g., formal governmental source, advisor, personal sources), the more likely it is that this source will be selected. Therefore, it is expected that the extent to which a certain characteristic is assigned to a source, will vary across the various kinds of sources. The first hypothesis is as follows:

H_1: Perceived source characteristics, specified by level of expertise, accessibility, and involvement affect the actual source choice.

H_{1a}: The extent to which a certain characteristic (level of expertise, accessibility, and involvement) is assigned to a source will vary across various kinds of sources (government, advisor, personal sources).

Similar assumptions exist in the literature about the influence of perceived channel characteristics on the actual channel choice, as noticed in chapter 4. Zmud et al. (1990) argue that people differentiate between channels on perceptions of accessibility, information quality, cue variety, feedback, and personalization. Results presented by Pieterson (2009) suggest that people have varying associations with different channels. In general, traditional channels are perceived as personal, give immediate feedback, and provide language variety. Convenience and ease of use are, in contrast, associated with electronic channels. These results are typical for the assumption that channel choices are subjectively constructed, as discussed in chapter 4. Support for the notion that perceived channel characteristics are of influence on the selection of a channel, was found in the explorative study as well. Most expressions about characteristics concerned speed of answer, the possibility to inform for further (underlying) information, and the possibility to communicate verbally and non-verbally (language variety, multiple cues). Hence, similar to the effect of perceived source characteristics we expect that the extent to which a channel is perceived as having

a particular characteristic will vary across various types of channels (i.e., telephone, face-to-face communication, website, social media, e-mail, SMS/Whatsapp). Therefore, the second hypothesis is formulated below. Figure 8.1 depicts the assumed effects of perceived characteristics on the actual choice, for both channel and source selection.

H_2: Perceived channel characteristics influence the selection process of a channel to obtain information from a particular source.

H_{2a}: The extent to which a certain characteristic (i.e., speed of answer, possibility to inform and register, multiple cues, personalization) is assigned to a channel will vary across various types of channels (i.e., telephone, face-to-face communication, website, social media, e-mail, SMS/Whatsapp).

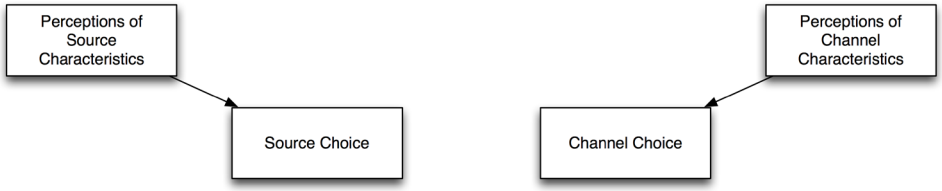

Figure 8.1 *Assumed effects of perceived characteristics on source and channel choice.*

Although it is possible that some channel characteristics can be perceived equally across various sources, this dissertation assumes that the perceptions of those channel characteristics vary depending on the perceptions on source characteristics. How this mechanism works, will be discussed below.

So far, it has been argued that source and channel choice are respectively affected by perceived source and channel characteristics. As noted in part ll, interaction of source and channel selection has received little attention in existing literature. The findings discussed in the previous chapter show that source characteristics such as accessibility trigger source choice and affect channel choice. For instance, not every source can be contacted through every channel since not all channels are available to the seeker (e.g., some sources do not offer the e-mail channel). Support in the literature can be found in findings of Hogan (2008), who argues that different use of channels implies different access to others. That is, some people prefer only the telephone and refuse to use other channels such as e-mail, while others make use of a wide variety of channels. The accessibility of this group of people who only prefer the telephone is constrained and differs from those who use many channels.

On the other hand, accessibility in terms of costs, time and effort to contact a source may affect the perceptions one has about a particular channel, which in the end influences the actual channel choice. For example, calling an organization for advice could lead to being put in a queue and therefore a (long) wait. This may lead to a decrease in perceived speed of feedback of the telephone as a channel. This perception refers to the channel telephone in combination with a particular source, rather than it being considered a general perception of this channel in particular. This suggests that the selection of a channel depends on the chosen source. Moreover, it suggests that perceived source characteristics correlates with perceived channel characteristics. Thus, for efficient and effective communication an appropriate source-channel combination is needed. This line of thought is similar to the findings of Christensen and Bailey (1997), who argue that the channel through which the information is transferred from source to the seeker depends on the kind of source selected. As noted in chapter 5, they found that the linear relationship between task equivocality and media richness no longer persists when source accessibility is restricted. Further, chapter 5 discussed that other studies concerning the interaction of source and channel selection are scarce. Only Jones, Saunders and Mcleod (1993) incorporated both source and channel choice. They proposed that in the identification phase the more accessible sources are selected more often as compared to further on in the process. Besides, channels that are suitable for passive viewing will be used rather in the beginning of the process (e.g., periodicals). Although they reported the change of source-channel combinations over time as decision processes unfold, interaction between both was left out of consideration. Despite the small indications found in the literature regarding the existence of source-channel interaction, we argue in this dissertation that the selection of sources and channels is interdependent. The following associated hypotheses are formulated:

H_3: The selection of sources and channels is interdependent as people choose various source-channel combinations.

- H_{3a}: Perceived source characteristics influence the selection of a channel to obtain information from a particular source.

In short, perceived source and channel characteristics are identified in this study as indicators for source-channel interdependency. Both serve as triggers respectively for the selection of the source and the corresponding channel. H_{3a} assumes an effect of perceived source characteristics on channel choice. Similarly, perceived channel characteristics could also affect the selection of the source and its perceptions. When people search on the Internet, using a website, for relevant information, their perceptions of this channel determine which source is chosen. Agichtein et al. (2008) noted that information quality

on the Internet – which contains of user-generated content – varies strongly. The website of a well-known and trusted source (e.g., a governmental organization) could be preferred over a forum where people share their experiences, opinions and possible solutions to a particular problem. This suggests that characteristics of the channel (i.e., the website) influence the selection of the source. For instance, one respondent expressed that a reliable source was preferred when he searched on the Internet for relevant information. Figure 8.2 illustrates the proposed relationships in this section. Therefore, two extra hypotheses can be formulated regarding the source-channel interdependency:

H_{3b}: Perceived channel characteristics influence the selection of the source.
H_{3c}: Perceived source characteristics correlate with the perceived channel characteristics.

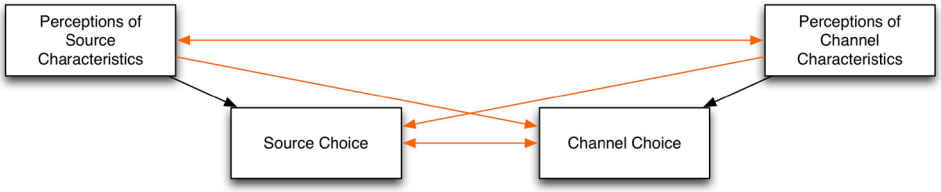

Figure 8.2 *Assumed relationships involving source-, channel choice and their perceived characteristics*

PRIOR EXPERIENCES

Prior experiences with the use of channels and sources are another important factor regarding channel and source selection, as the results of our study have indicated in the previous chapter. This is not surprising, as the influence of prior experiences is generally accepted by theories in both research domains of media choice and information seeking theories, which was noticed in part ll. Besides, the present study showed that considerations related to prior experiences mainly contain experiences with the use of certain source-channel combinations; experiences for just a source or a channel were rarely identified. This can be considered an indication for the source-channel interdependency, as denoted in the previous chapter. For instance, one respondent tried to contact an organization via the telephone but ended up in a long queue, which led to a switch in channel for contact with that particular source. From this it also follows that the perceived characteristics of the telephone a channel, in combination with that source, changed due to this experience. This might affect which source-channel combinations will be selected in the future. This indicates that perceptions before and after the actual use of a source-channel combination could be different. These perceptions they can be adjusted through experiences. Culnan

(1983) argued that experiences are especially important with regard to the formation of opinions about sources. Savolainen and Kari (2004) explicitly noted that source preference is primarily motivated by perceptions formed on the basis of prior experiences. Similarly, King and Xia (1997) argue that perceptions of media appropriateness are affected by one's personal experiences with certain media. Therefore, the following hypotheses are formulated below and depicted in figure 8.3.

H_4: Prior experiences affect which source-channel combinations will be chosen in the future.

H_{4a}: Prior experiences with channels influence future channel choice.

H_{4b}: Prior experiences with sources influence future source choice.

H_5: Prior experiences influence perceptions of source and channel characteristics.

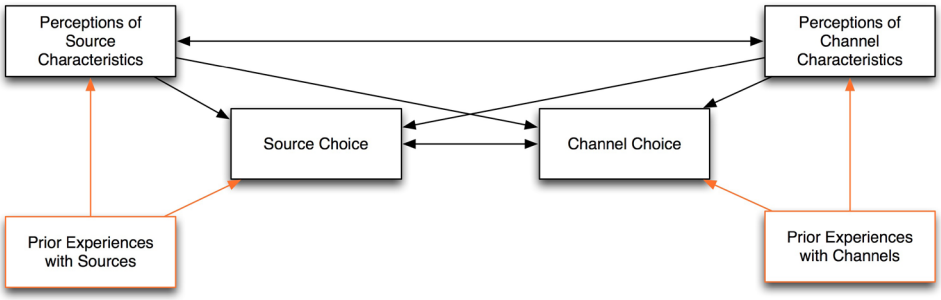

Figure 8.3 *Assumed effects of prior experiences with sources and channels*

PERCEIVED TASK CHARACTERISTICS

The results of our study show that the task at hand influences source as well as channel choice processes. Considerations related to the task were almost equally related to both concepts. Support for the finding that task characteristics are of influence can be found in many previous studies regarding channel choice (e.g., Pieterson, 2009; Daft & Lengel, 1986; 1984) and source choice (e.g., Savolainen & Kari, 2004; Byström, 2002; Anderson et al., 2001). It was denoted in part 2 that the selection of channels and sources is more than just a match between task and suitable sources and channels. However, that same chapter also showed that the task does play a crucial role in the selection process. As mentioned above, the findings of our study show similar findings.

Various task characteristics have been studied, though most attention has been paid to task complexity. Various authors argue that people consult more sources when the complexity of a task increases (Byström, 2002; Byström & Järvelin, 1995). Moreover, by comparing

simple versus complex tasks, Byström and Järvelin (1995) suggest that complex tasks call for more understanding and formulation of the problem, which requires other types of information sources and channels. Pieterson and Ebbers (2008) suggest that people tend to rely on traditional channels such as the telephone and face-to-face for complex tasks. Likewise, an increase in complexity leads to the selection of sources that are perceived as experts (Byström, 2002).

With regard to the impact of task the findings presented in chapter 7 discovered that specifically the perceptions of *task complexity, specificity*, and *importance* are of influence on source and channel choices. For example, the results indicate that for a complex task participants will consult an expert source such as the advisor via a personal channel such as face-to-face or the telephone. For a rather simple question another source and channel will be suitable, for instance, the government via the website. Hence, the following hypothesis (see figure 8.4) is formulated considering the impact of task on channel and source choice:

H_6: Perceived task characteristics, specified by complexity, specificity, and importance influence source and channel choice.

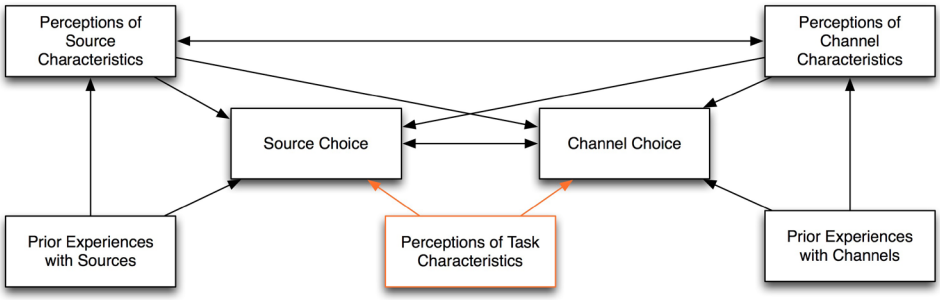

Figure 8.4 *Assumed effect of task characteristics on source and channel choice*

SITUATIONAL FACTORS

The current findings concerning situational factors differ from other studies. Our data suggests that situational factors influence channel choice as opposed to source choice. However, as pointed out in part ll, theories from both the media choice and information seeking domains recognize the influence of situational factors. Other studies that focused on channel and source choice in the information-seeking context found that situational factors affect both (Savolainen, 2006; Byström & Järvelin, 1995). This contradictory result may be due to fact that the definitions of the concepts source and channel differ from the

ones used in this study. This makes it more difficult to compare the results directly. Support for the impact on channel choice is abundant (e.g., Pieterson, 2009; Nicholson, Clarke, & Blakemore, 2002).

Reinsch and Beswick (1990) noted that people try to reduce their effort, by choosing channels that are suitable for minimizing cost and time, and for bridging distance. They found that when distance increases, it is more likely that the telephone will be chosen compared to face-to-face or written communication. Pieterson (2009) reported similar findings. Our findings suggest that distance mainly affects the choice for a channel rather than the source. With respect to the more distant sources it is expected that channels such as the telephone or e-mail will be used. Conversely, face-to-face communication is considered to be more common for the sources that are closer by. Also Savolainen (2006) found no evidence for the influence of situational factors on source selection, which he partly attributes to a limitation of the critical incident technique – which was the method he used – that participants were not able to remember situational details. Taken together, it is expected that situational factors be of greater influence with respect to the selection of a channel rather than for source choice.

However, based on the findings presented in the previous chapter (chapter 7), it is expected that available time does play a role for both source and channel selection. It seems not particularly relevant for which sources and channels will be selected, but rather important for the number of source-channel combinations that will be selected within a single seeking process. This expectation is in line with findings of Byström and Järvelin (1995). They found that a source could be neglected when there is lack of time to find an answer. To illustrate this; when one is in a hurry to find an answer, the probability that one will visit the website, before making a phone call is lower. It is more plausible that the telephone will be selected immediately. Likewise, when there is enough time available the probability increases that several sources are consulted, for instance, one will discuss obtained answers via the NTCA with a friend before the advisor is contacted and a decision will be made. This indicates that situational factors affect channel and source choice in such a way that some choices are left out of consideration when there is lack of time. Hence, situational factors have a rather constraining function with respect to which source-channel combinations are omitted in the seeking process. This has consequences for the flow of the information seeking process; it may influence the sequence of chosen source-channel combinations. This will be discussed further on in this section. For now, the following hypothesis (see figure 8.5) is formulated:

H_7: Situational factors – in terms of distance, time, and available time – influence both channel and source choice, though the influence for channel choice is considered to be greater.

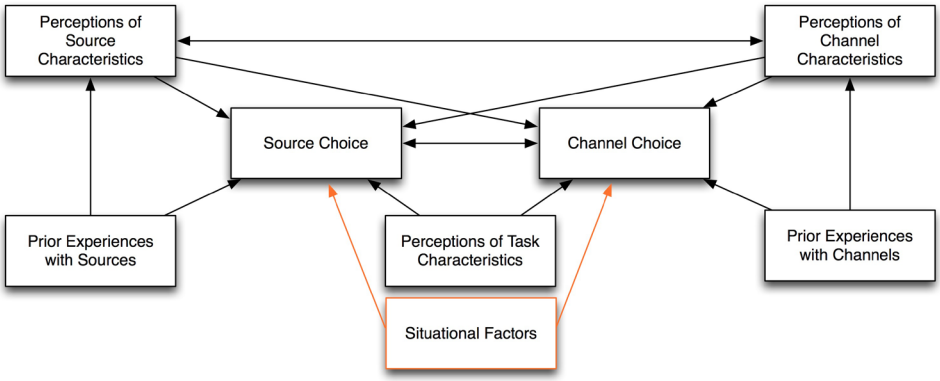

Figure 8.5 *Assumed effect of situational factors on source and channel choice*

SOCIAL INFLUENCES

Part 2 of this dissertation pointed out that both media choice and information seeking theories are consistent in recognizing the influences from the social environment of individuals on their choice behavior. Most media choice theories solely pay attention to social influences, while information theories view social influences as one of the (many) contextual influences. Consensus exists about the notion that established interaction patterns (i.e., social norms) within organizations affect choices of individual employees. El-Shinnawy and Markus (1998) observed that employees were using e-mail for a particular task instead of voicemail, which is considered to be more appropriate according to the Media Richness Theory. From this they inferred that individuals are inclined to use a channel that is commonly used in a group or organization, instead of a channel that is more suitable to a certain task. Likewise, Dewhirst (1971), and more recently Turner (2006) found that social norms affect channel use, both within and outside, the organization. Saunders and Jones (1990) argue that the information environment of the organization and its established interaction patterns affect the selection of both channels and sources. They consider the influence to be greater when one is in an early stage of the process. Further, Haythornthwaite and Wellmann (1998) found that people rely more on organizational norms when they have to select a channel to contact an unfamiliar source.

Whereas the findings discussed above are mainly based on large organizations, the current dissertation focuses on small and medium sized organizations. This means that also self-employed people are included. Despite this, the current study identified some considerations related to the impact of social influence on source and channel choice. However, these expressions were related more to channel choice. Participants working in organizations of varying sizes raised considerations about social influence. For instance,

self-employed people could be influenced in their choice behavior via sharing experiences with and hearing opinions of other self-employed people working in the same branch or a family member with a self-employed business. These forms of social influences are equal to the modeling behavior and the exchange of experiences as recognized by Fulk et al. (1990). Besides, Fulk et al. (1990) argue that social influence also affect the evaluation of channels, which can be viewed as perceived channel characteristics.

Combined, evidence for the impact of social influences mainly relates to the selection of channels. Although Saunders and Jones (1990) argue that it also influences source choice, their study fails to provide extensive explanations. Similarly, the current findings support the notion for the impact of social influence on channel choice but are less strong concerning the selection of sources. Nevertheless, social influences have an effect on the selection of sources and channels and its perceived characteristics. In the following section, we will discuss the factors that interact with social influences. For the moment, more general hypotheses are formulated:

H_8: Social influences – specified by direct statements of others, vicarious learning, and organizational norms - affect the selection of sources and channels. This effect is larger for channel choice.

H_{8a}: Social influences affect perceived source and channel characteristics.

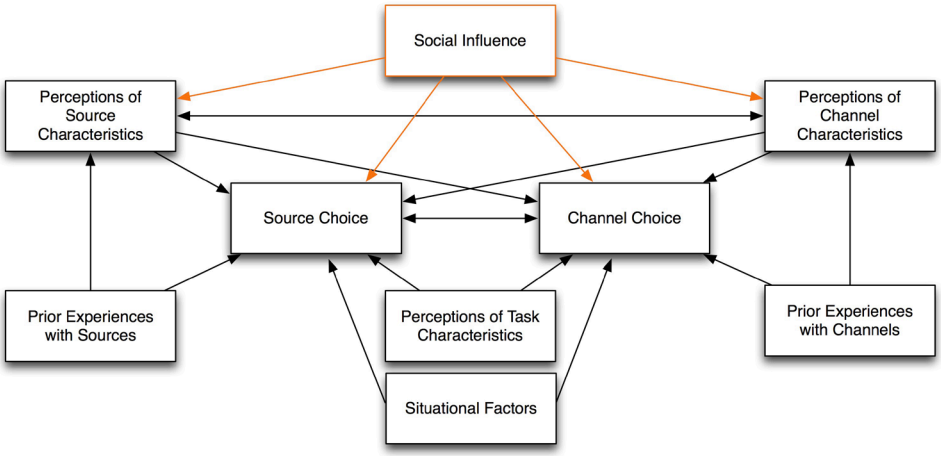

Figure 8.6 *Assumed effect of social influence on source-, channel choice and perceived characteristics*

PERCEIVED CHARACTERISTICS OF THE RELATIONSHIP WITH A SOURCE

The findings in the previous chapter suggest that both source and channel choices are impacted by relationship characteristics. The effect, however, is considered to be stronger for source selection. Expressions of participants about elements of the relationship mostly related to the nature of the relationship (i.e., formal of informal), trust, and frequency of contact. We found that information seekers within the organizational context have various potential sources in their environment, with whom they maintain various relationships. Although most studies in both domains have only focused on other aspects, some theories discussed in the previous part of this dissertation seem to recognize the impact of the relationship on choices.

The findings of our qualitative study indicate that perceived source characteristics and relationship characteristics correlate and affect together the selection of the source. This is comparable to the notion of Cross and Sproull (2004) that "simply knowing that someone has relevant expertise is not all that is required to obtain useful information from that person." (p.254). They argue that patterns of relationships between seeker and source also facilitate or constrain the source selection process. In addition, others found that individuals prefer to work with and have contact with people with whom they feel close to (i.e., have a strong relationship with) (Haythornthwaite & Wellman, 1998; Haythornthwaite, 2002). This supports the notion that one prefers particular sources, which are perceived as experts and with whom one has a strong relationship. Hence, the first hypotheses for this factor are as follows:

H_9: Perceived relationship characteristics – in terms of nature, trust, and frequency of contact – influence the selection of the source.

H_{10}: Perceived relationship characteristics correlates with perceived source characteristics.

The notion that relationship characteristics play a role in the source-channel interdependency is supported in studies of Haythornthwaite and Wellman (1998) and Haythornthwaite (2002). They argue that channel choice depends on various aspects of the relationship (e.g., topic of information exchange, mutual schedules, stage of development of the tie). Similarly, Sitkin et al. (1991) posits that channel choice is affected by relationship characteristics in terms of the history between seeker and source. Thus, information seekers maintain various relationships with various information sources that result in various choices for channels. The findings of the current study support this. For instance, a more personal channel such as face-to-face is chosen to contact an information source with one somebody has a friendly relationship. Besides, the findings of the present study uncovered that prior experiences also affect perceived relationship characteristics. This is in line with

the effect of history as supposed by Sitkin et al. (1991) (i.e., experiences) via relationship characteristics on future choices. This leads to the following hypotheses:

H_{11}: Perceived relationship characteristics influence the selection of the channel.

H_{12}: Prior experiences influence perceptions of relationship characteristics.

Another factor that affects relationship characteristics is social influence. For both work and friendship ties, Haythornthwaite and Wellmann (1998) found that the stronger the tie, the more divergent information is exchanged, the more channels are used. When having a weak tie, people are less motivated to communicate and depend more strongly on norms established by others, such as organizational norms (Haythornthwaite & Wellmann, 1998). This leads to the use of a few channels or even just one (Haythornthwaite, 2002). So, this would imply that employees contacting sources with whom they have weak ties (e.g., formal based ties such as the NTCA) just use the by the organization adopted channel. In contrast, communicators in strong ties (e.g., informal, friendly based ties) use multiple channels to exchange different kinds of information and are more motivated to adapt and use new media in their strong tie (Haythornthwaite, 2002). Although it was difficult to observe such patterns in the qualitative study —only one participant indicated something similar— social influences do seem to affect perceived relationship characteristics. This leads the following hypothesis (figure 8.7 depicts the assumed effects):

H_{13}: Social influence impacts perceived relationship characteristics.

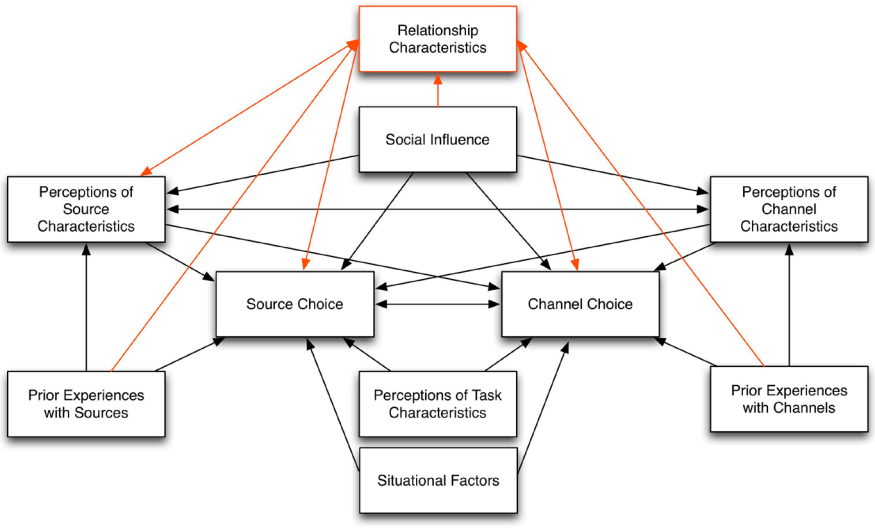

Figure 8.7 *Assumed effects of relationship characteristics, involving prior experiences, perceived characteristics, social influence, and source and channel choice*

PERSONAL AND ORGANIZATIONAL CHARACTERISTICS

Most theories discussed in part 2 have not treated the role of personal characteristics in much detail. However, some theories in both research domains provide somewhat more extensive, though contrasting, explanations, which will be discussed next.

Pieterson (2009) found that *personal characteristics* such as age, gender and education influence individuals' channel choices. The effect of age is considered to be the strongest according to his findings; the probability for choosing face-to-face or written communication increases with age. In this study, the same trend was found to apply to self-employed organizations. Further, Pieterson (2009) found that higher educated people are more inclined to visit websites and, conversely, lower educated people prefer the telephone and face-to-face. Women use the telephone slightly more often and fewer electronic channels compared to men (Pieterson, 2009).

However, Pieterson (2009) studied the government-citizen context and did not focus on organizations or organizational characteristics. With respect to choice behavior of individuals within an organization, the influence of *organizational characteristics* is considered to be more crucial for both channel and source choice, as noted earlier in chapter 5. (Baldwin & Rice, 1997). *Organizational characteristics* include aspects such as organization size and type of organization. Pieterson's (2009) findings contrast with the results of Baldwin and Rice (1997) that *individual characteristics* are of no influence for the selection of channel and sources and outcomes of the seeking process. Only years of experience in a certain position have some effect, which is comparable to the findings of Kuhltau (1999) as she indicated that people become more selective when they are more experienced. Both are considered to be of importance and in line with the results presented in the previous chapter. However, we believe that the extent to which either *personal* or *organizational characteristics* predominate is a rather nuanced question.

It is expected that the influence of *personal characteristics* varies with organization size. In smaller sized organizations, *personal characteristics* could be more important. In contrast, in organizations with more employees, the organizational environment (i.e., social influences) could be more important. This renders individual characteristics of less influence. It is believed that also size of the department or organizational unit is of influence; whether or not an employee has colleagues in similar positions. Ho and Levesque (2005) noted that employees' social referents are often others that fulfill a similar role in the organization. Shah (1998) reported comparable findings, but argues that also the so-called 'cohesive actors' are important (i.e., friends). This seems to influence information-seeking patterns of employees and is closely related to the impact of *social influences*.

Further, the results of the present study taught us that these differences in positions lead to the consultation of different sources and the use of other channels. Reason for this can be found in the variety of background knowledge on a certain topic; whether or not someone considers the particular task as a core task or one of many. The latter implies differences in available time that affects the flow of the information seeking process. In chapter 5 it was pointed out that Leckie et al. (1996) observed a similar impact of the position of an individual (i.e., work role) and argued that this is the one of the crucial variables for how the information seeking process flows. Several hypotheses can be formulated based on above discussion:

H_{14}: Personal characteristics, specified by gender, education, and age affect the selection of sources and channels.

H_{15}: Size of an organization affects both the selection of sources and channels.

H_{16}: Position in the organization – in terms of self-employed, managing directors, and experts – influences source and channel choice.

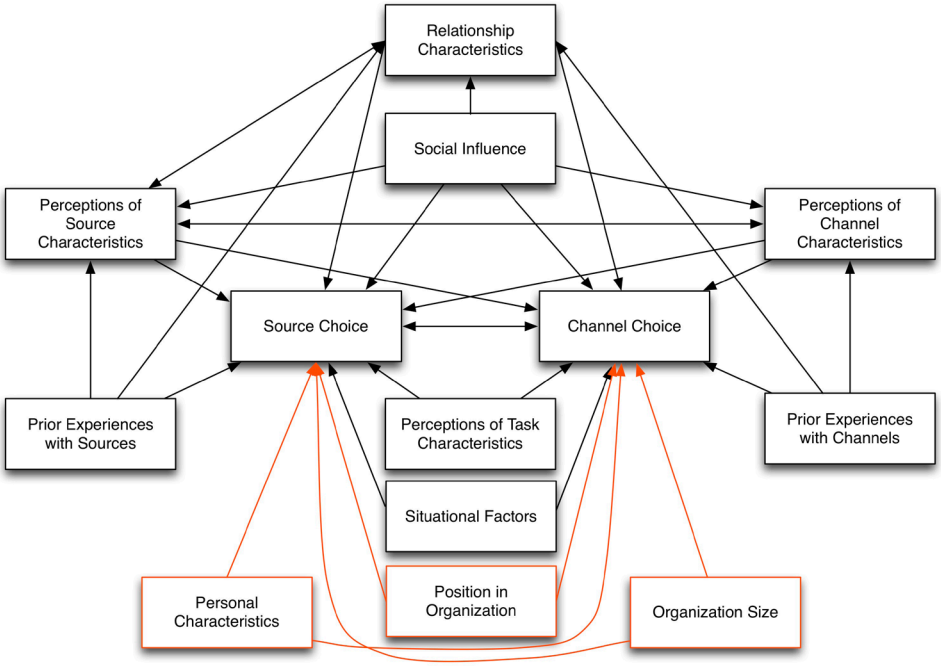

Figure 8.8 *Assumed effects of personal characteristics, position in the organization and organization size on source and channel choice*

8.2 FLOW AND LENGTH OF THE INFORMATION-SEEKING PROCESS

The findings of the current study mainly uncovered effects of variables on the selection of sources and channels. Nevertheless, the present study provided also information about the flow of the information seeking process. It was observed that source-channel combinations fulfill various roles during the information seeking process (i.e., orientation or exploration, exchange of information, to gain certainty). This is comparable to findings of Cross, Rice and Parker (2001). They found that people receive various benefits from other people (i.e., sources) when seeking information. Some sources provide solutions, others help with problem reformulation or are consulted for validation of plans or answers.

Two factors identified in the present study are assumed to be related to the length of the information seeking process. The first factor is task characteristics. The findings of the present study indicated that when information seekers face a rather specific, complex and/ or important task they spend more time to find an appropriate answer. This suggests that they consult more sources via more channels in such a situation, compared to when the task at hand is rather simple. Byström and Järvelin (1995) presented findings that are in line with these results. As noted in chapter 5, they argued that as task complexity increases, the number of selected sources and channels also increases. Further, statements related to the length of the information seeking process concerned often elements of situational factors (i.e., available time). As discussed in the previous chapter, the results suggest that available time is considered to be a constraining factor as some source-channel combinations are left out the search process at all and other source-channel combinations are chosen in an earlier stage of the seeking process. For example, when there was little available time participants expressed that they immediately called their advisor, while otherwise (i.e., when they had plenty of time) they would have visited the website of the NTCA before consulting the advisor. This leads to the following hypotheses:

H_{17}: Situational factors influence the length of the information seeking process in terms of the number of chosen source-channel combinations.

H_{18}: Task characteristics influence the length of the information seeking process in terms of the number of chosen source-channel combinations.

8.3 CONCLUDING REMARKS

A total number of sixteen hypotheses has been formulated to test what factors influence source and channel choice. These hypotheses are visualized in a conceptual research model

of source and channel choice by organizations. Further, two hypotheses examine source and channel choice related to the length of the information seeking process. Testing these hypotheses —which will be topic of the following part (part 4) of this dissertation— will provide answers to the core research question: *Which factors are the most important determinants of source and channel choice processes in the context of business-to-government service interactions?*

PART IV

TESTING THE CONCEPTUAL RESEARCH MODEL: A SECOND EMPIRICAL STUDY ON SOURCE AND CHANNEL CHOICE IN BUSINESS-TO-GOVERNMENT SERVICE INTERACTIONS

INTRODUCTION OF PART 4

In the previous part, we developed a conceptual research model for source and channel choices of businesses. The model is based on the factors we identified in our first empirical study—a qualitative study about how businesses seek for information about tax matters—and existing theoretical insights discussed in part ll. With this model we argue that source and channel choices are different processes that are strongly intertwined. Together they form the core of the model. Many factors (e.g., *task characteristics, situational factors, relationship characteristics, prior experiences*) potentially influence source and channel choices. This conceptual research model must nevertheless be considered as exploratory. We do not aim at finding or presenting the final model that explains source and channel choice of businesses but to gain first insights into the similarities, differences and interdependencies in both types of selection processes.

This part reports a second empirical study that tests the conceptual research model in a quantitative setting. Goal of this study is to provide answers to the main research questions of this dissertation:

Which factors are the most important determinants of source and channel choice processes in the context of business-to-government service interactions?

(a) To what extent are source and channel choice determined by the same underlying factors?
(b) How do channel and source choice relate to each other?
(c) Which factors influence the number of sources and channels chosen in a single information-seeking process?

This part starts with reporting the method used (chapter 9), followed by a discussion of the measurable outcomes of the conducted study, such as the selected sources and channels in certain situations (chapter 10). Subsequently chapters 11 and 12 discuss the findings that provide insight into the determinants as well as the interdependencies of source and channel choices in information-seeking processes.

CHAPTER 9

RESEARCH METHOD

In part 3 the underlying factors and flow of the information seeking process were explored in a qualitative research setting. The findings of this study, combined with findings of the literature serve as input for the design of a quantitative study. This section discusses the method deployed and focuses on aspects such as sampling strategies, design of the questionnaire, and pre-testing of the instrument.

9.1 SAMPLE

SAMPLING METHOD

For an efficient and effective sampling we choose to use disproportionate stratified random sampling (Foreman, 1991). Underlying reason is the skewed distribution of organization size in the population. As table 9.1 shows, almost three-quarter of the population consists of self-employed people. It is essential to sample enough participants in each group to be able a) to determine the effect of organization size, and b) to derive valid and reliable conclusions about the behavior of a single group. With disproportionately stratified sampling the smaller groups are slightly overrepresented and the group of self−employed is underrepresented. When deriving conclusions about the entire population weighing factors guarantee correct interpretation of the results.

Table 9.1 Distribution of organization size in the population versus the sample

	Official numbers in population (NTCA, 2012)		Distribution in sample	
Number of employees	N	%	n	%
1	843.713	71.8	366	30.0
2 – 5	199.072	16.9	338	27.8
5 – 10	57.783	4.9	305	25.0
10 – 50	74.303	6.4	209	17.2
Total	1.174.871	100.0	1218	100.0

PROCEDURE

Initially, *n*=6000 organizations were invited to participate. They received a letter from the University of Twente. The letters were addressed to the management of an organization. They were asked to pass it on to the person in the organization who is responsible for

dealing with tax matters in their organization. All respondents were randomly selected from the database of the NTCA. This database was updated just before we carried out our sample survey in January 2013 and contains all registered businesses in the Netherlands. After two weeks we sent out a reminder to the businesses that had not responded yet. As will be discussed in the next section, we had to carry out a second sample survey.

Indications exist that age and education affect online and offline activity (e.g., Van Dijk & Hacker, 2003; Van Deursen, Van Dijk, & Ebbers, 2006). So, to ensure a proper representation of the population, we offered the invitees (in the first sample) to participate online or offline. A printed questionnaire was attached to all 6000 invitation letters of the first sample. In the end, 13.3% participated offline and 87.7% filled in the online questionnaire, this applies to both samples. A comparison of both groups led to the observation that online participants were significantly higher educated than offline participants. Further, offline participants were on average older than online participants.

RESPONSE

After the first round of invitations and reminders 6% (n=396) had completed the survey. This number was not large enough for the purpose of this study and for this reason, we decided to invite another n=15.000 organizations to participate. Initially, the response rate remained low. During the search for explanations we encountered a possibly interesting explanation. By comparing various studies conducted at the NTCA it was remarkable that invitations sent in the name of the NTCA yielded a response rate of 30% on average. In contrast, invitations sent in the name of a research agency yielded a much lower rate of around 6%. We decided to send out the reminder with an extra letter in the name of the NTCA. The strategy appeared to be successful as, in the end, n=1235 participants completed the survey. This is nevertheless a total response rate of 6%, but for this number of participants is sufficient to generalize our findings to the actual population in the Netherlands (with a confidence interval of 95%).

We excluded 17 participants from the sample, for several reasons: the participant appeared to be the external advisor of the organization, the organization had ceased to exist, or one participated as a citizen instead of answering the questions as an employee. In addition, 2% of the respondents started to fill in the questionnaire, but quit before completion. Furthermore, 2.5% of the invitations were returned immediately. Besides, an unknown amount of the invitees did not belong to the target group as they are physically disabled. The NTCA considers physically disabled people as organizations with house personnel. Because of this they were unintentionally included in the sample. This turned the final number of participants that completed the survey to n=1218.

CHARACTERISTICS OF THE PARTICIPANTS AND THEIR ORGANIZATIONS

Table 9.2 shows the percentages considering the distribution of gender, age and educational level of the particular employee who participated in the survey, one's position in the organization and the year of the organization's establishment. Since the goal of the study is not to obtain a representative sample of the original population, but to gain insight in the behavior of groups that differ in organization size, a comparison with the entire population in the Netherlands would be irrelevant. In addition, the target group is highly differentiated and rather specific that constrains comparison with the more general numbers available at Statistics Netherlands.

Table 9.2 Characteristics of participants (*n*=1218)

Characteristic		%
Gender	Male	68.3
	Female	31.4
Age	20–29 years	3.2
	30–39 years	12.5
	40–49 years	27.4
	50–59 years	35.1
	60–69 years	19.5
	70–79 years	2.1
	80 years or older	.1
Educational level	Low	12.0
	Medium	33.5
	High	54.5
Position in organization	Managing director without employees	43.1
	Managing director with employees	40.0
	Manager	3.8
	Administrative assistant	5.6
	Financial employee	4.4
	Controller	2.4
	Partner of owner	.7

9.2 DESIGN OF THE QUESTIONNAIRE

MEASURES

The questionnaire consisted of five different parts. The first and the last part of the questionnaire yielded a complete picture of the participants. The first part focused on their position in the organization as well as their organizational environment (e.g., other employees on similar positions, who is making the final decisions). The last part mainly

collected data about the demographics. Examples of questions in the first part are:

- What exactly is your position in the organization? (e.g., managing director, financial specialist)
- Is there anyone else, besides you, responsible for the same tasks?
- Do you take your own (final) decisions about financial issues in the organization?

The purpose of the second and third part of the survey was twofold. The first goal was to build a (causal) model and to test the hypotheses formulated in chapter 8 of this dissertation. Second, these parts aimed to gain a deeper understanding in the selection processes of sources and channels (i.e., their differences, similarities, and interdependencies) and how the information seeking process flows. Participants were confronted with various kinds of questions and statements about aspects such as the impact of the task or the effect of perceived relationship characteristics on their choices throughout the seeking process. These aspects were included in our model; other aspects will be discussed further on in this section. Scales are appropriate measure instruments for model development (DeVellis, 2003). To prevent monotony, Likert−scales and semantic differential scales were included. Both scales were 7-pointed. A score of 1 in the Likert-scale indicated 'totally disagree' and a 7 was 'totally agree'. For semantic differential 1 and 7 were the opposite ends of adjective pairs (e.g., No experience vs. Experienced).

To measure the effect of *prior experiences, kind of task, situational aspects, social influences and relationship characteristics* on channel and source choice, statements were formulated in combination with a Likert−scale. The items that measure prior experiences of channels were adopted from Pieterson (2009). We slightly adapted them for source choice. The measurement of *situational factors* consisted of various items concerning *available time, distance* and *point of time*. These measurements were partly self-developed and partly adapted from Van den Hooff, Groot and De Jonge (2005). The items for *social influence* are a combination of items from Carlson and Zmud (1999) and Van den Hooff et al. (2005), and are slightly adapted to the context of the current study. Although effect of task is often studied (e.g., Byström & Järvelin, 1994; Byström 2002; Anderson et al., 2001), no suitable measurements were available. Therefore, these measurements were self−developed and cover various aspects of the task such as *complexity, importance* and *specificity*. Petróczi, Nepusz and Bazsó (2007) provided an overview of elements that cover relationship or tie−strength. Based on their findings and the results of the qualitative study in part lll of this dissertation the following elements were included: *nature of the relationship, closeness, trust, and frequency of contact*. The operationalization of closeness is derived from Marsden and Campbell (1984). *Frequency of contact* is based on Brown

and Reingen (1987), and *nature of the relationship* is self−developed, but originated in Granovetter (1973). The items on *trust* are self-developed.

Perceived source and channel characteristics were measured using a semantic differential format. The dichotomous pairs for source characteristics originated from Netemeyer and Bearden (1992), and Dholakia and Sternthal (1977). Besides, the items for channel characteristics were derived from Pieterson (2009) and formulated into dichotomous pairs. The perception of source and channel characteristics were linked to particular sources and channels. The respondents were asked to judge six kinds of information sources on aspects such as expertise and accessibility and the first chosen channel on aspects such as speed of feedback and personalization.

To gain insight in the sequential process of choosing sources and channels, the respondents were asked to write down their most recent question that triggered an information seeking process and judged their question on complexity and importance. These items were asked as dichotomous pairs in a 7-point semantic differential scale, and adapted from the self-developed Likert-scale items on task aspects, as described above. Next, the participants were requested to indicate which sources they consulted to find answers and in which sequence they consulted these sources. Then, with regard to the first consulted source it was asked to indicate which channels they had used to obtain information from this particular source. And again, the participants indicated a sequence in channel use. Respondents who declared to have consulted more than one source, or had used several channels where asked for explanation. Apart from understanding the sequence of channel and source use, these questions delivered insight into combinations of particular sources and channels; which channels are chosen to contact what sources.

Further, direct questions were formulated to examine whether there was a particular order in source and channel choice (what was chosen first: the source or the channel?). Other questions considered the extent to which there were fixed channel-source combinations and why people tend to choose the same channel to contact a specific source repeatedly.

In the fourth part of the survey the respondents were confronted with vignettes. Vignettes are short descriptions of a particular situation in which the respondents need to empathize (Morrison, Stettler, & Anderson, 2004). The descriptions were written in the language of the respondents (i.e., no use of terminology). For each vignette the respondents were asked which information source and which channel they should use in the given situation. One of the advantages of a vignette study is that it approaches reality. It is not unconceivable that

the respondent is or will be confronted with such a situation and is or will be faced with such a decision (e.g., Wason & Cox, 1996; Barnett, Bass, & Brown, 1994). A disadvantage of a vignette study is that, due to the many factors included, the amount of unique vignettes can rise quickly (Graham & Cable, 2001). It is not acceptable to confront each respondent with all unique vignettes. Due to the length of the current questionnaire it was chosen to confront the participants with a selection of the vignettes by creating a split to come to an acceptable number of vignettes for each respondent. This method is called the incomplete block design (Graham & Cable, 2001). With this method the unique vignettes are divided into groups and each respondent is designated to a particular group. For the current study 32 unique vignettes were formulated (five factors with each two values (2^5) were included in each situation). Each respondent was given four vignettes. This means that the respondents were randomly assigned to one of the eight groups in total. The vignette study aimed to find influencing factors on source and channel choices as well as interaction effects between various factors. The manipulated variables were associated with characteristics of the task (complexity, importance, specificity), available time as a situational factor, and social influence (getting advice). Table 9.3 shows the various manipulations.

Table 9.3 Manipulated Variables in Vignettes

Factor	Variable	Manipulation	As expressed in vignettes
Task	Complexity	1. Simple	.. it seems a rather simple question…
		2. Complex	.. it seem a complex question..
Task	Specificity	1. General	.. all companies make use of the same..
		2. Specific	.. it can be quite different ..
Task	Importance	1. Unimportant	.. the importance seems not high..
		2. Important	.. the importance is high ..
Situational factor	Available Time	1. In a hurry	.. there is little time..
		2. Plenty of time	..no hurry, there is plenty of time..
Social influence	Getting advice	1. None	-
		2. Getting advice	..someone in your direct environment recommends you..

An example of a vignette is presented below. The manipulated variables are in bold, but were of course invisible to the respondents.

> Your company is doing well. Plans exist to expand the company. It could be relevant to change the legal form of your company in such a situation, however, this **can be quite different** from company to company. You are planning to deepen out this **complex question**. It is of **high importance**, since a change in the legal form has major consequences. Fortunately there is no hurry, because you have **plenty of time** to deepen out this question. Someone in your direct environment **recommends you** to visit an advisor to discuss the various possibilities.

PRE-TESTING

We conducted two pre-tests to test the quality of the questionnaire (i.e., comprehensibility, evoked feelings after reading a vignette, validity and reliability of the instrument). For these pre-tests, respondents from the intended target group participated and it was ensured that these respondents were spread over the four different strata.

The first round of the pre-test was qualitative in nature. The intention of the first pre-test was to test the questionnaire in its comprehensibility. Ten participants filled out the questionnaire in company of a researcher. The participants belonged to a panel and were recruited by a research agency, which was also responsible for the execution of the pre-tests. With regard to the vignette part, the participants were confronted with extra questions about the evoked feelings after reading each vignette (e.g., did it evoke a feeling of being in a hurry?). Based on the results of the qualitative pre-test, aspects as question order and lay-out were edited. An example is the change of the term 'phone' into 'making a call', since some respondents associated the phone as a channel with the activity of sending an e-mail via the smartphone. Also the explanations of the terms channel and source were edited to make the differences more explicit and obvious to the respondents.

The second pre-test had a quantitative nature. Main goal of this pre-test was to test the validity and reliability of the scales and their items. Again, the participants (n=100) were all member of a panel and recruited by the research agency. This pre-test resulted in the removal of eight entire questions and 55 statements. The remaining 54 statements were ensured to constitute reliable and valid scales.

CHAPTER 10

DESCRIPTIVE RESULTS

Before hypotheses and model testing, this chapter presents the descriptive results of the survey. The chapter starts with a description of the observed source and channel choices, followed by the combinations of sources and channels. This chapter concludes by providing first insights into the sequence and flow of source and choices in the information seeking process.

10.1 THE SELECTION OF SOURCES AND CHANNELS

The respondents were asked to think about their latest question about tax matters and to indicate which sources and channels they had used to find a suitable answer. The results are shown below.

NUMBER OF CHOSEN SOURCES AND CHANNELS

As shown in figure 10.1, more than half of the respondents (55.7%) obtained sufficient information by consulting just one single source. Almost a third (30.2%) contacted two sources, and 11.6% obtained information from three sources. On average, 1.6 different sources were consulted in a single process from question to answer.

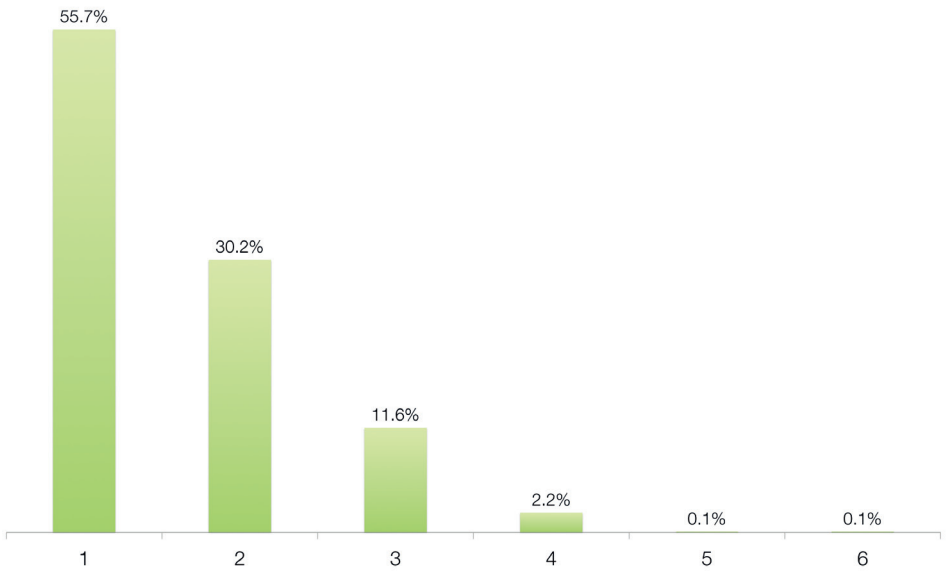

Figure 10.1 *Number of chosen sources in a single seeking process*

The average number of channels chosen to contact the first source is 2.3. Figure 10.2 below shows that less than half of the respondents (41.3%) used only one channel to contact a single source. Almost a third of the respondents (26.7%) needed to use a second channel to obtain sufficient information. Almost a fifth (18.5%) even used a third channel.

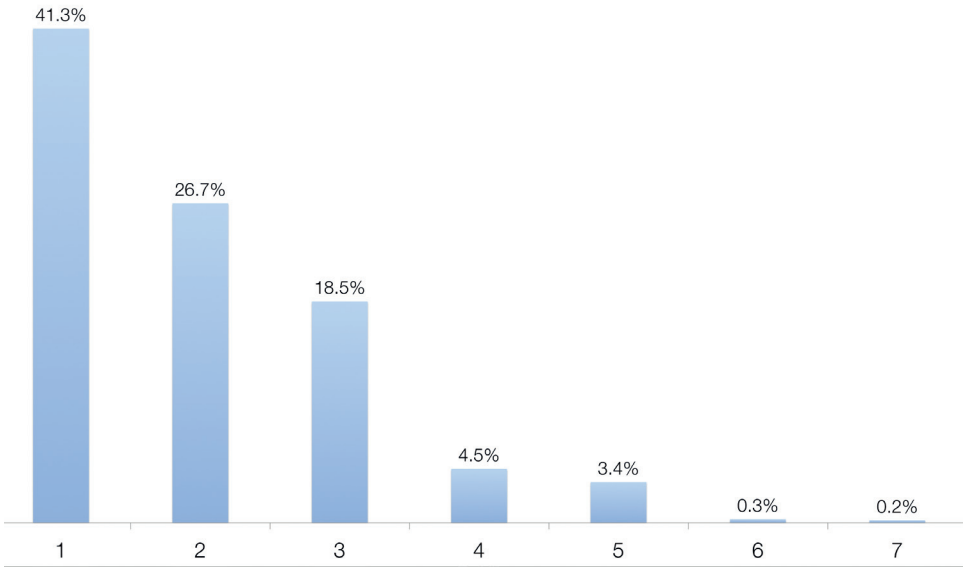

Figure 10.2 *Number of chosen channels for the first selected source*

CHOSEN SOURCES AND CHANNELS

The respondents were asked to indicate which source or sources they had consulted to find answers to their latest question. It was possible to indicate multiple answers. Figure 10.3 demonstrates the results. It is obvious that the advisor and the Netherlands Tax and Customs Administration (NTCA) are the most consulted sources (67.5% and 56.5%, respectively). The most often consulted personal sources are friends or acquaintances (9.3%) and external contacts (8.05%). Colleagues within the organization are less frequently consulted (4.1%). An explanation could be that many participants worked for relatively small sized organizations with no or just a few colleagues (in similar positions).

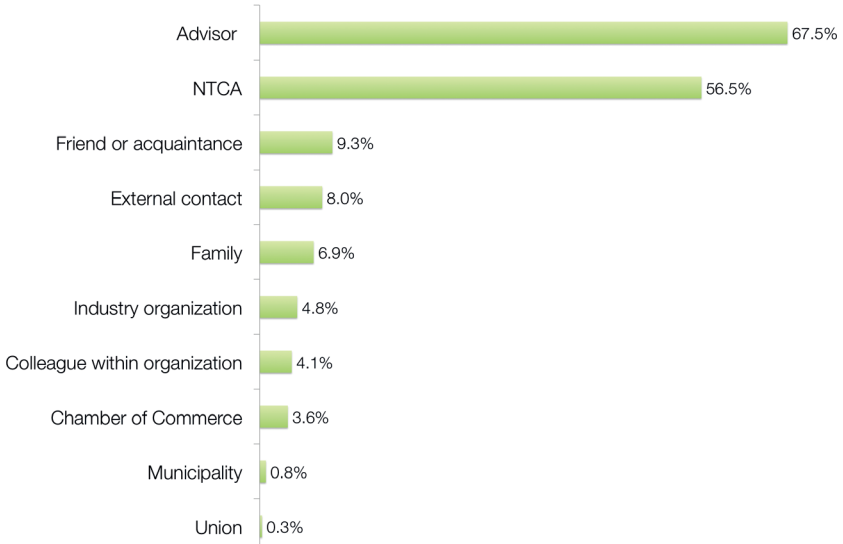

Figure 10.3 *Overview of selected sources for answering most recent question*

Likewise, the respondents were asked to indicate which channel or channels they had used to contact a source. Only the channel(s) chosen to contact the first consulted source were analyzed. Again, multiple answers were allowed. As shown in figure 10.4, the telephone is by far the most frequently used channel, as almost three−quarter indicated to use this channel (71.3%). The second most used channel is e-mail (46.0%), closely followed by the website (41.5%). More than a third indicated to use face-to-face contact (35.3%). The written channel is used less frequently, but still chosen by 16.6%. The other channels are seldomly chosen.

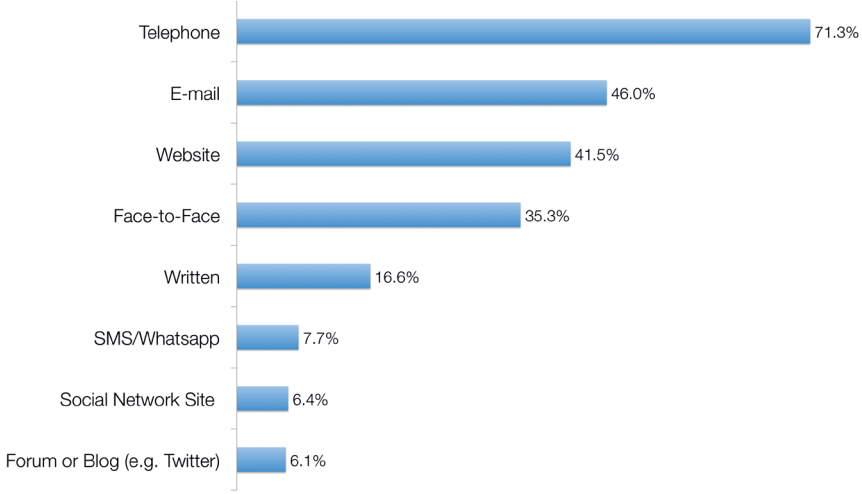

Figure 10.4 *Overview of used channels for answering most recent question*

10.2 SELECTED SOURCE-CHANNEL COMBINATIONS

Whereas the results in the former section reflect the choices made in a specific situation, the respondents were also asked to indicate which channels they use in general to contact various kinds of sources. Figure 10.5 shows these results.

It is obvious that —except for consulting personal sources— the telephone is the most popular channel for obtaining information from the various kinds of sources. For both governmental sources and associations the website is the second most chosen channel, followed by e-mail. For contact with an advice organization the second most selected channel is e-mail, and often also face-to-face contact. In contrast, face-to-face contact is the channel most frequently used for contact with personal sources such as friends, family, colleagues and external contacts. Further, there is often contact via telephone and e-mail.

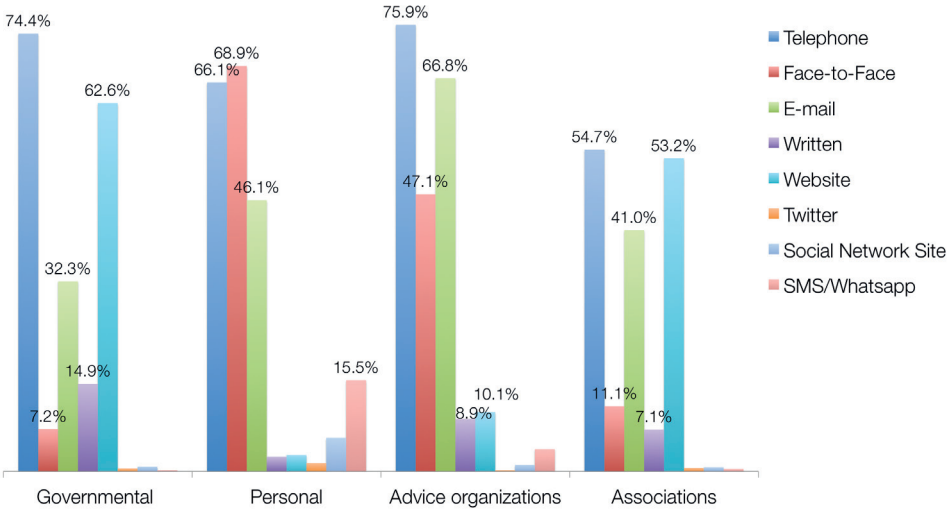

Figure 10.5 *General source-channel combinations*

According to the results above various patterns in (the combination of) source and channel selection emerged from our data. Table 10.1 provides further insight into the selection process of the source-channel combinations. 27.3% stated that they always use the same channel to contact a particular source and 43.7% generally uses the same channel. Thus, this group often selects a particular channel to contact a particular source (i.e., fixed source-channel combination).

Table 10.1 The selection process of source-channel combinations

	%
I always use the same channel to consult a particular source	27.3
In general I use the same channel to consult a particular source. However, in some situations I use a different channel.	43.7
In general I use various channels to consult a particular source. However, there is one channel that I use more often compared to another channel.	17.9
I regularly use various channels to consult a particular source.	11.1
Total	100.0

Table 10.2 tells us more about what is chosen first the source or the channel. Exactly half of the respondents have indicated that they chose the source and the channel as a clustered choice (i.e., one single action). In addition, the other half of the respondents declared that there is a clear sequence in what is chosen first, the source or the channel. 39.9% selects the source first, followed by the channel. For 10.1% it is just the other way around. This does not mean that these respondents do not choose a source-channel combination as a package deal, but rather that they could have various packages they use. There is more of a conscious elaboration of via which channel the already selected source should be consulted, or which source is suitable to a selected channel. For instance, when one starts on the Internet, via Google, it sounds plausible that one selects a reliable source out of the search results given by Google.

Table 10.2 Sequence: what is chosen first, the source or the channel?

	%
The channel was chosen first, followed by the source that I wanted to consult. There is clear sequence.	10.1
The source was chosen first, followed by the channel. There is a clear sequence.	39.9
There was not a clear sequence in my choices for a source and channel, this happened simultaneously.	50.0
Total	100.0

Although the results above implies that there are fixed source-channel combinations (27.3% always uses the same combinations), the results demonstrate that 17.9% uses in general various channels to consult a source, and 11.1% is even more firm by indicating that they regularly use various channels. Further, from the finding that 43.7% uses the same channel in general, we can infer that the respondents do not choose the same channel in all situations. Thus, various source-channel combinations are chosen in the seeking process from question to answer. The next chapter focuses on the underlying factors that determine the selection of the various combinations.

10.3 THE INFORMATION-SEEKING PROCESS: SEQUENCES IN CHOICE

The first section of this chapter illustrated that the respondents used multiple sources and channels in their information−seeking process to find answers to their most recent question. Figure 10.6 below provides insight into the sources chosen in first, second and third instance. All respondents (100%) selected a primary source, 44.3% selected a secondary source after consulting the first one and 14.1% also consulted a third source. Although the exact sequence of source choices cannot be derived from the figure below, it gives information about the various sources selected throughout various stages of the information seeking process (e.g., orientation, exchange of information, to make sure).

Respondents who indicated that they had consulted more than one source were asked why they had contact with several sources. They were allowed to give multiple reasons. The main reason to consult various sources is 'to be sure that I have the correct information' (50.8%). 34.7% explicitly stated that sources have various roles, which affect the choice for multiple sources instead of one. Other regularly given reasons concerned 'the desire to compare different answers or views before one makes a decision' (27.1%) and 'the provided information of the first source was not clear or incomplete' (25.6%).

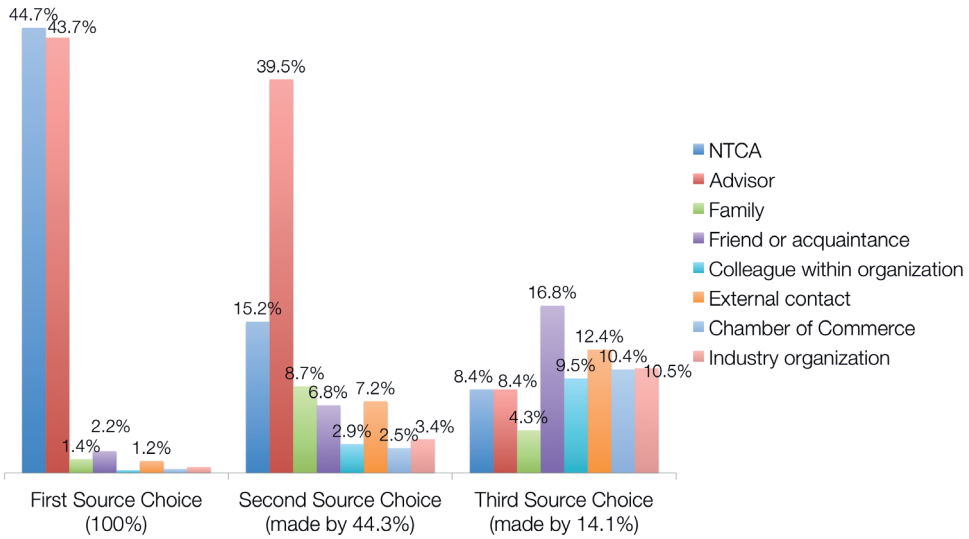

Figure 10.6 *Chosen sources across the seeking process*

With the findings in figure 10.6 in mind, we decided to zoom in on the actual sequences in choices. This shows that, for instance, the advisor is consulted after the NTCA has

been contacted, with the underlying reason that the obtained information at the NTCA has been checked through contact with the Advisor. Another example is that (1) the NTCA is consulted to orientate, (2) followed by contacting the Advisor for help with the interpretation and meaning, and (3) third a personal source is contacted to gain information about his or her experiences on that topic. Hence, from the perspective of the information seeker, sources fulfill various roles in their seeking process from question to answer.

Further, the respondents indicated which channel or channels they had used to obtain information from their source chosen first (depicted figure 10.7). Each respondent indicated at least one channel, 58.8% used two channels, and 32% had contact via three channels.

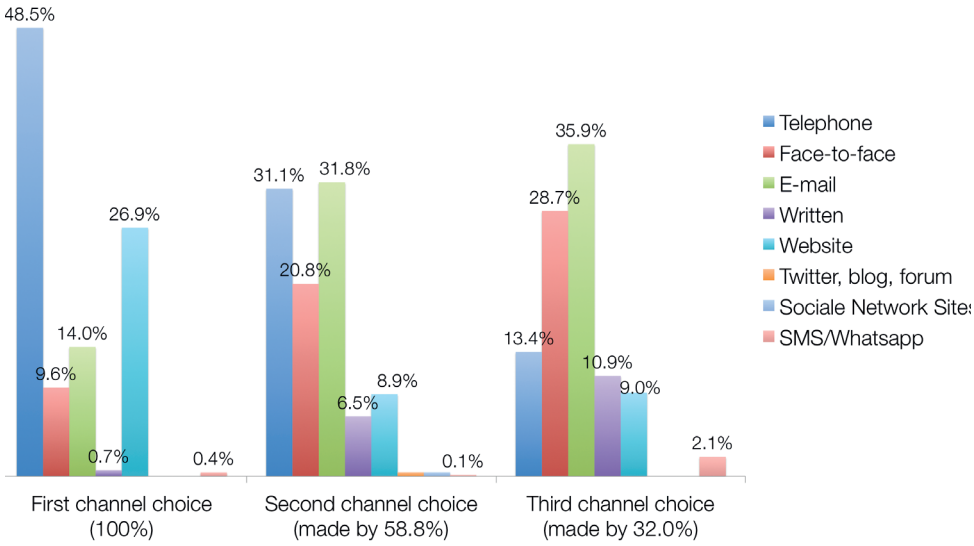

Figure 10.7 *Chosen channels for the first consulted source*

Most respondents had contact via several channels due to the fact that not all information was available through the first channel (56.7%). 41% of the respondents indicated that they used a second or third channel to be sure that the earlier obtained information was interpreted correctly. Other reasons given to obtain information through various channels were 'to secure exactly what was agreed or discussed via the other channel' (18.9%), 'to send extra information' (24.1%) and 'the source was not available via the first chosen channel' (11.2%).

These results imply that channels are selected in various stages of the information seeking process. The website and telephone are regularly used as a first method to obtain

information. For instance, the website provides a first insight and the check for correct interpretation occurs via another channel such as the telephone or face-to-face. One can also start with the telephone and send extra information later via the e-mail as a preparation for further face-to-face contact.

In sum, the above results indicate that various sources and channels are selected in various stages of the information seeking process. Each stage has its own goal (e.g., orientate, exchange of information, help with interpretation) and various source-channel combinations are suitable to achieve these goals.

CHAPTER 11

RESULTS OF THE VIGNETTE STUDY

This chapter discusses the results of the vignette study. First, an overview of the chosen sources and channels is provided. This is followed by a detailed analysis that provides insight into the influence of the manipulated factors on source and channel choice, as well as interaction effects between these factors.

11.1 OVERVIEW OF CHOSEN SOURCES AND CHANNELS

SOURCE CHOICE

Table 11.1 shows which sources are selected in throughout all vignettes. The advisor is by far the most chosen source in the given situations (62.6%). With 20.7% the NTCA is the second most consulted source. All other potential sources are selected less often. In 5.9% of the presented vignettes the respondents did consult no source.

Table 11.1 Overview of chosen sources in the 32 vignettes of this study

	n	%
NTCA	984	20.7
Another governmental organization than NTCA	26	.7
Advisor/Advice organization	2976	62.6
A colleague within organization	81	1.7
An external contact who I know personal	143	3.0
Family or a good friend	126	2.7
Association (e.g., Chamber of Commerce, Union, Industry Organization)	127	2.7
I consult no source	284	5.9
Total	4747	100.0

CHANNEL CHOICE

As shown in table 11.2, the most widely selected channel in the delineated situations is the telephone (48.1%). Face-to-face appeared to be the second most chosen channel (17.8%), closely followed by e-mail (16.2%). The fourth most frequently selected channel is the website (12.0%). All other channels are rarely (e.g., written channel) or never chosen (e.g., Twitter).

Table 11.2 Overview of selected channels in the 32 vignettes of this study

	n	%
Telephone	2280	48.1
Face-to-face	846	17.8
E-mail	769	16.2
Written (sending a letter)	19	.4
Website	569	12.0
Twitter, blog, forum	0	.0
Social Network Site	0	.0
SMS, Whatsapp	6	.1
I use no channel	252	5.4
Total	4741	100.0

Figure 11.1 shows which channels are used to contact various kinds of sources. The sources are shown on the horizontal axis, the channels on the vertical axis. Except for contact with family and the NTCA, the telephone is the most used channel for all kinds of sources. With regard to family and friends face-to-face is the most used channel (56.1%). Colleagues are also often consulted via face-to-face (40.2%). In approximately a quarter of the cases, contact with the advisor (25.4%) and association (24.9%) occurs face-to-face. E-mail is mostly used to consult the advisor (21.9%) and external contacts (28.5%). The NTCA and Associations are often approached via their websites (respectively, 52.7% en 18.5%).

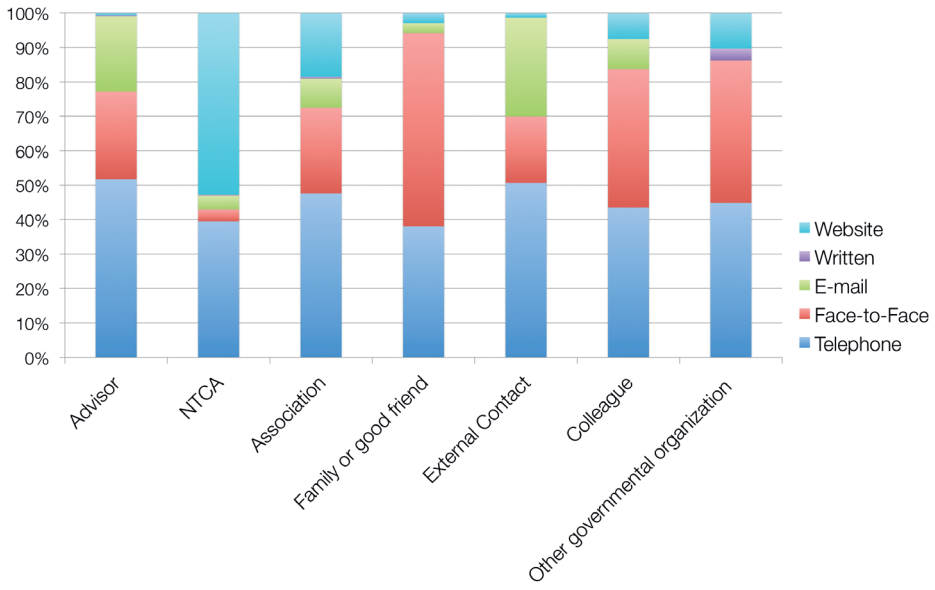

Figure 11.1 *An overview of the chosen source-channel combinations in the vignette study*

11.2 HOW THE FACTORS GENERALLY AFFECT SOURCE AND CHANNEL CHOICES

To test the main effects of the manipulated factors (complexity, specificity, and importance of tasks, available time and receiving advice) on channel and source choice a multi nominal logistic regression (NOMREG) was executed in SPSS. The manipulated factors in the vignettes were included as the independent factors in the analysis. Further, the characteristics gender, age, education and organization size were added. Two separate analyses were conducted, one with source choice as dependent variable and one with channel choice as dependent variable. The reference categories were 'I consult no source' and 'I use no channel', respectively. First, the results concerning source choice are presented, followed by the results on channel choice. These results focus only on the main effects of each predictor on source and channel choice in general. The subsequent section (§11.3) will zoom in and will discuss the results for each type of source choice and each type of channel choice separately.

GENERAL INFLUENCES ON SOURCE CHOICE

The change in unexplained variance from the baseline to the final model is considered to be significant, as $\chi^2(63)=1467.84$ with $p<.001$, which implies that the final model shows a better fit than the original model. For assessing model fit the Deviance statistic is preferred over the Pearson Statistic (Menard, 2002). The Deviance statistic shows that the model fits the data well (p=1.000). The pseudo R-square values of Cox and Snell and Nagelkerke show decently−sized effects with values of respectively R^2=.27 and R^2=.30.

Table 11.3 shows the results of the likelihood ratio tests for source choice. These tests ascertain whether the predictors are generally significant to the model. This table tells us that, except for available time (i.e., being in a hurry versus plenty of time), all predictors are significant predictors of source choice. By far the largest predictor of source choice is specificity (χ^2 =1037.473), in terms of a general task versus a task that can be very specific. The second largest predictor is complexity (χ^2 =160.931). Although importance (i.e., no consequences versus major consequences) is relatively low compared to specificity and complexity (χ^2 =59.442), these aspects of the task together form the largest predictor of source choice. Next to that, organization size is the third largest predictor of source choice (χ^2 =71.473).

Table 11.3 Likelihood Ratio Tests for factors on Source Choice

Factor	χ^2	Df	p
Complexity	160.931	7	.000
Specificity	1037.473	7	.000
Importance	59.442	7	.000
Available Time	12.603	7	.059
Getting Advice	19.062	7	.008
Gender	22.739	7	.002
Age	30.785	7	.000
Education	60.545	7	.000
Organization Size	71.473	7	.000

GENERAL INFLUENCES ON CHANNEL CHOICE

Table 11.4 below shows the results of the likelihood ratio tests for channel choice to test the whether the predictors are generally significant. This table shows that all predictors have a significant main effect on source choice. Again, the largest predictor of channel choice is specificity (χ^2=763.405), followed by complexity (χ^2 =111.784). Education level is considered to be a larger predictor for channel choice than source choice; it is the third largest predictor for channel choice (χ^2 = 98.962). All other predictors are significant, but relatively small of size compared to the three largest predictors.

Table 11.4 Likelihood Ratio Tests for factors on Channel Choice

Factor	χ^2	Df	p
Complexity	111.784	6	.000
Specificity	763.405	6	.000
Importance	64.672	6	.000
Available Time	26.576	6	.000
Getting Advice	24.277	6	.000
Gender	26.168	6	.000
Age	34.579	6	.000
Education	98.962	6	.000
Organization Size	42.787	6	.000

11.3 DIRECTION AND SIZE OF EFFECTS

The likelihood ratios discussed in the previous section do not provide insight in what the effects exactly are and what they mean for each type of source choice and each type of channel choice. Therefore, the individual parameters presented in must be examined.

We discuss the most important results below. First, the results for source choice will be presented, followed by the findings related to channel choice.

SOURCE CHOICE

The results of the executed analysis on source choice are shown in table 11.5. Except for the source Family and Friends, complexity is a significant predictor for whether or not a source is consulted. For all sources it was observed that as the task becomes less complex (i.e., easier) it is more likely that a certain source is chosen versus no source. For all sources, whether or not the a certain source will be consulted (versus no source) is not significantly predicted by whether or not there is enough time to solve a task, and whether or not advice was received about choice making in the given situation. Further, differences are identified for all other predictors; therefore, the results are discussed for each source.

As task importance decreases, it is more likely that the NTCA will not be consulted (b=−1.03, p<.001). In contrast, when the task at hand becomes more general (i.e., less specific) it is more likely that the NTCA is chosen (b=2.51, p<.001). Further, as organization size increases, but also as age increases, it becomes less likely that the NTCA is chosen (b=−.26, p<.001, b=−.23, p<01, respectively). Also education and gender affect the choice for this source. When education level increases it is more likely that the NTCA is chosen (b=.39, p<.001). Finally, men are less likely to consult the NTCA than women (b=−.53, p<.01).

Some similar results are found for the choice for the advisor. With respect to the effect of task specificity, a contrasting result to the NTCA was found. As the task becomes more general, it is less likely that the advisor is chosen (b=−.86, p<.05). Further, when age increases it is less likely that the advisor is consulted (b=−.13, p<.05). The same is true for men compared to women (b=−.35, p<.05).

In addition to the effect of complexity, only two other predictors are significant concerning the choice for a colleague. The first concerns age; as age increases people are less likely to consult a colleague (b=−.29, p<.05). In contrast, when one is higher educated it becomes more likely that a colleague is consulted (b=.48, p<.05).

Similar to the advisor, a less important and less specific task at hand results in to a decrease in the chance that an external contact will be consulted (b=−.55, p<.05, b=−.74, p<.01, respectively). Besides, as organization size increases it becomes less likely that an external contact will be chosen (b=−.19, p<.05). And as education level increases it becomes more likely that this source is consulted (b=.43, p<.01).

Table 11.5 Parameter estimates of the multinomial regression predicting source choice

		95% CI for Exp(B)		
	B(SE)	Lower	Odds Ratio	Upper
NTCA vs. No Source				
Intercept	2.11(.52)***			
Complexity	– 1.32(.16)***	.20	.27	.37
Specificity	2.41(.17)***	8.03	11.14	15.47
Importance	– 1.03(.15)***	.27	.36	.48
Available time	– .04(.14)	.73	.96	1.27
Getting advice	– .23(.14)	.60	.80	1.05
Organization Size	– .26(.07)***	.68	.77	.88
Age	– .23(.07)**	.70	.80	.91
Education	.39(.10)***	1.21	1.48	1.81
Gender	– .53(.16)**	.43	.59	.81
Advisor vs. No Source				
Intercept	4.85(.47)***			
Complexity	– 1.25(.15)***	.22	.29	.38
Specificity	– .30(.13)*	.58	.74	.96
Importance	– .86(.14)***	.33	.43	.56
Available time	.12(.13)	.87	1.12	1.45
Getting advice	– .07(.13)	.72	.93	1.20
Organization Size	– .08(.06)	.82	.92	1.04
Age	– .13(.06)*	.78	.88	.99
Education	– .02(.09)	.82	.98	1.17
Gender	– .35(.15)*	.53	.70	.94
Colleague vs. No Source				
Intercept	– .27(.92)			
Complexity	– .62(.03)*	.32	.54	.92
Specificity	– .08(.26)	.56	.92	1.52
Importance	– .40(.27)	.40	.67	1.13
Available time	.19(.25)	.73	1.21	1.99
Getting advice	– .02(.26)	.60	.99	1.62
Organization Size	– . 10(.12)	.72	.91	1.15
Age	– .29(.12)*	.60	.75	.94
Education	.48(.20)*	1.09	1.62	2.42
Gender	.03(.30)	.58	1.03	1.84

Table 11.5 (continued)

	B(SE)	95% CI for Exp(B)		
		Lower	Odds Ratio	Upper
External contact vs. No Source				
Intercept	– .23(.77)			
Complexity	– .52(.23)*	.38	.60	.93
Specificity	– .74(.22)**	.31	.48	.73
Importance	– .55(.22)*	.38	.58	.88
Available time	– .19(.21)	.55	.83	1.25
Getting advice	.26(.21)	.86	1.30	1.95
Organization Size	– .19(.10)*	.68	.82	1.00
Age	– .01(.10)	.82	1.00	1.21
Education	.43(.16)**	1.12	1.54	2.12
Gender	– .12(.24)	.56	.89	1.43
Familiy/Friend/Acquaintance vs. No Source				
Intercept	3.41(.75)***			
Complexity	– .21(.25)	.50	.81	1.31
Specificity	–1.65(.23)***	.11	.19	.33
Importance	– .90(.23)***	.26	.41	.63
Available time	– .11(.22)	.58	.90	1.39
Getting advice	.31(.22)	.88	1.37	2.12
Organization Size	– .48(.11)***	.50	.62	.77
Age	– .41(.10)***	.55	.66	.81
Education	– .10(.16)	.67	.91	1.23
Gender	– .01(.25)	.60	.99	1.63
Association vs. No Source				
Intercept	3.47(.76)***			
Complexity	–2.16(.25)***	.07	.12	.19
Specificity	–1.75(.29)***	.10	.17	.31
Importance	–1.06(.23)***	.22	.35	.54
Available time	– .36(.22)	.45	.70	1.08
Getting advice	– .19(.22)	.54	.83	1.28
Organization Size	– .58(.11)***	.45	.56	.70
Age	– .08(.10)	.76	.93	1.13
Education	.13(.16)	.83	1.14	1.57
Gender	– .72(.24)**	.31	.49	.78

Note: R^2=.27 (Cox & Snell), .30 (Nagelkerke). Model $\chi^2(63)$ =1467.84, p<.001, *p<.05,**p<01,***p<.001
The reference category for gender was “women” and for education this was “high education level”.

Again, as a task becomes less important and less specific, it becomes less likely that family or friends are chosen (b=−1.65, p<.001, b=−.90, p<.001, respectively). As organization size increases and respondents become older, it becomes less likely that this source is consulted (b=.48, p<.001, b=41, p<.001, respectively).

With respect to whether or not associations are consulted a similar pattern is observed concerning the effects of task specificity and importance. A less important and a less specific task at hand leads to a decrease in the chance that an association will be consulted (respectively b=−1.06, p<.001, b=−1.75, p<.001). As organization size increases it becomes less likely that this source is consulted (b=−.58, p<.001). Finally, men are less likely to consult associations than women (b=−.53, p<.01).

In a next NOMREG analysis we focused on two-way interaction effects between the predictors: social influence, task characteristics, available time, and organization size. Two interaction effects were found. The first concerns the interaction between importance of the task with getting advice, b=−.69, Wald χ^2 (1)=5.14, p<.05. This means that the chance of consulting the NTCA decreases when no advice was received about what choices to make and the question at hand is unimportant. This interaction effect was found only for the NTCA. Another interaction effect was found between organization size and getting advice b=1.71, Wald χ^2 (1)=4.588, p<.05. This effect was found regarding the choice for a colleague as an information source. This implies that the chance of choosing a colleague increases when someone working in a medium sized organization received no advice about what choices to make.

CHANNEL CHOICE

Similar to the results for source choice, the change in unexplained variance from the baseline to the final model is considered to be significant, as χ^2 (54) =1184.98 with p<.001. The Deviance statistic show that the model fits the data well (p=1.000). The pseudo R-square values of Cox and Snell and Nagelkerke are respectively R^2=.22 and R^2=.24. Table 11.6 reflects the results.

It becomes less likely that a certain channel is selected when the task becomes less complex. This applies to all channels. Except for the written channel, when the task becomes less important, it is less likely that a certain channel is chosen (instead of no channel). In addition to the effects of task complexity and importance, gender is a significant predictor of whether or not the telephone is selected versus no channel. Men are less likely to choose the telephone to contact a source than women (b=−.33, p<.05).

With respect to the face-to-face channel organization size and task specificity are significant predictors. When the task becomes less specific, it is less likely that there is face-to-face communication (b=−1.01, p<.001). As organization size increases it becomes less likely that this channel is selected (b=−.27, p<.001).

When a task becomes more general (i.e., less specific) it becomes less likely that the e-mail is chosen (b= −1.00, p<.001). Further, all personal characteristics affect the selection of this channel. As age increases it is less likely that e-mail is chosen (b=−.21, p<.01). As education level increases, it becomes more likely that this channel is selected (b=.34, p<.01). Further, men are less likely to select this channel compared to women (b=−.50, p<.01).

The strongest predictors for the website are education and task specificity. When a task becomes more general, it becomes much more likely that the website is visited (b=2.17, p<.001). The same effect is observed for education; when the education level increases, it is more likely that this channel is chosen (b=.62, p<.001). Getting advice is for this channel a significant predictor. This is contrasting to all other sources. When no advice is received it becomes less likely that the website is chosen (b=−.49, p<.01). Further, as organization size increases, the chance decreases that the website is visited (b=−.28, p<.001). When one's getting older it is less likely that the website is chosen (b=−.30, p<.001).

Similar to the model for source choice, we ran another NOMREG to uncover possible interaction effects between social influence, task characteristics, available time, and organization size. Again, two interaction effects were identified. The first concerns the written channel (versus no channel). There is an interaction effect identified for importance of the task with getting advice, b=−3.36, Wald χ^2 (1)=6.117, p<.05. This result implies that the chance that the written channel will be selected decreases when no advice is received and the task at hand is simple. The other way around; the chance that the written channel is chosen increases when advice is received concerning an important task. The second interaction effect is related to the choice for the website (versus no channel). Getting advice interacts with the specificity of a task, b=−1.46, Wald χ^2 (1)=14.616, p<.001. The chance that the website is visited decreases when the task is general of nature and no advice about what choices to make exists.

Table 11.6 Parameter estimates of the multinomial regression predicting channel choice

		95% CI for Exp(B)		
	B(SE)	Lower	Odds ratio	Upper
Telephone vs. No Channel				
Intercept	4.44 (.48)***			
Complexity	– 1.22 (.15)***	.22	.30	.40
Specificity	– .08 (.13)	.71	.92	1.20
Importance	– .95 (.14)***	.29	.39	.51
Available time	.20 (.13)	.95	1.22	1.58
Getting advice	– .02 (.13)	.76	.99	1.28
Organization Size	– .09 (.06)	.81	.91	1.03
Age	– .09 (.06)	.81	.91	1.03
Education	– .07 (.09)	.78	.94	1.12
Gender	– .33 (.15)*	.53	.72	.97
Face-to-face vs. No Channel				
Intercept	4.31 (.52)***			
Complexity	– 1.45 (.16)***	.17	.24	.32
Specificity	– 1.38 (.15)***	.19	.25	.34
Importance	– 1.01 (.15)***	.27	.36	.49
Available Time	.13 (.14)	.86	1.14	1.51
Getting advice	– .06 (.14)	.71	.94	1.24
Organization Size	– .27 (.07)***	.67	.76	.87
Age	– .11 (.07)	.79	.90	1.03
Education	– .01 (.10)	.81	.99	1.21
Gender	– .19 (.17)	.59	.82	1.14
E-mail vs. No Channel				
Intercept	2.67 (.52)***			
Complexity	– 1.00 (.16)***	.27	.37	.50
Specificity	.40 (.15)*	1.13	1.50	1.99
Importance	– .65 (.15)***	.39	.52	.71
Available time	– .11 (.14)	.67	.89	1.18
Getting advice	– .15 (.14)	.65	.86	1.14
Organization Size	– .09 (.07)	.80	.92	1.05
Age	– .21 (.07)**	.71	.81	.93
Education	.34 (.11)**	1.15	1.41	1.73
Gender	– .50 (.16)**	.44	.61	.84

Table 11.6 (continued)

	B(SE)	95% CI for Exp(B) Lower	Odds ratio	Upper
Written vs. No Channel				
Intercept	– 1.40 (1.7)			
Complexity	– 2.15 (.54)***	.04	.12	.34
Specificity	1.04 (.54)	.98	2.82	8.11
Importance	– .70 (.48)	.19	.50	1.28
Available time	– .07 (.48)	.37	.94	2.38
Getting advice	– .03 (.48)	.38	.97	2.48
Organization Size	.06 (.22)	.68	1.06	1.64
Age	– .10 (.23)	.58	.90	1.41
Education	.11 (.35)	.57	1.12	2.20
Gender	– .35 (.52)	.25	.70	1.95
Website vs. No Channel				
Intercept	1.63 (.56)**			
Complexity	– 1.09 (.17)***	.24	.34	.47
Specificity	2.17 (.18)***	6.09	8.73	12.52
Importance	– .77 (.16)***	.34	.46	.64
Available time	– .23 (.15)	.59	.80	1.08
Getting advice	– .49 (.15)**	.45	.61	.83
Organization Size	– .28 (.07)***	.65	.75	.87
Age	– .30 (.07)***	.65	.74	.86
Education	.62 (.12)***	1.47	1.85	2.34
Gender	– .70 (.17)***	.35	.50	.70

Note: R^2=.22 (Cox & Snell), .24 (Nagelkerke). Model χ^2 (54) =1184.98, p<.001, *p<.05,**p<01,***p<.001
The reference category for gender was "women" and for education this was "high education level".

11.4 THE INTERRELATION BETWEEN SOURCE AND CHANNEL CHOICES

To study the interrelation between source and channel choice a chi-square test was executed. The results for this test are shown in table 11.7. The results show that there is a significant association between the selected source and the chosen channel $\chi^2(42)=6916.12$, $p<.001$. The values of the standardized residuals are used to interpret the results. This value is the error between the expected frequency (what the model predicts) and the observed frequency (what the data actually observed). A positive value indicates an overrepresentation and a negative value indicates an underrepresentation. If the value is greater than 1.96 or lower than −1.96 the over or underrepresentation is considered to be significant at $p<.05$ (Field, 2009). However, when inspecting many cells, some standard residuals could be large due to random variation, which leads false significant effects (Agresti & Finlay, 2009). Therefore, Agresti and Finlay (2009) argue that a value greater than 3 or lower than −3 reflects a true effect.

The results in table 11.7 show the strongest significant underrepresentations for the combinations NTCA with face-to-face ($z=-11.3$), advisor with the website ($z=-18.1$), and NTCA with e-mail ($z=-8.8$). Significant, but less strong underrepresentations exist for the combinations NTCA with the telephone ($z=-3.8$), external contact with the website ($z=-3.9$), and family/friends with the website ($z=-3.4$) as well as with e-mail ($z=-3.6$). By far the most strong overrepresented combination is NTCA with the website ($z=36.9$). Other strong overrepresentations concern the advisor with e-mail ($z=8.1$), with the telephone ($z=5.8$), and with face-to-face ($z=5.4$) as well as the combinations colleague with face-to-face ($z=6.8$) and family/friends with face-to-face ($z=9.2$).

11.5 SUMMARIZING THE FINDINGS OF THE VIGNETTE STUDY

One of the more significant findings to emerge from this study is that the significance, strength and type of relationship (e.g., positive or negative) between the influencing factors and the various source and channel choices vary. This indicates that although some factors show consistent results, various aspects influence the selection of various sources and channels. This variety leads to the notion that source-channel combinations fulfill various roles for the information seeker.

Some channels were chosen relatively fewer times to consult a certain source. Source-channel combinations that were more chosen than others are the NTCA with the website, the advisor with e-mail as well as the telephone and face-to-face, and colleagues and family/friends both via face-to-face communication. Conversely, combinations that were seldom selected are the NTCA with e-mail as well as the telephone and face-to-face. The

Table 11.7 Results of the Chi-square test for Source and Channel Choices in the 32 vignettes

			Type of Channel							Total
			Telephone	Face-to-face	E-mail	Written	Website	SMS/ Whatsapp	I choose no channel	
Type of Source	NTCA	Count	386	25	48	4	518	0	0	981
		Expected Count	467.5	174.1	159.1	3.5	117.9	1.2	57.7	981
		Std. Residual	–3.8***	–11.3***	–8.8***	0.3	36.9***	–1.1	–7.6***	
	Advisor	Count	1629	649	657	10	14	2	0	2961
		Expected Count	1411	525.4	480.3	10.6	355.7	3.8	174.1	2961
		Std. Residual	5.8***	5.4***	8.1***	–0.2	–18.1***	–0.9	–13.2***	
	Colleague	Count	30	40	7	0	3	1	0	81
		Expected Count	38.6	14.4	13.1	0.3	9.7	0.1	4.8	81
		Std. Residual	–1.4	6.8***	–1.7	–0.5	–2.2**	2.8**	–2.2**	
	External Contact	Count	79	27	34	0	1	2	0	143
		Expected Count	68.1	25.4	23.2	0.5	17.2	0.2	8.4	143
		Std. Residual	1.3	0.3	2.2**	–0.7	–3.9***	4.3***	–2.9**	
	Family/Friends	Count	53	66	4	0	2	1	0	126
		Expected Count	60	22.4	20.4	0.5	15.1	0.2	7.4	126
		Std. Residual	–0.9	9.2***	–3.6***	–0.7	–3.4***	2.1*	–2.7**	
	Associations	Count	57	27	16	1	26	0	0	127
		Expected Count	60.5	22.5	20.6	0.5	15.3	0.2	7.5	127
		Std. Residual	–0.5	0.9	–1	0.8	2.8**	–0.4	–2.7**	
	I consult no source	Count	4	0	0	0	2	0	278	284
		Expected Count	135.3	50.4	46.1	1	34.1	0.4	16.7	284
		Std. Residual	–11.3***	–7.1***	–6.8***	–1	–5.5***	–0.6	63.9***	
Total		Count	2253	839	767	17	568	6	278	4728
		Expected Count	2253	839	767	17	568	6	278	4728

Note. *p<.05, **p<.01, ***p<.001.

channel website was rarely selected for the advisor, external contact, and family/friends as sources of information.

Factors that, according to our findings, are no predictors for both source and channel choice are the situational aspect, available time, as well as social influence. However, we found interaction results with respect to source choice regarding social influence with organization size and task characteristics. In addition, when a different reference category was chosen (e.g., telephone) available time was of influence for the website. This indicates that these aspects are interrelated to other variables in order to influence choices.

Complexity, importance and in particular specificity of the task emerged as reliable predictors of both source and channel choice. The results indicate that a task has to be perceived to some extent as complex in order to take action (when the task is do not reaches a particular level of complexity, it becomes more likely that no source is selected instead of any other source). Though for some sources this effect is stronger (e.g., association, NTCA) than for other sources (e.g., external source, colleague). This pattern is even stronger observed for channel choice. The effect is least strong for e-mail and website, and strongest for written and face-to-face. A similar but more weaken pattern and influence is observed concerning importance of the task.

By far the largest predictor for both source and channel choice is the specificity of the task. These results indicate that sources and channel fulfill various roles, given the observed differences in the direction of the influence. With respect to source choice it is obvious that the NTCA is consulted for general tasks. In contrast, associations but also friends and family are consulted for more specific tasks. For channel choice it was observed that the website is chosen for general tasks and face-to-face to solve the more specific tasks. Other channels such as the telephone and e-mail are considered as suitable for both types of tasks, since no effect was found.

The largest predictor concerning personal and organization characteristics is education, followed by organization size. People that are higher educated are more likely to use electronic channels and consult formal sources. Larger organizations are less likely to visit websites and have face-to-face communication. Only the advisor is independently chosen from the size of an organization, for all other sources it is observed that larger organization are less likely to consult a source compared to no source. Similar, when age increases it is found that each source is chosen less. This effect is least strong for the more formal sources. With regard to channel choice, the channels e-mail and website are less chosen when age increases.

CHAPTER 12

TESTING THE CONCEPTUAL RESEARCH MODEL

This chapter tests the conceptual research model as proposed in chapter 8. It starts with developing the measurement model (§12.1), which is divided into three parts: 1) source choice, 2) channel choice, and 3) perceived source characteristics. After finalizing the measurement model, this section ends with providing some first descriptive results that describe the correlations between all latent variables. Subsequently, the second section (§12.2) tests the conceptual model and, thus, provides answers to the core research question of this dissertation. The chapter ends with providing a summary of the findings and an overview of the supported and rejected hypotheses (§12.3).

12.1 THE MEASUREMENT MODEL

Prior to the development of the structural model it is important to have a measurement model that is reliable and valid and fits the data well. In this section we will develop such a model. As a first step, data reduction will be performed to realize a compact set of items that are of good quality. For this, an exploratory approach is adopted. Subsequently, by testing the robustness of the measurement model, we first need to decide whether 'normal' structural equation modeling would be suitable to develop the structural model or, the more recently developed, exploratory structural equation modeling (ESEM). Next, the measurement model will be finalized and a first descriptive analysis will be conducted to examine correlations between the latent variables.

DATA REDUCTION

Data reduction was performed by exploratory factor analyses (EFA) in Mplus version 7.11, developed by Muthén and Muthén (1998−2012). Mplus was used for structural equation modeling (SEM) since this program allows modeling with nominal dependent variables (source and channel choice). Other SEM programs, such as AMOS, would only be able to analyze models with this type of variables when dummy variables are used (i.e., each category is a separate dependent variable with values 0 and 1).

This section starts with explaining the general process of data reduction (i.e., the steps that were generally taken after each other). Subsequently, zooming on the three parts of the measurement model separately will provide a more detailed explanation: 1) source choice, 2) channel choice, and 3) perceived source characteristics.

Steps generally taken in the process of data reduction

The first step in data reduction was to analyze the intended measurement model and include all items, divided into three sets factors, within the EFA: a) source choice, b) channel choice, and c) perceived source characteristics. The latter set was treated separately, due to the fact that the derived data was based on source-specific questions, as explained earlier in chapter 9. We ran several measurement models consecutively with a varying number of factors for each set, but including all items. The model with the best relative model fit, according to the BIC and AIC measures, was chosen. All analyses used oblique (Geomin) rotation. Oblique rotation is preferred in this situation since it provides a realistic depiction of how the latent variables are interrelated (Browne, 2006). In the end, a 6 factor-set for source choice, 5 factor-set for channel choice, and a 10 factor−set for perceived source characteristics (for each source 2 factors) were found to be most suitable. The results of these first EFA analyses, where all items were still included, can be found in appendices 1 (source choice), 2 (channel choice), and 3 (perceived source characteristics). The model fit indices, regarding the first EFA solution, are presented in table 12.1. The RMSEA and SRMR indicate both a good model fit with values of respectively .029 and .034. In contrast, the TLI and CFI are both below the threshold of .90, which indicate a poor fit (see box 12.1 for explanations of these fit indices).

Table 12.1 Model fit indices first, second and final EFA solutions

	First EFA solution	Second EFA Solution	Final EFA Solution
RMSEA	.029 (CI: .028–.030)	.021 (CI: .020–.022)	.020 (CI: .018–.022)
CFI	.894	.954	.964
TLI	.877	.944	.955
SRMR	.035	.031	.029
AIC	330503	260844	230349
BIC	334286	263805	233091

Next, for the first time, several items were removed from the analysis to realize a more stable factor solution and a better−fitting measurement model. With respect to source choice six items were removed. For channel choice we removed eight items. Only one item was deleted regarding perceived source characteristics. Detailed information about the process of data reduction is provided in the upcoming sections. After we removed these items we ran a second EFA. The model fit improved in particular with respect to the values of TLI and CFI and can now be considered as good. Also the values of AIC and BIC have decreased compared to the first EFA solution. Nevertheless, we ran a third EFA analysis since some (new) cross−loadings were identified in this second factor solution. No more

items for channel choice were removed. Concerning source choice items 21 and 25 were removed, for channel choice this was item 18, and for perceived source characteristics a second item was deleted. The final factor solutions are presented in the three upcoming sections, we discuss the labeling of the factors as well as the internal consistency of the scales and the discriminant validity of the constructs in the various final factor solutions.

Box 12.1—Interpretation model fit indices RMSEA, CFI, TLI, and SRMR

The root mean square error of approximation (RMSEA) is a fit statistic of parsimony. Although a value less than or equal to .05 is preferred a value less than or equal to .08 shows an adequate fit (Morin, Marsh, & Nagengast, 2013). Hu and Bentler (1999) argued that a value of less than or equal to .06 is the cutoff for a good model fit. The Comparative Fit Index (CFI) of Bentler (1990) compares the model fit with a null model. It assumes that all latent variables are uncorrelated. Hu and Bentler (1999) have suggested that a value greater than or equal to .90 is needed to ensure that misspecified models are rejected. However, a value greater than or equal to .95 indicates a good model fit. The Tucker–Lewis Index (TLI) prefers simpler models. One disadvantage is that it is sensitive to small samples sizes. When the model fits perfectly the TLI value is 1. By convention, a value of at least .90 is required to accept a model (Hox & Bechger, 1998). The model fit can be considered as good if the value is at least .95 (Hu & Bentler, 1999). The standardized root mean square residual (SRMR) is an indicator of absolute fit. Models that fit well have a value less than .05, however, a value up to .08 is considered as acceptable (Hu & Bentler, 1998).

The steps taken in developing a measurement model for source choice

The first factor solution for source choice can be found in appendix 1. The final factor olution is shown in table 12.2 on the next page. For the final factor solution we examined the internal consistency of the scales, measured with Cronbach's α coefficients, as well as the discriminant validity based on the Fornell and Larcker criterion (1981). See for an explanation about the interpretation of these measurements box 12.2 . This section discusses each factor that emerged from our data separately, starting with *prior experiences.*

Box 12.2—Interpretation Cronbach's α coefficient and the Fornell and Larcker criterion

Usually, in the literature a scale is considered to be reliable when $\alpha \geq .70$ (Peterson, 1994; Nunnally & Bernstein, 1994). Murphy and Davidshofer (1988) argued that a coefficient alpha between .70 and .60 is low but acceptable, and below .60 is unacceptable.

Discriminant validity concerns the degree to which items measure distinct concepts or differentiate between constructs. According to the Fornell and Larcker criterion (1981) discriminant validity is met when the indicators load more strongly on their corresponding constructs than on other constructs included.

The first factor that emerged from the data can be labeled as *prior experiences*. One (nr.1) of the items shows a very low loading on the factor where the other two items (nr. 2 and 3) show high loadings. Moreover, that particular item shows a quite high loading on the

fourth factor. It was decided to remove this item. Although a just acceptable reliability of prior experiences (α =.650) was observed, the scale could be interpreted as reliable, since an inter−item correlation of .483 was found. This indicates that both items are reliable (Ferketich, 1991).

The second factor is labeled as *task characteristics*. One of the six items (nr. 5) shows a high cross loading and was therefore excluded in further analysis. This resulted in a reliable scale for task characteristics with five items (α = .799).

Table 12.2 Final EFA factor solution Source Choice

		Prior Experiences	Task Characteristics	Situational Factors	Relationship Characteristics	Social Influences	Trust
Nr.	Coded item	F1	F2	F3	F4	F5	F6
2	SERV2	**0.583**	0.096	0.034	–0.051	0.009	0.044
3	SERV3	**0.793**	–0.057	0.010	0.015	–0.002	–0.017
4	SCOMPL1	–0.003	**0.750**	–0.016	0.009	–0.001	–0.049
6	SSPEC1	0.023	**0.729**	–0.015	0.025	–0.057	–0.043
7	SSPEC2	0.097	**0.395**	–0.023	0.072	0.157	0.048
8	SCONS1	–0.066	**0.745**	0.051	–0.009	0.014	0.028
9	SCONS2	0.004	**0.601**	0.048	–0.019	0.095	0.201
10	STIME1	0.001	0.066	**0.778**	–0.014	–0.013	–0.004
11	STIME2	0.000	–0.018	**0.797**	–0.009	–0.001	0.004
12	SDIST1	0.066	–0.035	**0.301**	0.134	0.139	0.017
14	SAVTIME1	0.178	0.047	**0.296**	0.084	0.071	–0.027
17	SSOCIN2	0.051	0.060	–0.019	0.185	**0.477**	–0.030
18	SSOCIN3	0.026	–0.022	0.004	0.040	**0.715**	0.116
19	SSOCIN4	–0.077	0.038	0.033	–0.061	**0.747**	–0.028
22	SFREQ3	0.106	0.031	–0.011	**0.638**	–0.109	0.093
23	SCLOSE1	–0.115	0.006	0.104	**0.656**	0.047	–0.045
24	SCLOSE2	0.012	–0.047	0.018	**0.740**	0.000	0.025
26	SNAT2	–0.036	0.027	–0.059	**0.654**	0.046	–0.025
27	STRUST1	0.051	0.005	–0.046	–0.005	0.039	**0.802**
28	STRUST2	0.005	0.070	–0.018	–0.028	–0.005	**0.760**
29	STRUST3	–0.055	–0.070	0.083	0.087	–0.050	**0.583**

Note. Factor loadings >.3 are depicted in bold.

The third factor consists of items with high loadings, all of them related to *situational* aspects. However, two of the six items (nr. 13 and 15) were removed, due very high loadings on other factors. This resulted in a marginally acceptable scale with four items (α= .695). These four items are related to distance, point of time and available time, which form together the construct situational factors.

The fourth factor that emerged contained items 27 to 29, which are all related to the concept of *trust*, and together form a reliable scale (α = .727). Originally, these items were supposed to correlate with items on relationship aspects. Since these items form clearly a separate factor, trust is included as a latent factor on its own.

Factor 5 can be labeled as *relationship characteristics* and contains items that are related to frequency of contact, closeness, and nature of the relationship. There are some supportive (though inconsistent) findings in the literature that frequency of contact is one of the indicators for tie-strength (e.g., Granovetter 1973; Weimann, 1983; Brown & Reingen, 1987). Contrasting findings are derived from Marsden and Campbell (1984). They noticed difficulties with this indicator as it could lead to overestimation of tie-strength. Since the current study intends to gain insight in the effect of relationships characteristics in general, and has no specific attention for strength, it is decided to merge two items of frequency, nature of a relationship and closeness into one single construct of relationship characteristics. Based on results of the first EFA, one item considering frequency (nr. 16) was deleted as it showed a high cross loading. However, after running the second EFA more cross−loadings related to this construct appeared in the factor solution. It was decided to, again, remove some items (nr. 21 and 25). In the end a reliable scale was formed (α=.780).

The final factor that emerged from the data can be labeled as *social influence*. One item (nr. 19) loaded also on the factor prior experiences. It is possible that these two are correlated, since experiences of others and yourself can be both of importance. Due to the high factor loadings on both factors this item was deleted, which resulted in a marginally acceptable reliable scale (α = .696).

Table 12.3 shows the correlation matrix of the items included in the final measurement model for source choice to examine the discriminant validity. The results indicate that the criterion for discriminant validity has been met.

Table 12.3 Correlation matrix of the items that measure the latent variables for source choice (experiences,

	SERV2	SERV3	SCOM-PL1	SSPEC1	SSPEC2	SCONS1	SCONS2	STIME1	STIME2	SDIST1	SAV-TIME1
SERV2	-	.517	.134	.093	.163	.090	.186	.087	.120	.096	.144
SERV3		-	*.051*	*.033*	.089	*.028*	.142	.099	.075	.080	.213
SCOMPL1			-	.570	.367	.561	.462	.206	.182	.117	.171
SSPEC1				-	.399	.467	.415	.203	.169	.160	.146
SSPEC2					-	.293	.388	.123	.101	.093	.100
SCONS1						-	.573	.195	.198	.132	.206
SCONS2							-	.219	.178	.133	.172
STIME1								-	.628	.272	.289
STIME2									-	.354	.302
SDIST1										-	.337
SAVTIME1											-
SSOCIN2											
SSOCIN3											
SSOCIN4											
SFREQ3											
SCLOSE1											
SCLOSE2											
SNAT2											
STRUST1											
STRUST2											
STRUST3											

Note. Significant at p<.05; non-significant correlations are in Italic.

task characteristics, situational factors, social influence, relationship characteristics, and trust)

SSOCIN2	SSOCIN3	SSOCIN4	SFREQ3	SCLOSE1	SCLOSE2	SNAT2	STRUST1	STRUST2	STRUST3
.115	.109	*.032*	.146	*.001*	.076	*.025*	.258	.217	.115
.062	.110	*.015*	.130	*.026*	.089	*.024*	.251	.222	.134
.237	.234	.308	*.050*	.150	.105	.093	.122	.168	*.047*
.218	.204	.268	*.037*	.138	.080	.065	.091	.108	*.051*
.280	.257	.201	.209	.155	.219	.146	.199	.204	.112
.247	.312	.353	.106	.138	.103	.133	.168	.181	.079
.208	.336	.247	.142	.102	.110	.118	.294	.331	.175
.153	.191	.195	.077	.114	.090	.079	*.042*	*.057*	*.035*
.135	.160	.189	.059	.181	.112	.105	*.014*	*.010*	*.005*
.167	.141	.155	*.047*	.178	.116	.101	*.044*	*.029*	*-.001*
.148	.170	.130	.108	.146	.120	.101	.077	.060	.050
-	.415	.374	.216	.272	.270	.215	.094	.039	.089
	-	.522	.189	.227	.189	.191	.225	.170	.119
		-	*.050*	.225	.139	.166	.072	.036	.012
			-	.345	.439	.384	.221	.182	.203
				-	.500	.396	.026	*-.010*	.064
					-	.459	.142	.078	.159
						-	.087	.083	.075
							-	.658	.471
								-	.471
									-

The steps taken in developing a measurement model for channel choice

The first factor solution for channel choice can be found in appendix 2. The final factor solution is shown in table 12.4. The process of data reduction as well as the reliability of the formed scales will be discussed below. Table 12.4 presents an overview of the reliability values (Cronbach's Alpha's) of the final scales or constructs for both source and channel choice discussed in the previous and present section.

Table 12.4 Final EFA Factor solution Channel Choice

		Task Characteristics	Situational Factors	Prior Experiences	Social Influence	Relationship Characteristics
Nr	Coded Item	F1	F2	F3	F4	F5
2	CCONS2	**0.882**	–0.065	0.040	0.064	–0.038
3	CSPEC1	**0.730**	–0.004	0.029	0.140	–0.001
5	CCOMPL1	**0.816**	0.047	0.040	–0.010	0.029
6	CCOMPL2	**0.587**	0.154	–0.124	–0.071	0.242
7	CAVTIME1	0.092	**0.446**	0.114	0.016	0.135
9	CTIME1	0.113	**0.775**	0.042	–0.032	–0.081
10	CTIME2	–0.046	**0.779**	–0.034	0.045	0.019
12	CDIST2	–0.028	**0.419**	–0.001	0.101	0.211
13	CSOCIN1	–0.026	0.005	–0.002	**0.588**	**0.374**
14	CSOCIN2	0.033	0.055	0.155	**0.456**	0.007
15	CSOCIN3	0.198	0.002	–0.009	**0.710**	–0.003
19	CNAT1	0.236	0.046	–0.024	0.053	**0.529**
22	CFREQ2	0.018	0.018	0.124	0.057	**0.630**
23	CFREQ3	0.005	–0.075	0.223	–0.046	**0.612**
24	CERV1	–0.027	0.026	**0.835**	0.043	–0.026
25	CERV2	–0.006	0.018	**0.737**	0.027	0.118
26	CERV3	0.080	0.003	**0.795**	–0.056	0.005

Note. Factor loadings >.3 are depicted in bold.

The first factor (factor 1) that appears out of the data can be labeled as *task characteristics*. Three of these items show cross loadings in the first and second factor. The second factor (factor 2), in the first EFA solution (appendix 2) seems to be a residual factor that contains various single items that could not be identified and labeled as a certain factor. We decided to remove this factor from further analysis, and thus also the items that show high loadings on this factor (items 1, 4). The four-remainder items form a reliable scale (α= .862).

The third factor (factor 3 in first EFA, and factor 2 in final EFA) contains items related to *situational* aspects. Item number 8 and 11 that loaded only on respectively the factors 2 and 10 were removed. The four-remainder items for situational factors formed a reliable construct (α = .769).

Again, the items related to *frequency of contact and nature of the relationship* were grouped together into a single factor (factor 4 in first EFA, and factor 5 in final EFA). Items number 17, 20 and 21 were deleted due to respectively its double loading and absence of an acceptable high loading on any factor. After rerunning the EFA, another item (nr. 18) was in trouble and was therefore removed. In the end, a reliable scale was formed (α = .718). Factor 5 in the first EFA solution (and factor 4 in final EFA, see table 12.4) contains four items with high loadings, which can be labeled as social *influence*. However, number 16 is deleted due to a cross loading on factor 9. This results in a reliable scale (α = .731). The final factor that emerged from the data can be labeled as *experiences* (factor 6 in first EFA, factor 3 in final EFA). The three items that were supposed to measure this construct were grouped together into one factor and form a reliable construct (α = .848).

Table 12.5 Overview of Cronbach's Alpha's (α) for each final construct

Construct	Source Choice	Channel Choice
Task characteristics	.799	.862
Situational Factors	.695	.769
Prior Experiences	.650	.848
Social Influence	.696	.731
Relationship Characteristics	.780	.718
Trust	.727	-

Table 12.6 shows the correlation matrix of the items included in the final measurement model for channel choice. The results indicate that the criterion for discriminant validity has been met.

The steps taken in developing a measurement model for perceived source characteristics

The third set of factors contains items that are source-specific, and contain information about perceived source characteristics. For each source two factors emerged from the data. The first EFA factor solution is presented in appendix 3. The final EFA solution can be found on the next page, table 12.7. Roughly, two items EXP1 and EXP2 form together a factor that can be identified as *perceived expertise*. Items INVOLV, ACCESS, APPRO and TRUST are grouped together and labeled as *perceived service skills*. The item THINK was removed, since it had cross-loadings for three out of the five different sources. The other items were retained in the second analysis. However, the results of the second factor solution uncover another cross loading with regard to the items INVOLV and TRUST. Since the latter item seems the most problematic it was decided to remove this item as well. This resulted in reliable scales for *service skills* of the *government* (α = .852), *advisor* (α = .897), *external contact* (α = .924), *family/friends* (α = .876), and *associations* (α = .892).

Table 12.6 Correlation matrix of the items that measure the latent variables for channel choice (prior

	CCONS2	CSPEC1	CCOMPL1	CCOMPL2	CAVTIME1	CTIME1	CTIME2	CDIST2
CCONS2	-	.680	.708	.525	.330	.355	.265	.276
CSPEC1		-	.639	.508	.328	.379	.302	.317
CCOMPL1			-	.599	.368	.452	.341	.278
CCOMPL2				-	.387	.388	.381	.306
CAVTIME1					-	.469	.450	.438
CTIME1						-	.597	.425
CTIME2							-	.376
CDIST2								-
CSOCIN1								
CSOCIN2								
CSOCIN3								
CNAT1								
CFREQ2								
CFREQ2								
CERV1								
CERV2								
CERV3								

Note. Significant at p<.05; non-significant correlations are in Italic.

Table 12.7 Final EFA solution for Perceived Source Characteristics

	Government		External Contact	
	Expertise	Service Skills	Expertise	Service Skills
Item	F1	F2	F3	F4
No expertise vs. Expertise	**0.884**	0.048	**0.939**	0.010
No experience vs. Experienced	**0.963**	–0.012	**0.995**	–0.006
Not involved vs. Involved	0.160	**0.573**	0.197	**0.683**
Not accessible vs. Accessible	0.008	**0.841**	–0.050	**0.971**
Not approachable vs. Approachable	–0.013	**0.948**	0.008	**0.957**

Note. Factor loadings >.3 are depicted in bold.

experiences, task characteristics, situational factors, social influence, and relationship characteristics)

CSOCIN1	CSOCIN2	CSOCIN3	CNAT1	CFREQ2	CFREQ2	CERV1	CERV2	CERV3
.285	.312	.368	.371	.294	.252	.330	.340	.351
.364	.326	.420	.367	.287	.244	.347	.366	.360
.241	.261	.323	.353	.287	.256	.333	.340	.357
.290	.213	.259	.375	.317	.289	.197	.242	.205
.292	.213	.263	.286	.278	.237	.226	.243	.226
.215	.223	.261	.339	.257	.188	.205	.231	.228
.278	.192	.277	.343	.252	.212	.138	.162	.109
.315	.254	.292	.321	.329	.240	.170	.190	.118
-	.403	.515	.385	.394	.309	.236	.275	.204
	-	.504	.287	.310	.197	.319	.304	.263
		-	.273	.305	.172	.231	.247	.182
			-	.453	.451	.218	.295	.248
				-	.476	.273	.333	.254
					-	.331	.341	.320
						-	.701	.672
							-	.665
								-

Family/Friends		Associations		Advisors	
Expertise	Service Skills	Expertise	Service Skills	Expertise	Service Skills
F5	F6	F7	F8	F9	F10
0.935	–0.002	**1.006**	–0.008	**0.967**	–0.012
0.971	0.001	**0.833**	0.143	**0.929**	0.021
0.281	**0.593**	**0.347**	**0.525**	**0.354**	**0.470**
0.005	**0.928**	–0.017	**0.929**	–0.022	**0.967**
–0.011	**0.968**	0.011	**0.941**	0.055	**0.905**

ROBUSTNESS TESTING

One of our main goals is to study the differences, similarities and interdependencies between the selection processes of sources and channels. Many of the included parameters contain self-developed items, which are new in this context. In this situation the adoption of an exploratory approach appears preferable and we therefore started the measurement model building process with EFA analyses to explore our data. When we would have directly started with CFA, we probably would have been got bogged down in extensive model modifications to find a well-fitting measurement model (Browne, 2001).

A more recent development is the use of an EFA measurement model in structural equation modeling. This is done by using exploratory structural equation modeling (ESEM), which Asparouhov and Muthén have developed in Mplus (2009). They argue that ESEM is more appropriate to model complex data (i.e., significant cross-loadings) than CFA with conventional SEM. Similar to CFA, it produces measures of model fit and gives access to all usual SEM parameters. All this implies that a logical next step in our analysis would be to continue with ESEM to build our structural model (Morin, Marsh, & Nagengast, 2013).

Nevertheless, due to the large number of parameters and latent variables that are involved in the analyses we prefer to build a simple (i.e., parsimonious) model. While in ESEM all indicator loadings on all factors are estimated by default —and is therefore appropriate for complex model building— CFA with conventional SEM is more appropriate for models with a simple structure (i.e., each indicator loads on one pre-determined factor) (Asparouhov & Muthén, 2009). So, our desire to build a simple model implies that we need a CFA framework to move on with conventional SEM. Morin et al. (2013) argue that it has been a common approach "to use exploratory EFA to 'discover' an appropriate factor structure and then incorporate this post hoc model into a CFA framework" (p.400). Despite their notion that such an approach may offend purists since it blurs the distinction between confirmatory and exploratory factor analysis, they do not automatically reject the appropriateness of this approach so long as interpretations are carefully made and with appropriate caution.

To decide whether or not it is appropriate to move with conventional SEM (i.e., will the model fit in a CFA framework be acceptable), we tested the robustness of the data. This means that —for each of our final factor solutions: source choice, channel choice, and *perceived source characteristics* — a small part of the measurement model is tested in an EFA setting as well as in a CFA setting. For each model we selected two factors that may be problematic in a CFA setting, for instance, because these factors contain indicators

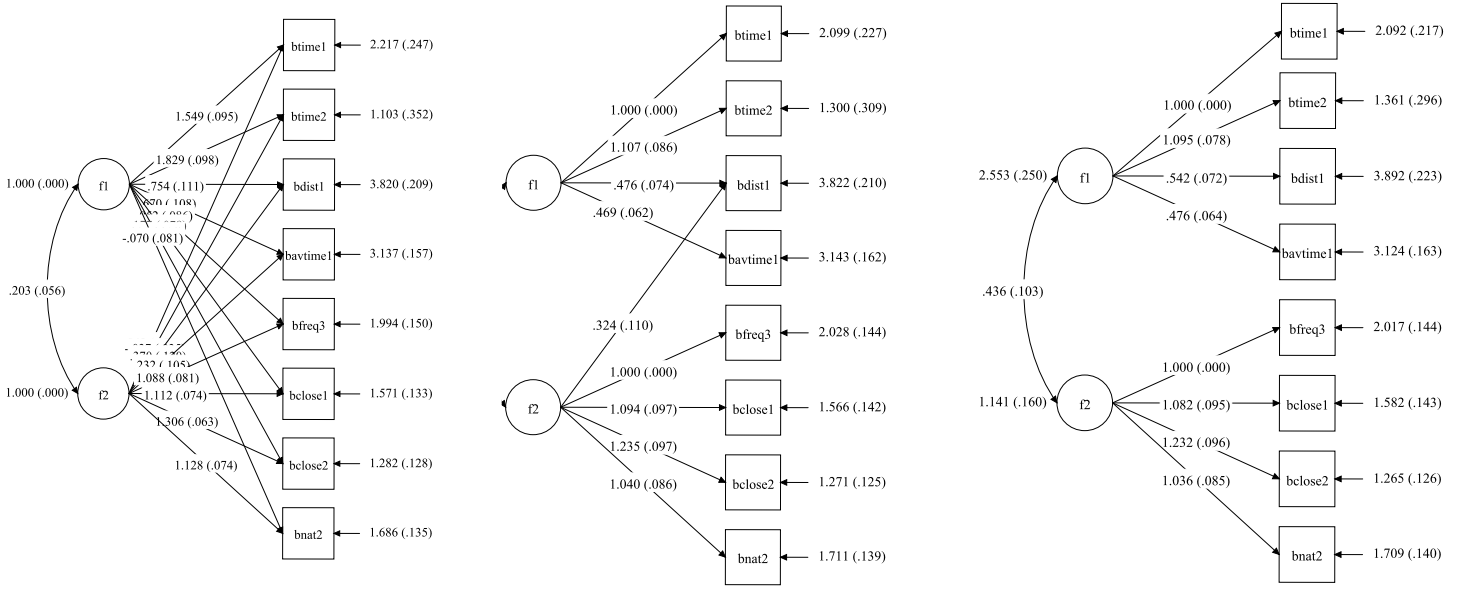

Figure 12.1 *From left to right: the EFA model, the intermediate model, and the CFA model of a small part of source choice*

with some cross-loadings. In the EFA all items are related to both factors. In the CFA the relationships between the items and its latent variable are predefined. Also an intermediate model is tested which only includes the observed significant relations in the EFA. All this is done for a small part of the source choice model, as well as the channel choice model and the source-specific perceived characteristics. The three small models for source choice are depicted as an example in figure 12.1, F1 refers to *situational factors* and F2 to *relationship characteristics*.

In what case is the data considered as robust? In other words, when do we choose for the CFA approach? Usually, as explained in the beginning of this chapter, the model with the lowest AIC and BIC is chosen. However, besides these values we decided to rely on the other model fit indices as well. Reason for this is the simplicity we prefer for further modeling. So, as long as the change in the AIC and BIC values—when comparing the EFA, the intermediate and CFA model—is relatively small and the model fit indices show an acceptable to good fit in the CFA setting, we will choose the CFA setting for further modeling.

Table 12.8 presents the results of all robustness tests. With respect to source choice the items for *situational factors* and *relationship characteristics* were included for the robustness test. Reason for inclusion of these items can be found in the significant loading of item 12 on both factors. As we can see in table 12.8 the value of RMSEA is almost consistent across the three models. The RMSEA is .052 for both the EFA and CFA models; only the intermediate model provides a slightly better value. A similar pattern was found for the value of TLI. Although the values of CFI and SRMR have decreased from EFA to the CFA model, they still indicate a good to acceptable model fit. The lowest AIC value belongs to the EFA model. In contrast, the BIC points to the intermediate model. However, since the relative change in these values is small and the rest of the model indices show an acceptable to good model fit, it can be concluded that the data is robust enough to continue with a CFA approach. Thus, conventional SEM is suitable for the source choice model.

For channel choice the items related to *social influence* and *relationship characteristics* were involved in the robustness test for channel choice since item 13 loads on both factors. The AIC is highest in the CFA approach, however, the BIC is lowest in the CFA approach and shows an equal value to the EFA approach. The EFA shows a TLI greater than 1, which is problematic. The intermediate model, which contains the correlation of item number 13 for both factors, shows on average the best fit. For this it is possible to choose the intermediate model, since both factors are associated with perceptions about others in the environment, which makes them conceptually difficult to separate. However, the original final EFA factor solution presented in table 12.4, and discussed in the previous section,

Table 12.8 Model fit indices for EFA, Intermediate & CFA model

	EFA model	Intermediate model	CFA model
Source Choice			
RMSEA	.052 (CI: .039–.067)	.049 (CI: .038–.062)	.052 (CI: .041–.064)
CFI	.953	.943	.932
TLI	.900	.911	.900
SRMR	.035	.046	.054
AIC	36582	36605	36626
BIC	36740	36738	36754
Channel Choice			
RMSEA	.000 (CI: .000–.021)	.020 (CI: .000–.044)	.058 (CI: .040–.076)
CFI	1.000	.994	.943
TLI	1.019	.987	.893
SRMR	.006	.023	.041
AIC	24577	24593	24657
BIC	24694	24695	24694
Source characteristics			
RMSEA	.076 (CI: .034–.129)	.063 (CI: .036–.093)	.121 (CI: .098–.146)
CFI	.994	.988	.940
TLI	.941	.960	.849
SRMR	.004	.009	.057
AIC	15813	15846	16010
BIC	15190	15933	16092

* CI: Confidence Interval for RMSEA value

uncovers that the other items have no cross loadings at all. For now, we have decided to choose the CFA approach, since the model fit indices indicate that this model is acceptable as well. Only the TLI is just below the threshold of .900, but is very close to that .893. Although we have to add the comment that these two constructs need further attention and development in future research (see for further elaboration chapter 14), also for the channel choice part of the model a CFA approach is chosen.

Concerning *perceived source characteristics* two factors; *expertise* and *service skills* emerged from the data across all sources, as explained in the previous section. The item *involvement* shows cross loadings for three out of five sources, but is worst for *associations* as a source. Therefore, it was decided to test this part on its robustness. Except for the value of CFI, it is obvious that the model fit decreases dramatically when the CFA approach is tested. Especially the BIC value has deteriorated in the CFA setting compared to the EFA setting. Thus, the EFA model fits best to the data according to CFI, TLI, and SRMR and acceptable according to the RMSEA fit statistic. For these reasons we decided to retain the EFA approach and move on with ESEM. However, this result does underline the importance of further development of these items in future research. Based on the robustness tests executed in this section we will incorporate a CFA framework in order to

move on with conventional SEM for the source choice model as well as the channel choice model. For the model that focuses on the perceived source characteristics we retain the EFA framework and move on with ESEM.

FINALIZING THE MEASUREMENT MODEL

The measurement model so far consists of two confirmatory models (source and channel choice) and one exploratory model (perceived source characteristics). The next step is to finalize the measurement model. For keeping overview during the final stage of the development of the measurement model, we have split the model into a source and channel choice model and a model for perceived source characteristics. We reran the source-channel choice measurement model in the CFA setting. All latent variables were estimated independent from each other, thus without extra predefined correlations between various items. Concerning the second model, various correlations between items in the source choice part and the channel choice part were added. These correlations refer to the items of which the appearance is similar. For instance, 'Experiences with sources give me a grip when I need to make new choices.' and 'Prior experiences with channels give me a grip when I need to make new choices.' The first item is related to the selection of a source and how prior experiences affect this choice; the second item is similar but related to the selection of a channel. It is plausible that these correlate to each other. Ten correlations between such items were predefined in the second model[1].

Table 12.9 shows the model fit indices of both models. Although more parameters are estimated in the second model (182 versus 172) the model fit increases for al indices. The TLI now shows a value that reflects an acceptable model fit. A closer look at the output of the second analysis tells us that six out of the ten predefined correlations are found to be significant[2]. To improve the model fit even further we could have decided to remove these four correlations, however, this hinders replication. Therefore, we consider the second model as our final measurement model with respect to source and channel choice.

Table 12.9 Finalizing the source-channel choice measurement model

	First model	Second model
RMSEA	.031 (CI: .029–.034)	.029 (CI: .027–.032)
CFI	.901	.915
TLI	.886	.900
SRMR	.052	.050
AIC	153440	153212
BIC	154302	154125

[1](Source number of item – Channel number of item):
SERV2–CERV2, SERV3–CERV3, SCOMPL1–CCOMPL1, SSPEC1–CSPEC1, SCONS1–CCONS2, SAVTIME1–CAV-TIME1, STIME1–CTIME1, STIME2–CTIME2, SSOCIN3–CSOCIN1, and SSOCIN4–CSOCIN3.
[2]The four that are not significant are SERV2–CERV2, SERV3–CERV3, SSPEC1–CSPEC1, and STIME2–CTIME2.

Concerning the *perceived source characteristics*, we reran the measurement model once more in the EFA setting. The model fit values for this first model and the following models are represented in table 12.10. Although the first model already fitted the data well, there was no specification incorporated for the fact that the same items were used for five different types of sources (using the semantic differential format). We added therefore, in the second analysis, the Multitrait−Multimethod (MTMM) to position the items that are similar. For instance, the item *Expertise* was presented to the participants for five different sources (e.g., government, advisor, friend/family). The MTMM method brings the results together for such items. As can be seen in table 12.10 the second model fits the data better than the first model. However, a negative residual variance was observed – and thus an error – for the item *expertise* related to the source *associations*. Since the negative residual variance was very close to zero ($\sigma^2 = -.010$) we decided to constrain this residual variance to be greater than zero. We ran the model for the third time and now without errors. The fit of the third and final measurement model for perceived source characteristics should be considered to be good.

Table 12.10 Finalizing the perceived source characteristics measurement model

	First model	Second model	Third model
RMSEA	.022 (CI: .017–.026)	.015 (CI: .008–.020)	.014 (CI: .007–.020)
CFI	.988	.995	.996
TLI	.984	.992	.993
SRMR	.021	.020	.020
AIC	78020	77837	77837
BIC	78710	78654	78654

For both final measurement models the factor scores were obtained and used for modeling the structural model. Before we move on to the section (§12.2) that covers the development of the structural model, we first present the correlations between the different latent variables included in our model.

CORRELATIONS BETWEEN THE LATENT VARIABLES

A Pearson correlation test in SPSS was performed to examine all possible correlations between the latent variables of the model. Table 12.11 provides the correlations among these variables. Based on a review of Taylor (1990) we can interpret a correlation coefficient below or equal to .35 as low or weak, .36 to .67 as moderate, greater than .67 as strong or high correlations. Coefficients greater than .90 are considered as very high.

Table 12.11 Correlations among latent variables involving source choice, channel choice, and

		Source Choice						Channel Choice		
		Prior Experiences	Task Characteristics	Situational Factors	Social Influence	Relationship Charact.	Trust	Task Characteristics	Situational Factors	Social Influence
Source Choice	Prior Experiences									
	Task Characteristics	.229***								
	Situational Factors	.311***	.444***							
	Social Influence	.252***	.677***	.478***						
	Relationship Charact.	.179***	.287***	.326***	.517***					
	Trust	.494***	.324***	.066*	.251***	.210***				
Channel Choice	Task Characteristics	.227***	.809***	.446***	.580***	.240***	.204***			
	Situational Factors	.254***	.619***	.731***	.616***	.306***	.209***	.703***		
	Social Influence	.252***	.549***	.539***	.913***	.573***	.134***	.610***	.631***	
	Relationship Charact.	.439***	.603***	.402***	.705***	.657***	.408***	.649***	.638***	.760***
	Prior Experiences	.532***	.394***	.240***	.468***	.240***	.505***	.537***	.415***	.511***
	Expertise Government	.076**	.041	–.016	.031	–.055	.096**	.043	.026	.022
Perceived Source Characteristics	Service Skills Gov.	.001	.006	–.012	.049	–.087**	–.010	.020	–.010	.051
	Expertise Ext.Contact	.068*	.050	.035	.073*	.086**	.066*	.067*	.031	. 088**
	Service Skills Ext. Contact	.086**	.045	.014	.049	.056	.103***	.019	.003	.037
	Expertise Friends/Fam.	–.043	.048	.132***	.132***	.092**	–.084**	.049	.093**	.155***
	Service Skills Friends/Fam.	.082**	.071*	–.002	.072*	–.031	.126***	.052	.038	.032
	Expertise Associations	.052	.094**	.084**	.130***	.073*	.068*	.062*	.097**	.121***
	Service Skills Associations	.000	.059*	.037	.073*	–.028	.017	.025	.027	.060*
	Expertise Advisor	.143***	–.038	–.099**	–.042	.040	.196***	–.036	–.051	–.044
	Service Skills Advisor	.130***	–.069*	–.092**	–.078**	.040	.179***	–.077**	–.080**	–.065*

Note. *** Correlation is significant at the .001 level (2–tailed). ** Correlation is significant at the .01 level (2–tailed). * Correlation is significant at the .05 level (2–tailed).

perceived source characteristics

		Perceived Source Characteristics								
Relationship Charact.	Prior Experiences	Expertise Government	Service Skills Government	Expertise External Contact	Service Skills Ext. Contact	Expertise Family/ Friends	Service Skills Fam./ Friends	Expertise Associations	Service Skills Associa.	Expertise Advisor
.615***										
.036	.084**									
–.021	.038	.546***								
.092**	.088**	.100***	.091**							
.069*	.090**	.126***	.107***	.654***						
.077**	–.010	.034	.104***	.168***	.099**					
.067*	.144***	.118***	.041	.137***	.263***	.247***				
.077**	.064*	.286***	.190***	.095**	.107***	.141***	.097**			
–.006	.028	.206***	.292***	.110***	.139***	.084**	.103***	.627***		
.064*	.083**	.258***	.126***	.220***	.208***	.031	.122***	.183***	.128***	
.032	.068*	.107***	.053	.189***	.194***	.007	.150***	.072*	.090**	.689***

First of all, it is obvious that the construct task *characteristics* for source choice and *task characteristics* for channel choice show very high correlations. This is not surprisingly since these constructs cover similar items. In further analyses, these correlations will be set at zero because it is undesirable that these constructs correlate.

Within the source choice model the highest correlation is found for the interrelation between *task characteristics* and *social influence* (r = .677). Other moderate correlations relate to *trust* and *prior experiences* (r = .494), *social influence* and *situational factors* (r = .478), *situational factors* and *task characteristics* (r = .444) and *social influence* and *relationship characteristics* (r = .517). All other possible correlations are significant but (very) low. For the channel choice model higher correlations can be identified among the constructs, compared to the source choice model. The correlations between *relationship characteristics* and *social influence* (r = .760) and *situational factors* and *task characteristics* (r = .703) can be considered as high. All other possible correlations can de qualified as moderate correlations. Low or insignificant correlations do not exist according to the results.

Concerning the *perceived source characteristics*, we conclude that except for the source *family/friends* the constructs *expertise* and *service skills* are moderately correlated to each other. This is not surprisingly since the underlying items for both constructs were originally formulated to measure a single construct. Moreover, the robustness test of the former section indicated that a strict separation of both constructs (i.e., using a CFA−approach) is inappropriate, which indicates that the items are related to both constructs.

An explanation for the low correlation (r = .247) between *expertise* and *service skills* for *family/friends* could be that, although they are often perceived as approachable etc., knowledge about such a complex topic as fiscal affairs rarely exists in the network of friends and family. This makes the combination of being an expert and being service oriented more unrealistic compared to the other source that are all to some extent in their work related to the topic at hand. For the remainder blocks in table 12.11,—*perceived source characteristics* with *source choice* and *perceived source characteristics* with *channel choice*—none of the correlations are above the .196, which is considered as very low.

12.2 MODEL TESTING

Based on the measurement model this part of the dissertation presents a (structural) model and reports the various tests of the hypotheses. The conceptual model presented at the end of part lll is divided in two parts. A part that focuses on the model for source choice, and a part that examines channel choice. After this, the models are brought together as

hypotheses regarding the interdependency between source and channel choice are tested. The section concludes with an overview of the supported and rejected hypotheses.

12.2.1 TESTING THE CONCEPTUAL RESEARCH MODELS

SOURCE CHOICE

For each source (i.e., NTCA, advisor, and personal sources) the intended structural model was tested in Mplus (see figure 12.2). Due to the nature of the dependent variables, which were ordered categorical, the WLSMV estimator was used (Muthén & Muthén, 2012). Despite the established acceptable fit of the measurement model, this resulted in a poor model fit for all sources (see table 12.12).

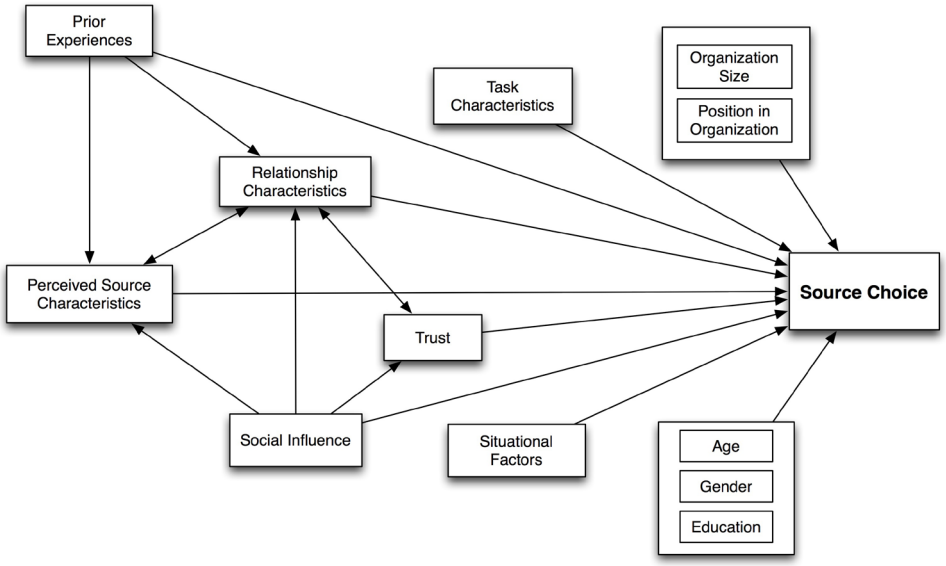

Figure 12.2 *Conceptual Research Model for Source Choice*

This observed poor model fit might be due to a low data quality, or simply the lack of fit between the data and our theory. However, there are more possible explanations. Kenny and McCoach (2009) studied the effect of the number of variables on the model fit indices. They concluded, "the CFI and the TLI do not function well with correctly specified models that include a large number of variables" (p.349). That is, as more variables are added in a model, both the CFI and the TLI tend to demonstrate worse fit. An opposite pattern was found for the RMSEA value, which tends to improve as model complexity increases. However, it remains very difficult to decide whether or not the model is correctly specified. Kenny and McCoach (2003) argue that it is important to examine the three indices simultaneously and "if the TLI and CFI seem slightly lower than hoped, but the RMSEA

seems a bit better, then there may be no real cause for concern" (p.349). However, as both RMSEA and CFI and TLI present low values, this is a sign for a truly poor fitting model (Kenny & McCoach, 2003). The effect of the number of variables relates to other factors such as degree and type of misspecification, sample size, and the estimation method, as noted by Kenny and McCoach (2003) as well.

Table 12.12 Model fit indices per source for intended conceptual model of source choice

	Advisor	NTCA	Personal Source
RMSEA	.073 (CI: .069–.076)	073 (CI: .069–.076)	.073 (CI: .069–.076)
CFI	.608	.605	.598
TLI	468	.465	.454

According to the RMSEA measure, the results in table 12.12 suggest an acceptable model fit (SRMR is not reported since it is not available for the WLSMV estimator in Mplus). This is not surprising, since this measure corrects for model complexity (Hu & Bentler, 1999). In contrast, the CFI and especially the TLI show values far below the threshold of .90 and are not just 'slightly lower than hoped'. This indicates that there are more conceptual problems that lead to these low values of CFI and TLI. These problems could be related to the construct of perceived source characteristics. This construct was divided into ten new factors as a result of the factor analysis, explained in the previous section. Another reason can be found into the notion that the model has an exploratory character consisting of many new variables. Further, it was observed that especially the relationships between the independent variables led to a decrease in model fit. Given all these reasons, the main conclusion is that the data collected do not fit the specified model. The discussion (chapter 14) will elaborate on the theoretical implications of this finding.

CHANNEL CHOICE

The intended model for channel choice –telephone, website, e-mail, and face-to-face– fitted the data much better than the intended model for source choice. A depiction of the model can be found in figure 12.3 and table 12.13 presents the model fit indices for the intended model, for each channel.

Table 12.13 Model fit indices per channel for intended conceptual model of channel choice

	Telephone	Website	E-mail	Face-to-face
RMSEA	.041 (CI: .036–.045)	.041 (CI: .036–.045)	.041 (CI: .036–.045)	.041 (CI: .036–.045)
CFI	.881	.882	.880	.879
TLI	.826	.827	.824	.823

The values of CFI (varying from .879 to .882) and TLI (varying from .823 to .827) could

be interpreted as slightly lower than needed, however the RMSEA value reflects a good fit (Kenny & McCoach, 2003). Here it is again possible that this discrepancy is due to the large number of variables included in the model (Kenny & McCoach, 2003). However, Kenny and McCoach (2003) also argue that other types of specification errors could be important. Since it is rather difficult to determine what the exact underlying reasons are, we conclude that the channel choice model does not appropriately fit the data as well.

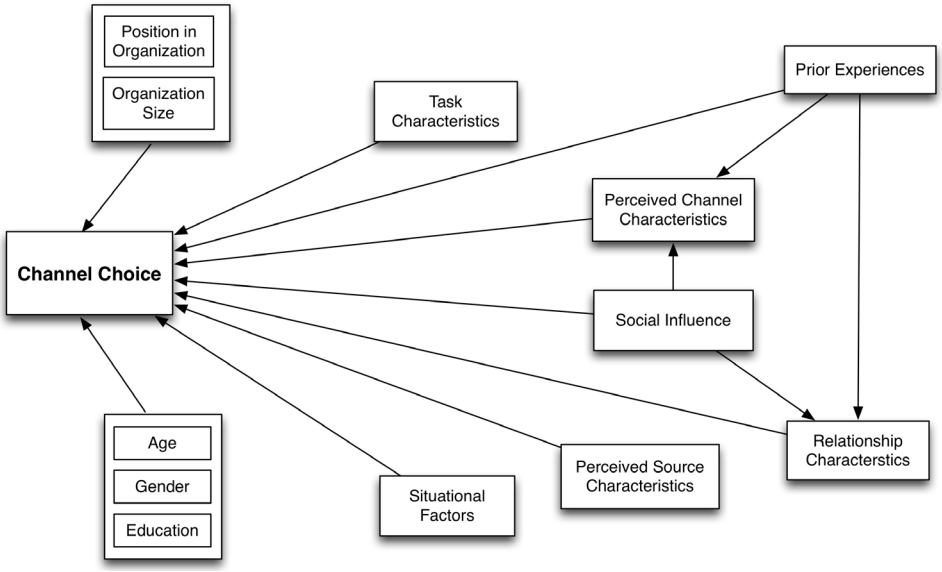

Figure 12.3 *Conceptual Research Model for Channel Choice*

POSSIBLE STRATEGIES TO MOVE ON WITH OUR ANALYSIS

There are three possible strategies to tackle the mentioned issues with both models of source and channel choice. As a first strategy it would be possible to remove step by step –running the model over and over again– the relationship with the lowest regression coefficient. First, only insignificant relationships would be removed, later significant relationships with the lowest coefficients, until a good model fit is achieved. This strategy brings the risk that in the end only one factor is left over to realize a good model fit. Another disadvantage is that this strategy is very time consuming. For each source this whole process must be completed by hand since it is impossible to do this automatically in Mplus (Muthén & Muthén, 2012).

A second strategy is to run logistic regression analyses in SPSS that use automated variable selection procedures (e.g., backward elimination, forward selection, stepwise regression)

that scan the entered variables to select a subset for the model (Agresti & Finlay, 2009). An advantage of this approach is that it retains only the best predictors and removes weak predictors immediately. It can be considered as a rather exploratory method, since only the core predictors emerge from the results. However, a disadvantage is that only direct effects on source choice are allowed to be included. As a consequence, the proposed relationships between various variables are not allowed in this analysis. This implies that we are unable to test the initial formulated hypotheses H_5, H_{8a}, H_{10}, H_{12}, and H_{13}, since they refer to indirect effects and relationships between the various independent variables. Another major, and maybe most important, disadvantage is that the method cannot be considered as a substitute for careful thought in developing models (Agresti & Finlay, 2009).

A third strategy is to use a theory-driven approach and to test only the core of the model – the effects of source and channel characteristics and prior experiences on source and channel choice. However, as mentioned in chapter 9, both perceived source and channel characteristics were measured using a semantic differential scale. Whereas insight into source characteristics was gained for each source, insight into channel characteristics was only gained for the first chosen channel. This has consequences for structural equation modeling, since these variables hinder the use of this method. Further, the intended models, presented in figure 12.2 and 12.3, are created by combining pieces of various theories rooted in different research disciplines (part 2) with findings derived from the qualitative study (part 3). This indicates a rather exploratory and data−driven approach, since new variables are added from different research areas and the model as such has never been tested in this composition.

Given the poor fit of the model for source choice and the notion that our research is exploratory rather than confirmatory, we decided to choose the second strategy (i.e., running logistic regressions). Although the intended model for channel choice fitted the data much better than the source choice model, a similar method as for source choice was preferred. Therefore, this analysis was continued with a stepwise logistic regression in SPSS as well. We believe that it is more valuable to provide insight into the most important predictors for source and channel choice, instead of presenting a model that does not fit the data as it should and from which we do not know what causes this poor model fit. Further, it must be kept in mind that one of the goals of this dissertation is to examine the extent to which source and channel choice are influenced by the same underlying factors. We therefore abandon the idea to develop a structural equation model that explains source and channel choices. Despite the temptation to also examine the relationships between the

variables; insights into the direct effects will deliver a major contribution to the current knowledge. The section that follows provides insight into the direct effects on source and channel choice.

12.2.2 STUDYING THE DIRECT EFFECTS ON SOURCE CHOICE

Several logistic regression analyses were executed to determine which variables directly influence source and channel choice. The forward selection method (likelihood ratio) was chosen to determine the best predictors (Garson, 2011). At the beginning of the analysis all variables were entered by the researcher. These variables are scanned and only the best predictors are selected (Agresti & Finlay, 2009). Similar to the structural models tested in Mplus we executed one analysis for each source (NTCA, advisor, personal sources) and for each channel (telephone, website, e-mail, face-to-face). That is, the dependent variable is dichotomous and reflects whether or not a certain source or channel is chosen. The independent variables are mixed continuous (*task characteristics, relationship characteristics, situational factors, prior experiences, trust, social influence, perceived source characteristics,* and *age*), ordinal (*organization size, education*), and nominal (*gender, position* of *the information seeker in the organization*). For the ordinal and nominal variables the last categories were used as reference categories (10 to 50 employees, higher educated and experts, respectively). This section presents the results of the executed stepwise regression analyses. It starts with the three models for source choice, followed by the models for channel choice.

THE CHOICE FOR AN ADVISOR

Table 12.14 reflects the results of the analysis that provides insight in the predictors for the probability that an advisor is chosen. The residual chi-square statistic is 170.54 and significant at a $p<.001$ level. This suggests that the addition of one or more of the listed variables significantly affect the predictive power of the model (Field, 2009). Eight steps were needed for realizing the final model. At each step the −2 Log Likelihood decreased in value (from 1602.30 to 1498.27), which suggests that adding a certain variable to the model leads to an improved prediction of source choice. The Cox and Snell R-square (.126) and the Nagelkerke R-square (.168) provide both an indication of the proportion of variance explained by the regression model. These values can vary from 0 to 1. The larger these values, the better the set of entered variables is able to collectively predict the selection of the advisor (Agresti & Finlay, 2009). The Hosmer and Lemeshow test shows an insignificant result ($\chi^2(8) = 4.183$, $p=.840$). It can be concluded that the model adequately fits the data, which means that interpretation of the results can be continued.

Table 12.14 Results of stepwise logistic regression for Advisor as source choice

		95% CI for Exp(B)		
	B(SE)	Lower	Odds Ratio	Upper
Task Characteristics	–.351 (.07)***	.61	.70	.81
Social Influence	.253 (.11)*	1.03	1.29	1.60
Relationship Characteristics	.195 (.08)*	1.04	1.22	1.42
Trust	.213 (.08)**	1.07	1.24	1.43
Service Skills Government	–.232 (.07)***	. 70	.79	.90
Service Skills Advisor	.468 (.08)***	1.37	1.60	1.86
Position (self–employed)	.391 (.22)	.96	1.48	2.27
Position (managing director)	.855 (.19)***	1.63	2.35	3.38
Organization (1 employee)	.165 (.24)	.74	1.18	1.89
Organization (2–5 employees)	.360 (.20)	.96	1.43	2.14
Organization (6–10 employees)	.529 (.20)**	1.15	1.70	2.50
Constant	–.931 (.19)***	–	.39	–

Note. * p<.05, ** p<.01, *** p<.001

The table above shows that only seven of the original variables, that were supposed to be of influence, were found to be reliable predictors for the choice of an advisor as the first consulted information source. There is a negative effect for *task characteristics* (b=−.351, p<.001). As the influence of *task characteristics* increases it becomes less likely that the advisor is chosen in first instance. In contrast, there is a positive effect for *social influence* (b=.253, p<.05). When social influence plays an increasing role it becomes more likely that the advisor is chosen. For instance, when opinions and experiences of others in the environment of the information seeker become of more importance to the choice of the seeker, it is more likely that the advisor will be consulted. The same pattern is observed with respect to *relationship characteristics* (b=.195, p<.05) and trust (b=.213, p<.01). Further, an increase in the *perceived service skills for the government*, leads to a decrease in the probability that the advisor is consulted (b=−.232, p<.001). In line with this effect is was observed that an increase in the *perceived service skills of the advisor* leads to an increase in the probability that the advisor is chosen (b=.468, p<.001).

Another predictor is the *position* of the information seeker in the organization. The results show that it becomes more likely that the advisor will be consulted as a first source when the information seeker is a managing director, compared to an expert (i.e., financial employee). No differences were observed between experts and people who are self-employed. Organizations that consist of 1 or 2 to 5 employees do not differ from organizations with 10 to 50 employees. However, it is observed that the choice for the advisor becomes more likely when the information seeker belongs to an organization with 6 to 10 employees, compared to organization with 10 to 50 employees.

THE CHOICE FOR THE NTCA

The results of the stepwise logistic regression analysis for the NTCA are shown in table 12.15. The value of the residual chi-square is 140.10 and significant at the $p<.001$ level. The log likelihood value decreases from 1596.74 in step one to 1506.56 in the eight and final step. Further, the Cox and Snell R-square is .103 and the Nagelkerke R-square is .139, which is a bit less than the previous model that focused on the advisor. The Hosmer and Lemeshow test is insignificant, since p=.489 for $\chi^2(8)=7.454$. All these indices reflect that the model fits well to the data.

Table 12.15 Results of stepwise logistic regression for NTCA as source choice

		95% CI for Exp(B)		
	B(SE)	Lower	Odds Ratio	Upper
Task Characteristics	.244 (.06)***	1.15	1.28	1.42
Relationship Characteristics	– .272 (.07)***	.66	.76	.88
Trust	– .219 (.07)**	.69	.80	.93
Service Skills Government	.211 (.07)**	1.09	1.24	1.40
Service Skills Advisor	– .272 (.07)***	.66	.76	.88
Position (self–employed)	– .476 (.18)**	.44	.62	.88
Position (managing director)	– .888 (.18)***	.29	.41	.59
Age	– .150 (.06)**	.77	.86	.96
Education (low)	– .316 (.21)	.48	.73	1.10
Education (middle)	– .343 (.14)*	.54	.71	.93
Constant	1.104 (.30)***		3.02	

Note. * p<.05, ** p<.01, *** p<.001

Again, only seven factors were found to be a significant predictor for whether or not the NTCA is chosen as a first source. Although these factors are not all similar to the ones found for the advisor. Whereas the effect of *task characteristics* for the advisor was negative, the effect on the choice for the NTCA is observed to be positive ($b=.244$, $p<.001$). When the influence of *task characteristics* increases it becomes more likely that the NTCA is chosen as a first source to consult (instead of another source). Opposites effects were found with respect to the influence of *relationship characteristics* ($b=-.272$, $p<.001$) and trust ($b=-.219$, $p<.01$). As the role of both factors increases it becomes less likely that the NTCA is consulted. Further, when *service skills* are increasingly attributed to the government, it becomes more likely that the NTCA is chosen ($b=.211$, $p<.01$). In contrast, when perceptions of *service skills* for the advisor increase, it becomes less likely that the NTCA is chosen ($b=-.272$, $p<.001$). It was also observed that an increase in *age* leads to a decrease in the probability that the NTCA is consulted ($b=-.150$, $p<.01$). Compared to higher educated people it is observed that people who have a medium level education will choose the NTCA less often ($b=-.343$, $p<.05$). Finally, differences are observed between

self−employed and experts (b=−.476, p<.01), and between managing directors and experts (b=−.888, p<.001). For both groups it is observed that it becomes less likely that the NTCA is consulted when the information seeker is a managing director or a self-employed person, compared to an expert.

THE CHOICE FOR PERSONAL SOURCES

Personal sources were much less selected as a first source (only in 48 situations of the 1218 in total). This leads to the conclusion that they are lesser important in the first stages of the information seeking process and increase in importance as first choices fail. For this reason, the analysis was done with the 'second choice' as dependent variable. A stepwise logistic regression analysis was executed concerning personal sources that are chosen as the second source. The results are shown in table 12.16. The residual chi-square value is 71.779 and significant at the p<.001 level. The −2 log likelihood value decreased from 584.26 in step one to 537.01 in the seventh and final step. The Hosmer and Lemeshow test was insignificant ($\chi^2(8)$=4.894, p=.769). From this it can be concluded that the models fits the data. The Cox and Snell R-square shows a value of .106 and the Nagelkerke R-square is .163.

Table 12.16 Results of stepwise logistic regression for Personal Sources as (2nd) source choice

		95% CI for Exp(B)		
	B(SE)	Lower	Odds Ratio	Upper
Relationship Characteristics	.488 (.13)***	1.22	1.57	2.00
Service Skills Government	– .227 (.11)*	.64	.80	.99
Service Skills External Contact	.312 (.13)*	1.07	1.37	1.75
Expertise Family/Friends	.342 (.11)**	1.13	1.41	1.75
Service Skills Family/Friends	.305 (.15)*	1.01	1.36	1.83
Education (low)	.598 (.37)	.89	1.82	3.72
Education (middle)	– .382 (.26)	.41	.68	1.13
Constant	–1.434 (.15)***		.24	

Note. * p<.05, ** p<.01, *** p<.001

Contrasting to the findings for the advisor and the NTCA, *task characteristics* and trust are no significant predictors with regard to the choice for personal sources. Similar to the choice for the advisor, a positive effect was found for the influence of *relationship characteristics* on the choice for personal sources (b=.488, p<.001). Further, an increase in *perceived service skills of the government*, leads to a decrease in the probability that a personal source is consulted (b=−.227, p<.05). In contrast, an increase in the *perceived service skills* of both *family/friends* (b=.305, p<.05) and *external contacts* (b=.312, p<.05) means that it becomes more likely that a personal source is chosen. A same pattern is observed for *perceived expertise of friends/family* (b=.342, p<.01).

12.2.3 STUDYING THE DIRECT EFFECTS ON CHANNEL CHOICE

Similar to the analysis of direct effects on source choice, discussed in the previous section, several logistic regression analyses were executed to determine which variables influence channel choice. For each channel (telephone, website, e-mail, face-to-face) a logistic regression was executed. This section discusses the findings. We start with the model for the channel telephone, followed by the website and the other channels.

THE CHOICE FOR THE TELEPHONE

The results in table 12.17 show the predictors for whether or not the telephone will be chosen as a first channel to consult the first selected source. The residual chi-square value is significant at the p<.001 level, its value is 100.866. The −2 log likelihood value decreased from 1637.20 in step one to 1585.10 in the sixth and final step. The Hosmer and Lemeshow test was insignificant ($\chi^2(8)=1.662$, $p=.990$). From this it can be concluded that the models fits the data. The Cox and Snell R-square shows a value of .062 and the Nagelkerke R-square is .083, which is very low.

Table 12.17 Results of stepwise logistic regression for Telephone as channel choice

		95% CI for Exp(B)		
	B(SE)	Lower	Odds Ratio	Upper
Social Influence	.173 (.07)**	1.04	1.19	1.35
Prior Experiences	– .319 (.07)***	.63	.73	.84
Expertise Family/Friends	– .122 (.06)*	.79	.89	1.00
Service Skills Advisor	.281 (.07)***	1.15	1.32	1.52
Education (low)	.776 (.20)***	1.47	2.17	3.22
Education (middle)	– .287 (.13)*	1.03	1.33	1.72
Position (self–employed)	.082 (.17)	.78	1.09	1.52
Position (managing director)	.554 (.17)**	1.24	1.74	2.44
Constant	– .465 (.16)**		.63	

Note. * p<.05, ** p<.01, *** p<.001

The first predictor that is significant for the choice of the telephone is social influence. As perceived social influence increases, it becomes more likely that the telephone is chosen ($b=.173$, $p<.01$). This means that when opinions and experiences of others, or communication norms in the organization become more important, the telephone is selected more often. In contrast, when prior experiences become more important, it becomes less likely that the telephone is selected ($b=-.319$, $p<.001$). When expertise is increasingly perceived for family and friends increases, it becomes less likely that the telephone is chosen ($b=-.122$, $p<.05$). Further, when service skills are increasingly perceived regarding the advisor, the probability increases that the telephone is selected ($b=.281$, $p<.001$). Compared to higher educated people it is observed that people who are low educated will choose the telephone

more often (b=.776, p<.001). The opposite effect is found for higher educated versus middle educated people. It is observed that people who are middle educated will choose the telephone less often (b=−.287, p<.05). There is a final difference observed between managing directors and experts. Compared to experts, being a managing director means that the probability increases that the telephone is chosen (b=.554, p<.01). No differences are observed between self−employed and experts.

THE CHOICE FOR THE WEBSITE

The results of the stepwise logistic regression analysis for the channel website are shown in table 12.18. The value of the residual chi-square is 121.21 and significant at the p<.001 level. The −2 log likelihood value decreases from 1316.05 in step one to 1241.12 in the eight and final step. The Hosmer and Lemeshow test is insignificant, since p=.142 for χ^2 (8)=12.223. All these indices reflect that the model fits well to the data. Further, the Cox and Snell R-square is .089 and the Nagelkerke R-square is .132, which is a bit higher than for the selection of the telephone.

Table 12.18 Results of stepwise logistic regression for Website as channel choice

		95% CI for Exp(B)		
	B(SE)	Lower	Odds Ratio	Upper
Task Characteristics	.328 (.07)***	1.20	1.39	1.61
Social Influence	– .188 (.10)	.68	.83	1.01
Relationship characteristics	– .262 (.12)*	.61	.77	.97
Prior Experiences	.255 (.10)*	1.06	1.29	1.57
Expertise Government	.166 (.08)*	1.01	1.18	1.37
Service Skills Advisor	– .361 (.08)***	.60	.70	.81
Age	– .162 (.06)*	.75	.85	.96
Position (self–employed)	– .558 (.18)**	.40	.57	.82
Position (managing director)	–1.183 (.20)***	.21	.31	.45
Constant	.279 (.31)		1.32	

Note. * p<.05, ** p<.01, *** p<.001

Whereas *task characteristics* play no role whether or not the telephone is chosen, they do with regard to the choice for the website. When the influence of *task characteristics* increases it becomes more likely that the website is chosen as a first channel to contact the selected source (b=.328, p<.001). Another significant predictor for the website is *relationship characteristics*. It is observed that when the influence of *relationship characteristics* increases, the probability that the website is chosen decreases (b=−.262, p<.05). Compared to the choice for the telephone, an opposite effect is found with respect to the impact of *prior experiences*. When *prior experiences* play an increasing role, it becomes more likely that the website is chosen (b=.255, p<.05).

Further, when the government is increasingly perceived as expert it becomes more likely that the website is selected (b=.166, p<.05). In contrast, when service skills are increasingly perceived for the advisor, it becomes less likely that the website is selected (b=−.361, p<.001). Also age is found to be a predictor for the choice for the website. When age increases it is less likely that the website is chosen (b=−.162, p<.05). Finally, differences are observed between self-employed and experts (b=−.558, p<.01), and between managing directors and experts (b=−1.183, p<.001). For both it is observed that it becomes less likely that the Website is chosen when the information seeker is a managing director or a self-employed person, compared to an expert.

THE CHOICE FOR FACE-TO-FACE

Similar to one of the models for source choice (personal sources) it was impossible to perform the logistic regression for face-to-face as the first selected channel. Therefore, the analysis was conducted for whether or not face-to-face is selected in second instance. The results are shown in table 12.19. The value of the residual chi-square is 48.997 and significant at the p<.01 level. The log likelihood value decreases from 673.813 in step one to 655.303 in the fifth and final step. The Hosmer and Lemeshow test is insignificant, since p=.209 for $\chi^2(7)$=9.661. All these indices reflect that the model fits well to the data. Further, the Cox and Snell R-square is .042 and the Nagelkerke R-square is .067, which is again very low.

Table 12.19 Results of stepwise logistic regression for Face-to-face as channel choice

		95% CI for Exp(B)		
	B(SE)	Lower	Odds Ratio	Upper
Education (low)	1.199 (.27)***	1.95	3.32	5.54
Education (middle)	.390 (.22)	.94	1.44	2.21
Organization size (self–employed)	1.106 (.38)**	1.45	3.02	2.28
Organization size (2–5 employees)	.827 (.38)*	1.08	2.29	4.84
Organization size (6–10 employees)	.983 (.38)*	1.27	2.67	5.63
Constant	– 2.640 (.36)***		.07	

Note. * p<.05, ** p<.01, *** p<.001

Only two predictors are found to be of influence on whether or not face-to-face is chosen as a channel. The first predictor concerns *education*. The results show that, compared to higher educated people, the probability increases that face-to-face is chosen when someone is lower educated (b=1.199, p<.001). The other predictor involves *organization size*. Differences are found between organizations with 10 to 50 employees and organizations with 6 to 10 employees (b=.983, p<.05), organizations with 2 to 5 employees (b=.827, p<.05), and self−employed(b=.1.106, p<.01).

THE CHOICE FOR E-MAIL

Table 12.20 presents the results of the analysis performed for whether or not e-mail is selected as a first channel to consult the first source. The residual chi-square value is significant at the $p<.05$ level, its value is 40.396. The −2 log likelihood value decreased from 1028.902 in step one to 1002.401 in the second and final step. The Cox and Snell R-square shows a value of .013 and the Nagelkerke R-square is .022. Further, the Hosmer and Lemeshow test was significant ($\chi^2(8)=15.886$, $p=.044$). The results of the latter test means that the model does not fit the data, therefore, further analysis with respect to the choice for e-mail is impossible.

Table 12.20 Results of stepwise logistic regression for E-mail channel choice

		95% CI for Exp(B)		
	B(SE)	Lower	Odds Ratio	Upper
Service Skills Government	– .174 (.08)**	.72	.84	.99
Education (low)	– .937 (.33)**	.21	.39	.75
Education (middle)	– .282 (.18)	.53	.75	1.07
Constant	–1.569 (.10)***		.21	

Note. * p<.05, ** p<.01, *** p<.001

12.2.4 BRINGING SOURCE AND CHANNEL CHOICE TOGETHER

So far, the models of source and channel choice and its influencing factors are separately analyzed. This section brings both models together by studying the interrelation between source and channel choice. Further, the effects of source and channel characteristics on respectively channel and source choice are analyzed as well as the relationship between source and channel characteristics. Figure 12.4 depicts the effects that will be analyzed in this section.

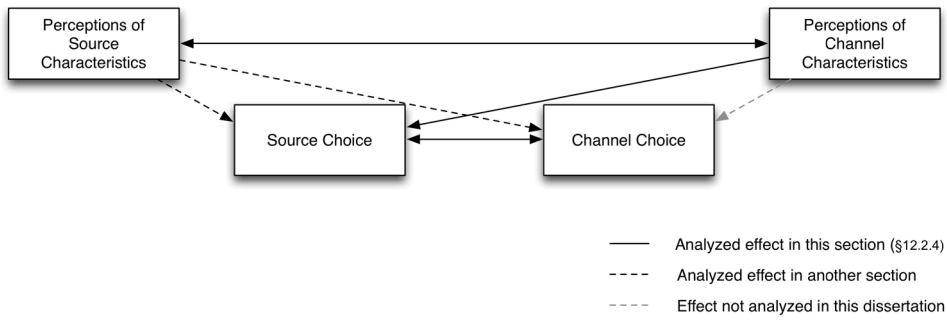

Figure 12.4 *Overview of the analyzed relationships in present section*

THE INTERRELATION BETWEEN SOURCE AND CHANNEL CHOICE

To study the interrelation between source and channel choice a chi-square test was executed in SPSS (see figure 12.5). All types of channel choices as well as source choices were included. The results show that there is a significant association between the (first) selected source and (first) chosen channel $\chi^2(18)=536.59$, $p<.001$. From this is can be concluded that there is some kind of association between source and channel choices.

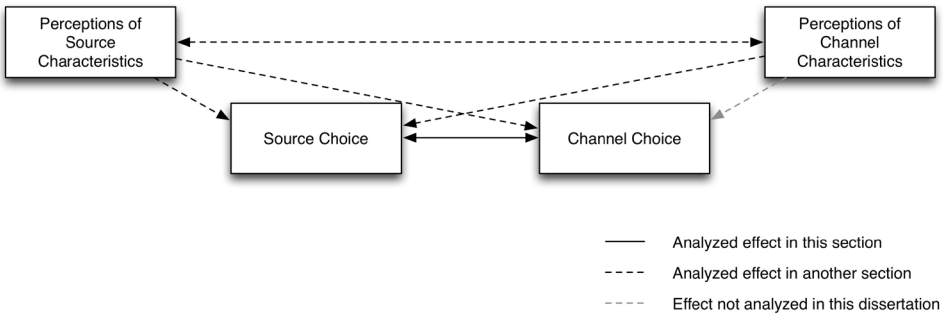

Figure 12.5 *The association between source and channel choice is analyzed*

The values of the standardized residuals are used to further interpret the results, see table 12.21 on the next page. This value is the error between the expected frequency (what the model predicts) and the observed frequency (what the data actually observed). A positive value indicates an overrepresentation and a negative value indicates an underrepresentation. If the value is greater than 1.96 or lower than −1.96 the over or underrepresentation is considered to be significant at $p<.05$ (Field, 2009). However, when inspecting many cells, some standard residuals could be large due to random variation, which leads false significant effects (Agresti & Finlay, 2009). Therefore, Agresti and Finlay (2009) argue that a value greater than $z=3$ or lower than $z=-3$ reflects a true effect.

Table 12.21 shows that there is a strong significant underrepresentation for the combinations NTCA with face-to-face ($z=-5.8$) and NTCA with e-mail ($z=-6.3$). In contrast, there is a very strong overrepresentation for the combination NTCA with the website ($z=11.6$). While the channel website in combination with the NTCA shows a very strong overrepresentation, this same channel in combination with the advisor is equally strong under represented ($z=-11.0$). Overrepresentations are found for the combinations advisor with telephone ($z=3.4$), and advisor with e-mail ($z=6.5$). With respect to personal sources, there is one combination identified that refers to a very strong overrepresentation (with face-to-face, $z=8.8$). Further, there is a strong underrepresentation for personal sources with website

(z=−3.4). Concerning other sources (e.g., unions, associations) the combination the website is overrepresented (z=3.2).

Table 12.21 Results of the Chi-square test for first Source and first Channel Choice

			Type of Channel					
			Telephone	Face-to-face	E-mail	Written	Website	SMS, Whatsapp
Type of Source	NTCA	Obs. Frequency	217.0	4.0	22.0	9.0	260.0	0.0
		Exp. Frequency	258.4	41.4	77.0	4.7	128.6	0.8
		Std. Residual	– 2.6**	– 5.8***	– 6.3***	2.0*	11.6***	–0.9
	Advisor	Obs. Frequency	354.0	65.0	149.0	1.0	14.0	1.0
		Exp. Frequency	295.2	47.3	87.9	5.3	146.9	1.0
		Std. Residual	3.4***	2.6**	6.5***	–1.9	– 11.0***	0.0
	Personal Source	Obs. Frequency	19.0	21.0	6.0	0.0	0.0	1.0
		Exp. Frequency	23.7	3.8	7.1	0.4	11.8	0.1
		Std. Residual	– 1.0	8.8***	– 0.4	–0.7	– 3.4***	3.3
	Other	Obs. Frequency	21.0	8.0	5.0	1.0	30.0	0.0
		Exp. Frequency	33.7	5.4	10.1	0.6	16.8	0.1
		Std. Residual	– 2.2*	1.1	– 1.6	0.5	3.2**	–0.3

Note. * p<.05, ** p<.01, *** p<.001

The above results focus on the first selected source-channel combination. When analyzing the second selected source-channel combination (first source with the second channel) there is a shift observed in source-channel combinations (see table 12.22). Again, the results show that there is a significant association between the (first) selected source and (second) chosen channel $\chi^2(18)=206.73$, $p<.001$.

Table 12.22 Results of the Chi-square test for first Source and second Channel Choice

			Type of Channel						
			Telephone	Face-to-face	E-mail	Written	Website	Social Media	SMS, WhatsApp
Type of Source	NTCA	Obs. Frequency	108.0	13.0	66.0	27.0	49.0	0.0	1.0
		Exp. Frequency	86.3	50.9	90.0	12.5	22.5	1.5	0.4
		Std. Residual	2.3**	– 5.3***	– 2.5**	4.1***	5.6***	–1.2	1.0
	Advisor	Obs. Frequency	108.0	109.0	163.0	6.0	7.0	1.0	–0.7
		Exp. Frequency	128.8	75.9	134.3	18.7	33.6	2.2	0.0
		Std. Residual	– 1.8	3.8**	2.5**	– 2.9**	– 4.6***	–0.8	0.0
	Personal source	Obs. Frequency	11.0	9.0	9.0	0.0	0.0	0.0	0.0
		Exp. Frequency	9.5	5.6	9.9	1.4	2.5	0.2	0.0
		Std. Residual	– 0.5	1.4	– 0.3	–1.2	– 1.6	–0.4	–0.2
	Other	Obs. Frequency	7.0	7.0	6.0	1.0	5.0	3.0	0.0
		Exp.Frequency	9.5	5.6	9.9	1.4	2.5	0.2	0.0
		Std. Residual	– 0.8	0.6	– 1.2	–0.3	1.6	7.1	– 0.2

Note. * p<.05, ** p<.01, *** p<.001

Concerning the NTCA as a source there is now an overrepresentation for the written channel (z = 4.1). The overrepresentation for the website still exists, but has decreased (z = 5.6). The combination NTCA−telephone shifted from a (small) underrepresentation in first instance to a (small) overrepresentation. The other source-channel combinations still show an underrepresentation. With respect to the advisor there is now only one significant overrepresentation, which is the combination advisor with face-to-face (z = 3.8). The combination advisor−telephone shifted from a significant overrepresentation (in first instance) to an insignificant underrepresentation. The overrepresentation of advisor-e-mail has decreased in second instance. Regarding personal sources no under or overrepresentations were found.

CORRELATION BETWEEN SOURCE AND CHANNEL CHARACTERISTICS

The previous section showed the existence of the source-channel interdependency, but what triggers this interdependency? Several hypotheses were formulated to study the interdependency. A first hypothesis (H_{3a}) concerns the influence of perceived source characteristics on channel choice. This hypothesis was partly supported while studying the direct effects earlier in this section. Another hypothesis (H_{3c}) proposed that perceived source characteristics are associated to perceived channel characteristics.

A Pearson correlation test in SPSS was executed to study the correlation between perceived characteristics of sources and channels. These perceived characteristics relate to the first consulted source in combination with the first chosen channel. Table 12.23 on the next page provides the correlations among these variables. As discussed in the previous section we can interpret a correlation coefficient below or equal to .35 as low or weak, .36 to .67 as moderate, greater than .67 as strong or high correlations. Coefficients greater than .90 are considered as very high.

Table 12.23 Correlations between Perceived Source and Channel Characteristics

	Channel Characteristics								
Source Characteristics	Immediacy of Feedback	Speed of Answer	Possibility to Interrogate	Possibility to inform	Personalization	Multiple Cues	Possibility to make sure	Possibility to register	Costs
Expertise	.074**	.137**	.111**	.130**	.094**	.026	.168**	.047	–.056
Experienced	.061*	.121**	.103**	.137**	.052	.024	.146**	.073*	–.047
Involvement	.139**	.164**	.170**	.171**	.174**	.101**	.166**	.051	–.069*
Accessibility	.183**	.220**	.189**	.205**	.176**	.123**	.147**	.052	–.012
Approachability	.189**	.225**	.195**	.180**	.173**	.129**	.152**	.047	–.036

Note. ** Correlation is significant at the 0.01 level (2–tailed).
* Correlation is significant at the 0.05 level (2–tailed).

It is apparent that no strong or moderate correlations exist between characteristics of sources and channels. However, there are some interesting weak or low correlations observed. Perceived accessibility and approachability of a certain source correlates with perceived speed of answer of a particular channel (respectively r=.220, and r=.225). Further, perceived accessibility, approachability, and involvement of the source correlates with the perceived channel characteristics' possibility to inform (respectively r=.205, r=.180, and r=.171). The strongest correlations for the source characteristics expertise and experienced are observed with the channel characteristics possibility to make sure (respectively r=.168 and r=.146). No substantial correlations are found for possibility to register and costs perceived for channels.

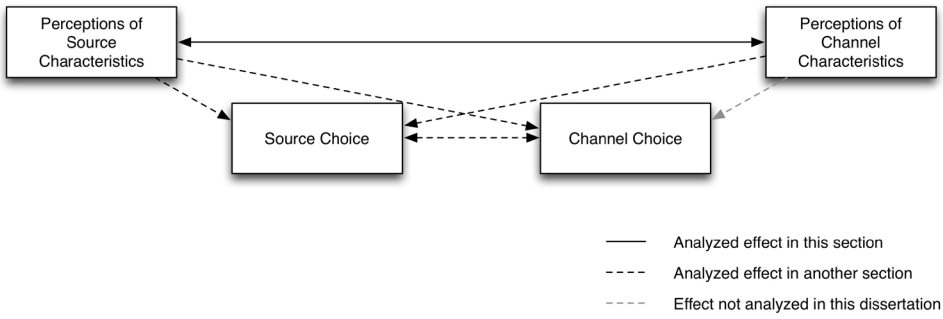

Figure 12.6 *The relationship between source and channel characteristics is topic of analysis*

INFLUENCE OF CHANNEL CHARACTERISTICS ON SOURCE CHOICE

Three binary logistic regression analyses (method Enter) were performed to test if perceived channel characteristics influence the selection of the source. For each source – NTCA, advisor, and personal sources – one analysis was conducted. Table 12.24 presents the results of these analyses.

The first analysis was executed for the selection of an advisor. The residual chi-square statistic is 431.54 and significant at p<.001 level. The Cox and Snell R-square (.359) and the Nagelkerke R-square (.478) show that this regression model explains a large part of the variance. The Hosmer and Lemeshow statistic shows an adequate fit of the data ($\chi^2(8)$=9.863, p=.275). The second analysis focused on the choice for the NTCA. The residual chi-square is significant (p<.001) and has a value of 393.43. The Cox and Snell R-square is .316 and the Nagelkerke R-square shows a value of .424. The Hosmer and Lemeshow statistic is insignificant (p=.056, $\chi^2(8)$=15.153), which indicated an adequate fit. Third, the influence of channel characteristics on the selection of personal sources was

Table 12.24 Results of Logistic Regression Analysis of Channel Characteristics on Source Choice

	Advisor (1st choice)				NTCA (1st choice)				Personal Source (2nd choice)			
		95% CI for Exp (B)				95% CI for Exp (B)				95% CI for Exp (B)		
Channel Characteristics	B(SE)	Lower	Odds Ratio	Upper	B(SE)	Lower	Odds Ratio	Upper	B(SE)	Lower	Odds Ratio	Upper
Immediacy of feedback	– .162 (.07)*	.75	.85	.97	.123 (.06)*	1.01	1.13	1.27	.028 (.08)	.88	1.03	1.21
Speed of answer	.028 (.08)	.89	1.03	1.19	–.090 (.07)	.80	.91	1.04	– .036 (.09)	.81	.97	1.15
Possibility to interrogate	.223 (.07)**	1.09	1.25	1.44	–.112 (.06)	.80	.89	1.01	.032 (.09)	.86	1.03	1.24
Possibility to inform	.110 (.08)	.96	1.12	1.30	–.099 (.07)	.80	.91	1.03	.059 (.09)	.89	1.06	1.27
Personalization	.451 (.06)***	1.39	1.57	1.78	–.466 (.06)***	.56	.63	.70	.037 (.08)	.89	1.04	1.22
Multiple cues	– .160 (.05)**	.78	.85	.93	.087 (.05)	1.00	1.09	1.19	– .002 (.07)	.88	1.00	1.13
Possibility to make sure	.132 (.06)*	1.02	1.14	1.28	.050 (.06)	.94	1.05	1.18	.064 (.08)	.92	1.07	1.24
Possibility to register	.273 (.04)***	1.21	1.31	1.43	–.258 (.04)***	.72	.77	.84	.027 (.05)	.92	1.03	1.14
Costs	– .597(.05)***	.50	.55	.61	.451 (.05)***	1.42	1.57	1.73	– .132 (.06)*	.77	.88	.99
Constant	–1.524(.42)***		.22		.973 (.40)*		2.65		–1.548 (.59)**		.21	

Note. * p<.05, ** p<.01, *** p<.001

examined. The explained variance of this model is small, since both the Cox and Snell R-square (.029) and the Nagelkerke R-square (.045) show low values. Whereas the Hosmer and Lemeshow statistic indicates a good fit ($\chi^2(8)=3.844$, $p=.871$), the residual chi-square shows the opposite. The residual chi-square statistic is 16.48 and insignificant ($p=.057$). This suggests that the addition of one or more of the listed variables does not significantly affect the predictive power of the model (Field, 2009). Hence, interpretation of the results regarding the regression on personal source is impossible.

Four predictors (i.e., types of channel characteristics) are identified as significant predictors for the selection of both the NTCA and advisors. When a channel is increasingly perceived as providing immediate feedback, it is more likely that the NTCA is consulted ($b=.123$, $p<.05$) and it becomes less likely that an advisor is chosen ($b=-.162$, $p<.001$). Further, when the selected channel is increasingly perceived as personal, it is more likely that the advisor is chosen ($b=.451$, $p<.001$) and it becomes less likely that the NTCA is selected ($b=-.466$, $p<.001$). Another predictor is the possibility to register. When the perceived possibility to register of the chosen channel increases, the probability increases that the advisor is selected ($b=.273$, $p<.001$). In contrast, it leads to a decrease in the probability that the NTCA is consulted ($b=-.258$, $p<.001$). The final common predictor is perceived costs of the channel. It is observed that when the perceived costs increase, it becomes less likely that an advisor is selected ($b=-.597$, $p<.001$), however, it is more likely that the NTCA is consulted ($b=.451$, $p<.001$). Next to these common predictors, there are three more channel characteristics that have a significant effect on the selection of an advisor. One of these predictors (multiple cues) shows a negative effect ($b=-160$, $p<.01$). The other two show a positive effect on the selection of an advisor (possibility to interrogate ($b=223$, $p<.01$) and possibility to make sure ($b=.132$, $p<.05$).

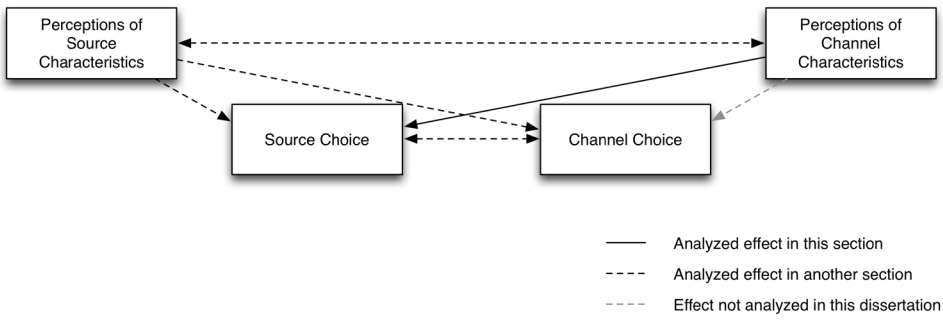

Figure 12.7 *The effect of channel characteristics on source choice is topic of analysis*

PERCEIVED CHANNEL CHARACTERISTICS

Two additional hypotheses were formulated regarding the perceived characteristics for various channels and sources (respectively H_{2a} and H_{1a}). These hypotheses were not included in the model due to the methodological issues explained in the previous section. The present section will discuss the results regarding channel choice; the next section focuses on source choice.

A one way ANOVA−test was performed in SPSS to test the hypothesis that argues that the extent to which a certain characteristic is assigned to a channel, will vary across various types of channels (H_{2a}). Table 12.25 reflects the results for this test. It is apparent that significant differences are observed for all channel characteristics.

Table 12.25 Results ANOVA–test for Perceived Channel Characteristics

	Telephone		Face-to-face		E-mail		Website				
Item	M	SD	M	SD	M	SD	M	SD	F	Df1, df2	p
Immediacy of feedback	5.9^{bc}	1.33	6.1 ^{de}	1.30	4.7^{bdf}	1.82	3.7^{cef}	2.24	14.225	3, 1189	.000
Speed of answer	5.9^{bc}	1.33	6.1 ^{de}	1.09	5.4^{bd}	1.59	5.5^{ce}	1.61	13.092	3, 1190	.000
Possibility to interrogate	6.0^{bc}	1.29	6.3 ^{de}	1.14	5.2^{bdf}	1.89	2.8^{cef}	1.83	339.477	3, 1188	.000
Possibility to inform	6.0^{c}	1.19	6.1^{e}	1.15	5.9^{f}	1.29	4.1^{cef}	2.12	116.418	3, 1187	.000
Personalization	5.6^{abc}	1.54	6.3^{ade}	1.15	4.2^{bdf}	1.82	2.0^{cef}	1.26	464.316	3, 1187	.000
Multiple cues	4.6^{abc}	1.65	5.9^{ade}	1.07	3.4^{bdf}	2.13	2.7^{cef}	1.84	133.789	3, 1185	.000
Possibility to make sure	5.0^{a}	1.60	5.4^{ae}	1.21	5.3	1.42	5.0^{e}	1.63	4.827	3, 1185	.002
Possibility to register	3.8^{ab}	2.00	4.8 ^{ade}	1.95	6.2 ^{bdf}	1.20	4.1 ^{ef}	2.14	69.193	3, 1185	.000
Costs	4.7^{bc}	1.62	4.4^{de}	1.88	5.4^{bdf}	1.71	6.4^{cef}	1.14	92.877	3, 1187	.000

Note. a,b,c,d,e,f significant difference at the .05 level between two channels
a. Difference between telephone and face-to-face *b. Difference between telephone and e-mail*
c. Difference between telephone and website *d. Difference between face-to-face and e-mail*
e. Difference between face-to-face and website *f. Difference between e-mail and website*

The characteristics immediacy of feedback, speed of answer, possibility to interrogate, and costs show similar differences between the four channels. No differences for these characteristics were observed between face-to-face and the telephone. However, significant differences exist for all other combinations of channels. For instance, the lowest score for perceived immediacy of feedback concerns website (*M*=3.7, *SD*=2.24). The highest average score is observed for face-to-face communication (*M*=6.1, *SD*=1.30), closely followed by the telephone (*M*=5.9, *SD*=1.33). E-mail is in the middle (*M*=4.7, *SD*=1.82). Exactly the opposite is observed for perceived costs. Significant differences between all channels are observed for the characteristics personalization and multiple cues. Again, the highest average score on personalization is observed for face-to-face (*M*=6.3, *SD*=1.14), followed by the telephone (*M*=5.6, *SD*=1.54). E-mail (*M*=4.2, *SD*=1.82) and website (*M*=2.0, *SD*=1.26) are far behind. With respect to the characteristic possibility to inform

a different pattern is observed. Only the website (*M*=4.1, *SD*=2.12) significantly differs from face-to-face (*M*=6.1, *SD*=1.15), the telephone (*M*=6.0, *SD*=1.19), and e-mail (*M*=5.9, *SD*=1.29). Also for the perceived possibility to make sure differences are found only between face-to-face (*M*=5.4, *SD*=1.21) and the telephone (*M*=5.0, *SD*=1.60) and a website (*M*=5.0, *SD*=1.63).

PERCEIVED SOURCE CHARACTERISTICS

Similar to the analysis of channel characteristics, a one-way ANOVA test with a Tukey Posthoc analysis was executed to study the extent to which a certain characteristic is assigned to a source will vary across various kinds of sources (H_{1a}). The results are shown in table 12.26 on the next page. Again, significant differences between sources are observed for all source characteristics.

Table 12.26 Results ANOVA–test for Perceived Source Characteristics

	NTCA		Advisor		Personal Source				
Item	M	SD	M	SD	M	SD	F	Df1, df2	p
No expertise vs. Expertise	5.9[ab]	.95	6.2[ac]	.84	4.4[bc]	.95	55.121	3, 1209	.000
No experience vs. Experienced	6.0[ab]	.91	6.2[ac]	.80	4.5[bc]	1.00	59.601	3, 1206	.000
Not involved vs. Involved	5.7[a]	1.17	6.1[ac]	.95	5.4[c]	.98	20.231	3, 1206	.000
Not accessible vs. Accessible	5.9[a]	1.06	6.2[ac]	.90	5.7[c]	.93	17.010	3, 1206	.000
Not approachable vs. Approachable	5.9[a]	.99	6.3[ac]	.82	5.7[c]	.94	18.218	3, 1207	.000

Note. *a,b,c, significant difference at the .05 level between two channels*
a. Difference between NTCA and advisor
b. Difference between NTCA and personal source
c. Difference between advisor and personal source

With respect to the characteristics expertise and experienced it is observed that all three sources differ from each other. For expertise, the highest average score is observed for the advisor (*M*=6.2, *SD*=.84), the lowest for personal sources (*M*=4.4, *SD*=.95). The NTCA is in the middle (*M*=5.9, *SD*=.95). The same pattern is identified for experienced. Further, similar differences are observed regarding the characteristics involvement, approachability and accessibility. For instance, the advisor is perceived the most involved (*M*=6.1, *SD*=.95), followed by the NTCA (*M*=5.7, *SD*=1.17) and personal sources (*M*=5.4, *SD*=.98). It is surprising that personal sources score the lowest on such characteristics.

12.2.5 SOURCE AND CHANNEL CHOICES IN THE INFORMATION-SEEKING PROCESS

To test which factors influence the number of chosen sources and channels in a single seeking process, linear regression analyses were executed, one for source choice and

one for channel choice. Table 12.27 illustrates that only task characteristics influence the number of chosen sources. As task characteristics play an increasing role, the number of selected sources in the information seeking process increases (b=.117, p<.001). With respect to the number of selected channels only relationship characteristics is a significant predictor. As the role of relationship characteristics increases more channels are chosen to contact a source during the seeking process (b=.263, p<.01). All other factors play no significant role here.

Table 12.27 Results of linear regression analyses: which factors influence length of seeking process

	Number of Consulted Sources			Number of Selected Channels		
		95% CI for B			95% CI for B	
	B(SE)	Lower	Upper	B(SE)	Lower	Upper
Constant	1.598 (.03)***	1.55	1.65	2.279 (.05)***	2.18	2.37
Task Characteristics	.117 (.03)***	.06	.17	– .092 (.05)	– .20	.01
Situational Factors	– .003 (.02)	– .05	.04	– .034 (.08)	– .19	.12
Prior Experiences	– .082 (.04)	– .17	.01	.046 (.06)	– .08	.17
Social Influence	.012 (.05)	– .08	.10	.030 (.07)	– .11	.17
Relationship Characteristics	– .021 (.03)	– .08	.04	.263 (.08)**	.10	.42
Trust	– .053 (.04)	– .12	.02	-	-	-

Note. R^2=.026 for Source Choice, and R2= .018 for Channel Choice.

12.3 SUMMARIZING THE RESULTS: WHICH HYPOTHESES ARE SUPPORTED AND WHICH ARE REJECTED?

This section summarizes the findings presented in the current chapter. First the results regarding source choice are discussed, followed by the results for channel choice. The figures 12.8, 12.9, and 12.10 provide an overview of the proposed effects and whether or not they are (partly) supported or rejected according to our findings. All hypotheses and associated results are also presented in a table, see appendix 4.

12.3.1 THE CORE OF THE MODEL: THE INTERRELATION BETWEEN SOURCE AND CHANNEL CHOICE

The core of our model involves source and channel choice and their corresponding perceived characteristics. This section summarizes the related findings (also depicted in figure 12.8).

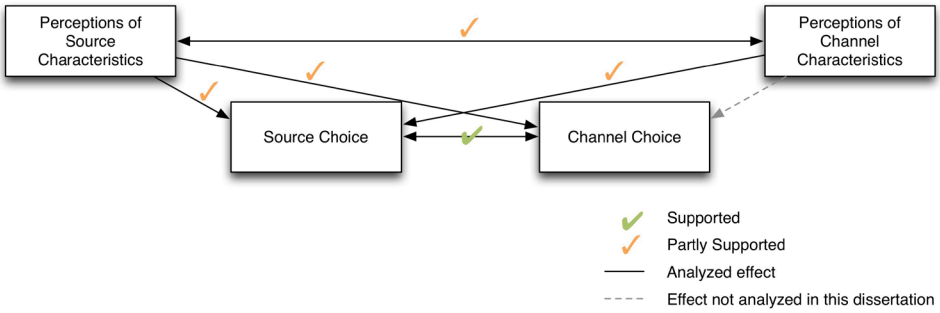

Figure 12.8 *Overview of the (partly) supported and rejected hypotheses regarding source and channel characteristics and its source and channel choices.*

Our findings indicate that the extent to which a certain characteristic is assigned to a source (H_{1a}) or channel (H_{2a}) varies across various types of sources and channels. For all source and channel characteristics we found that they differ between the various sources and channels. Thus, strong support for the two hypotheses was found. For instance, concerning source choice it was observed that the advisor is the source with the strongest perception of expertise, followed by the NTCA and personal sources. The same pattern was observed for the perceived level of involvement and other types of service skills of sources. An example of a finding concerning channel choice is that the channel with the strongest perception on personalization is face-to-face, followed by the telephone. E-mail and website are far behind.

Strong support is found for the hypothesis that the selection of sources and channels is interdependent as people choose various source-channel combinations (H_3). The findings indicate that some channels are indeed relatively more chosen to consult a source compared to other sources. Source-channel combinations that are frequently selected are the NTCA with the website, the advisor with the telephone and also with e-mail, and personal sources with the channel face-to-face. In contrast, source-channel combinations that are seldom selected are the NTCA with face-to-face, and the sources advisor and personal sources with the channel website.

In the previous sections it was evidenced that *perceived source characteristics* are to some extent of influence on the selection of channels. Let us now turn to the supposed effect of *perceived channel characteristics* on source choice. In total, seven types of channel characteristics are found to be of significant influence. Four of them influence the selection

of both the NTCA and advisors. These are immediacy of feedback, personality, possibility to register, and costs of a channel. Three other characteristics affect only the selection of advisors: multiple cues, possibility to interrogate and possibility to make sure. Thus, the findings of this study partly support the hypothesis that *channel characteristics* influence the selection of a source (H_{3b}).

Weak support was found for the proposed correlation between perceived source and channel characteristics (H_{3c}). Nevertheless, we found some low correlations between (1) perceived *accessibility* and *approachability* of a certain source with perceived *speed* of *answer* of a particular channel, (2) perceived *accessibility, approachability,* and *involvement* of the source with the channel characteristic *possibility to inform*, and (3) the source characteristics *expertise* and *experienced* with the channel characteristic *possibility to make sure*.

12.3.2 DIRECT EFFECTS ON SOURCE CHOICE

It is apparent from the results that various factors are observed as significant predictors for various sources. Subsequently, many of the formulated hypotheses are only partly supported, since they are not significant for each source choice (see figure 12.9). This will be further elaborated below.

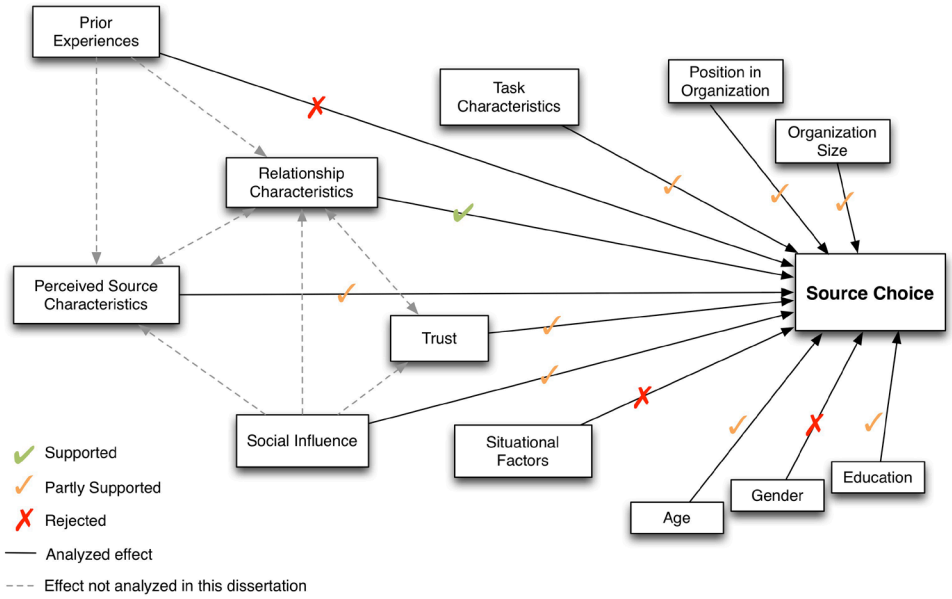

Figure 12.9 *Overview of the (partly) supported and rejected hypotheses regarding source choice*

With respec to the impact of *source characteristics* on source choice, only partial support is found (H_1). As mentioned in section 12.1, the construct of *source characteristics* consists of two sub predictors: (a) *perceived expertise*, and (b) *perceived service skills*. Further, these constructs were measured in a semantic differential format, thus, for each source it was asked to what extent these characteristics were perceived (chapter 9). The sub predictor that is significant for all sources is perceived *service skills of the government.* An increase – as one perceives more service skills – means that it becomes more likely that the NTCA is consulted, and a decrease implies that it is less likely that an advisor or personal source is chosen. Further, *perceived service skills* of *the advisor* influence the choice for the NTCA and advisor, but not for personal sources. An increase leads to a decrease for consulting the NTCA, and an increase for consulting the advisor. Whereas *perceived service skills* of *external contacts* and of *family/friends* have a positive influence on selecting personal sources, there is no influence observed for the NTCA as well as the advisor. The same pattern is found for the effect of *perceived expertise* of *family/ friends*. Surprisingly, *perceived expertise* of the *government, advisor, external contacts*, and *associations* exert no significant influence on any source choice. This is similar for *perceived service skills of associations*.

No significant effects were found regarding the assumed impact of *prior experiences* on any of the source choices. This indicates that *prior experiences* have no influence on source choice, which means that H_{4b} is rejected.

Task characteristics and *trust* are identified as significant predictors for both the NTCA and advisors, but are insignificant for selecting personal sources. When *task characteristics* become more important in the information seeking process, it becomes more likely that the NTCA is consulted and less likely that the advisor is consulted. The opposite pattern is observed with respect to *trust*. No hypothesis was formulated regarding *trust* as a construct on its own, since this construct was assumed to be part of the construct *relationship characteristics* (explained in chapter 9 as well as in §12.1). The hypothesis that *task characteristics* (H_6) influence source choice is partly supported.

We found no significant results for the effect of *situational factors* on source choice. Thus, the hypothesis that *situational factors* influence source selection is rejected (H_7).

The findings show that *social influence* is only significant for the choice of the NTCA and not for the selection of the other sources. Therefore, it can be concluded that partial support is found for the hypothesis that *social influence* affect source choice (H_8).

The results show that when *relationship characteristics* play an increasing role in the source selection process, it becomes less likely that the NTCA is chosen. Conversely, it becomes more likely that an advisor or a personal source is chosen. This is the only predictor that is of influence for all three types of sources. Hence, support is found for the hypothesis that *relationship characteristics* influence source choice (H_9).

With regard to *personal characteristics* we found that *gender* has no influence on any source choice in this study. Education and age are only found to be significant for the NTCA. As age increases, it becomes less likely that the NTCA is consulted. People with a medium level of education are less inclined to select the NTCA than higher educated people. So, little support is found for the assumption that *personal characteristics* influence source choice (H_{14}).

Organization size is found to be of influence only on the probability for selecting an advisor. Moreover, differences were only observed between businesses with 10 to 50 employees and businesses with 6 to 10 employees. The latter group is more inclined to consult an advisor. This leads to the finding that there is little support for the assumption that organization size influences source choice (H_{15}).

Position in the organization is identified as a significant predictor for choosing the NTCA and advisors, but has no influence on the selection of personal sources. It was found that managing directors are more inclined than experts to consult directly an advisor, but less inclined to consult the NTCA. Self−employed are also less inclined to select the NTCA compared to experts, though no differences between these two were found in consulting the advisor. For the selection of personal sources no effect of position was observed. Therefore, the hypothesis that *position in the organization* influences source choice (H_{16}) is partly supported.

12.3.3 DIRECT EFFECTS ON CHANNEL CHOICE

Since only two predictors (organization size and education) were found to be significant for the selection of face-to-face communication —and because this channel was not chosen often— a comparison of the results is made for just two channels (website and telephone). These channels were the only ones with sufficient observations (i.e., the ratio between being selected (1) and select another channel (0)) to develop a statistical model. Further, *perceived channel characteristics* were excluded from the model building part, as explained in chapter 9. Figure 12.10 provides an overview of the (partly) supported and rejected hypotheses.

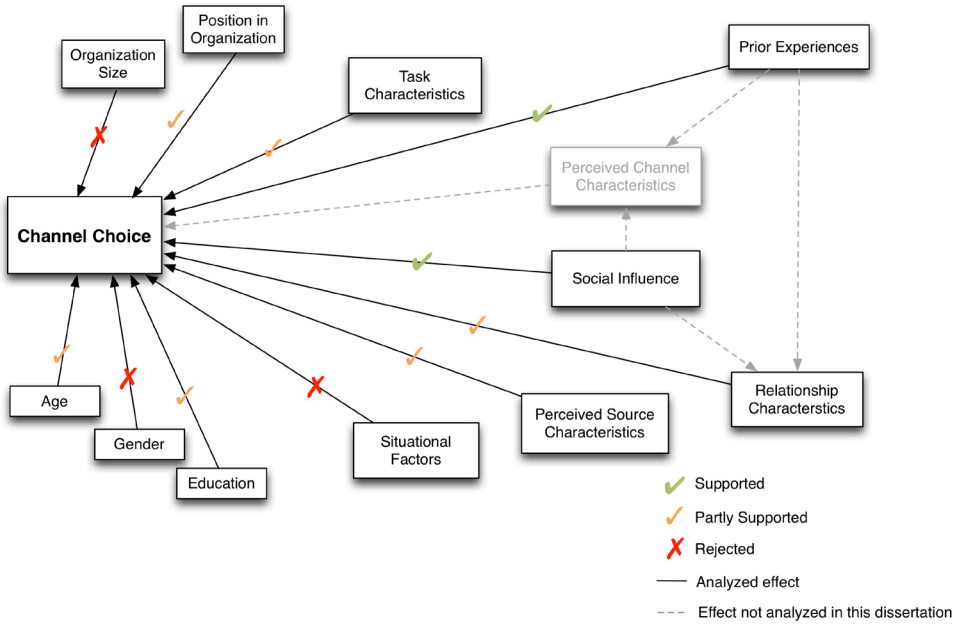

Figure 12.10 *Overview of the (partly) supported and rejected hypotheses regarding channel choice*

Perceived source characteristics (both expertise and *service skills*) are found to be predictors for the selection of the telephone and the website. *Expertise* of *family/friends* plays a role in the selection of the telephone. As it increases it becomes less likely that the telephone is selected. *Expertise* of *the government* significantly affect the choice for the website, as it increases it becomes more likely that a website is visited. Further, *service skills of the advisor* affect the selection for the telephone as well as the website. An increase leads to a decrease in the chance that the website is selected, in contrast, it leads to an increase in the probability that the telephone is chosen. However, *expertise of the advisor, external contacts*, and *associations* exert not influence on any channel choice of this study. The same is true for *perceived service skills* of *family/friends*, the *government, external contacts* and *associations*. Based on the above, we conclude that partial support is found for the notion that *perceived source characteristics* influence channel choice (H_{3a}).

The effect of *prior experiences* is identified as significant for both channels (website and telephone), though the effects are the opposite. A negative effect is observed for the telephone, and a positive effect for the website. When the importance of *prior experiences* in the seeking process increases, it becomes more likely that the website is chosen, but less

likely that the telephone is chosen. Despite this, it can be concluded that support is found for the assumption that *prior experiences* influence channel choice (H_{4a}).

According to the findings in this study are *task characteristics* of influence on the selection of the channel website, but no effect is found regarding the telephone. As *task characteristics* become of more importance it is more likely that the website is selected. Therefore, the hypothesis that *task characteristics* influence channel choice is partly supported (H_6).

With respect to the effect of *situational factors*, no significant results were found. This indicates that *situational* factors are no predictor for any channel choice in this study; therefore, hypothesis H_7 is rejected.

Social influence is found to be a significant predictor for both the channels website and telephone. As *perceived social influence* plays an increasing role in the information seeking process it is more likely that the telephone is selected. In contrast, it becomes less likely that the website is chosen. These findings support the hypothesis that social influence affect channel choice (H_{8a}).

Relationship characteristics influence the choice for the website, but not for the telephone. As *relationship characteristics* play an increasing role in the information seeking process, it becomes less likely that the website is selected. Hence, only partial support is found for the effect of *relationship characteristics* on channel choice (H_{11}).

Whereas age is a significant predictor only for the website, *education* is of significant influence for only the choice for the telephone. As *age* increases, it is less likely that the website is selected. *Medium educated* are less inclined to call than *higher educated*, but *lower educated* are more inclined. Gender is of no influence for any channel choice in study. In sum, partial support is found for the hypothesis that *personal characteristics* affect channel choice (H_{14}).

With respect to *organization size* no influence is found for any channel choice in this study. Thus, the hypothesis that *organization size* affects channel choice is rejected (H_{15}).

Another predictor that is significant for both the telephone and the website is *position* of the information seeker in the organization. The findings indicate managing directors and self−employed are less inclined to visit the website than experts. The exact opposite effect is observed regarding the telephone. This finding leads to the conclusion that the assumed effect of *position* on channel choice is supported in this study (H_{16}).

12.3.4 COMPARING SOURCE AND CHANNEL CHOICE PREDICTORS

One of the main goals in this dissertation is to determine to what extent source and channel choices are determined by the same underlying factors. The findings discussed in the two previous sections indicated that there are general factors that impact each source choice or each channel choice. However, we also found that there are several factors that only influence a particular source or channel choice. This section discusses the similarities and differences between the predictors for source choice versus the predictors of channel choice.

Prior experiences are a general predictor for channel choice, according to the findings in this study. In contrast, *prior experiences* have no influence on the selection of sources. *Situational factors* do not play a role at all. This finding is consistent for both source and channel selection. Whereas *relationship characteristics* are a general predictor for the selection of sources, it is only of influence on the selection of the channel website and not for the telephone. A contrasting pattern is found for *social influence*. While *social influence* is considered to be a general influencing factor on channel choice, the findings show that it is influences only one out of the three analyzed source choices. For both source and channel choice it is observed that *task characteristics* can be considered as a source or channel specific influencing factor. That is, it only influences the choice for a website as a channel and the choice for the NTCA and an advisor as sources.

Regarding the impact of *perceived source characteristics* we found some interesting differences between source and channel choice. Whereas *perceived service skills* have more impact than *perceived expertise* regarding the selection of sources, the opposite pattern is observed for the selection of channels. However, except for the general impact of *perceived service skills of the government* on source choice, none of the predictors exerts influence on all sources and/or channel included in this study. It is also worth noting that the impact seems greater for source choice than for channel choice, since a wider variety of *perceived source characteristics* influences source choice than channel choice.

Organization size has no influence on the selection of channels. This seems similar for source choice, though one significant finding is observed here that indicates a difference between businesses with 10 to 50 and with 6 to 10 employees. This finding was observed for just a single source: consulting an advisor. Further, *position in the organization* seems to play a crucial role for both source and channel choice. Whereas it is a general influencing factor regarding channel choice, it impacts two of the three analyzed source choices: NTCA and advisor. For both source and channel choice is it observed that *gender* is no predictor. However, *age* does play a role in particular source and channel choices. The

findings show that *age* influences the choice for the NTCA as a source and the choice for the channel website. Also for the impact of *education* it is observed that it only influences certain source (the NTCA) and channel (telephone) choices.

12.3.5 THE LENGTH OF THE INFORMATION-SEEKING PROCESS

Two hypotheses were formulated to study the factors that influence the length of the information seeking process. The first hypothesis (H_{17}) argues that *situational factors* influence the length of the information seeking process. According to the findings in this study, this hypothesis must be rejected since no significant influence is observed, for both source and channel choice. However, another influencing factor emerged from the findings. It was found that *relationship characteristics* affect the number of selected channels in the information seeking process. As the role of *relationship characteristics* increases more channels are chosen to contact a source. Besides the one significant predictor for the selected number of sources (*task characteristics*) and the one predictor for the number of chosen channels (*relationship characteristics*), no other factors that could influence the length of the information seeking process are found.

The findings show that *task characteristics* impact the number of selected sources, but has no effect on the number of chosen channels. As *task characteristics* play a more important role in the information seeking process, the number of selected sources increases as well. Therefore, partial support is found for the hypothesis (H_{18}) that *task characteristics* influence the length of the information seeking process, as it only influence source choice and not channel choice.

PART V

DISCUSSION, CONCLUSIONS AND IMPLICATIONS

CHAPTER 13

CONCLUSIONS

Which factors are the most important determinants for source and channel choices? This question was this dissertation's starting point. The primary goal of our research is twofold. First, the theoretical goal is to enhance the understanding of the selection processes of source and channel choices and to provide a first insight into the interdependency between source and channel choices. Second, the practical goal is to offer insights to governments so they can improve service delivery strategies for businesses. To achieve these goals, we formulated one primary research question: *Which factors are the most important determinants for source and channel choice processes in the context of business-to-government service interactions?* We also developed three sub questions. The first of these sub questions examines the extent to which source and channel choices are determined by the same underlying factors. The second sub question focused on how channel and source choices relate to each other. The factors that influence the number of selected sources and channels throughout information-seeking processes are examined in the third of the sub questions. Together, these questions form the core of our research. To structure the research process, we have formulated and addressed four additional questions. These questions focus on the more methodological aspects of the research process.

Our studies were conducted in the context of business-to-government (B2G) service interactions, more specifically, in the context of the Netherlands Tax and Customs Administration (NTCA). We focus on the NTCA's interaction with businesses (i.e., self-employed persons and businesses with up to fifty employees) in which it is businesses that have taken the initiative (i.e., information seeking). Our empirical results are thus applicable in the context of B2G service interactions. Nevertheless, the proposed differences and interdependencies of the concepts of source and channel choices are believed to be fundamental and are therefore relevant in a broader context than that of B2G service interactions.

For reasons of clarity and the ability to study similarities and differences between the selection processes of sources and channels, we clearly separated the concepts of source and channel. Source was defined as the person or organization storing the information, from whom (or which) that information can be obtained by the seeker (adapted from Christensen & Bailey, 1997). Channel was defined as the means by which information is transferred

between the source and seeker (adopted from Pieterson, 2009). That is, information seekers use channels to obtain information from information sources. Despite this differentiation, it is argued in this dissertation that there is no channel choice without source choice and vice versa. Moreover, the dividing line between source and channel can be ambiguous in certain situations (e.g., when visiting a website, the source retreats to the background while the channel plays a more prominent role).

Furthermore, this dissertation adopted the user perspective (i.e., the perspective of individual representatives of SMEs regarding tax matters). The user takes the initiative to obtain information from sources such as the government (i.e., to use service delivery) or other persons or organizations (chapter 1). That is, the information seeker decides from which source and via which channel information is obtained and thus controls the communication- and information-seeking processes. Because we focus exclusively on communication- and information-seeking, channel modes consultation (i.e., where a seeker obtains the required information himself) and conversation (i.e., where there is actual interaction between a seeker and an information source), based on Ebbers et al. (2008), were incorporated. Transaction, registration and allocution are beyond the scope of this dissertation.

This chapter begins by briefly answering the research questions that provided structure and guided the research process (§13.1). Subsequently, we provide answers to the core research questions (§13.2) by discussing findings related to 1) the differences and similarities between sources and channels and 2) the various roles of sources and channels in the information-seeking process.

13.1 A REVIEW OF THE RESEARCH PROCESS

We designed our research process based on four questions. These questions refer to analyses of the available findings in research (RQ_a) and theory (RQ_b), the conduct of a qualitative study to explore source and channel choice determinants (RQ_c), and the development of a conceptual research model that explains the source and channel choices (RQ_d) to be tested in a quantitative setting. This section briefly provides answers to these questions. For an extensive elaboration on the answers, we refer to the corresponding chapters in this dissertation.

In chapter 3, an answer was sought on RQ_a: *What insights can be derived from a review of existing empirical research findings regarding source and channel choice processes in the*

context of B2G service interactions? This question aims to provide a clear contextualization of the topic. We observed that both practitioners and researchers in the domains of e-government and multichannel management have struggled to find effective and efficient service delivery strategies ever since the rise of electronic channels. Some argue that a match between government preferences and those of their clients is highly necessary (e.g., Ebbers et al., 2008). Nevertheless, many strategies have been implemented based on the supplier's perspective (i.e., that of the government). In addition, few studies have focused on businesses' source and channel choices in the context of B2G-interaction (e.g., Bergers, 2003; De Vos, 2008). Most of these studies examine the measurable outcomes of source and channel choices, such as preference and use. For example, the most-consulted sources are the government and formal intermediaries (i.e., expert organizations), and the most popular channels are websites and the telephone. These studies provide some possible explanations for their findings, but knowledge of the underlying influencing factors is lacking.

The second research question (RQ_b) is as follows: *What theoretical insights can be derived from a review of existing theories regarding source and channel choice processes in the context of B2G service interactions?* Part 2 answers this question by discussing theories that focus on channel choices (chapter 4) and theories that provide insight into source choices (chapter 5). We find that theories of channel choice are primarily rooted in the media choice and use literature (e.g., Media Richness Theory (Daft & Lengel, 1986; 1984;), the social influence model (Fulk et al., 1990), and Pieterson's model of individuals' channel-choice process (2009)). Theories that provide insight into source choices (and sometimes channel choices) are primarily rooted in the domain of information seeking (e.g., Byström and Järvelin's model of information seeking, 1995; Leckie's model of information seeking, 1996). The discussed theories in both research domains identify a wide variety of factors that have been found to be important in the selection processes of sources and channels (e.g., *task characteristics, situational factors,* and *prior experiences*). In addition, we find some explicit indications for the existence of source-channel interaction (e.g., Saunders & Jones, 1990; Christensen & Bailey, 1997). Nevertheless, we have not found any studies that identify the various interdependencies between sources and channels and that identify the factors that trigger the source-channel interaction. Filling these gaps in the existing literature precisely is an important next step in developing communication theories.

Part 3 of this dissertation focuses on the qualitative study and seeks answer to RQ_c: *What potential factors, from an employee's perspective, influence source and channel choice processes in the context of B2G service interactions?* Answers to this question are delivered

in chapter 7, which discusses the results of this study. We observe that *task characteristics* and *prior experiences* are related to both source and channel choices. Another major finding is that *relationship characteristics* apparently affect source and channel choices, though their effect on channels is more difficult to determine. Further, our findings suggest that the *perceived characteristics of a source* —specified by *perceived service skills*— influence both source and channel choices. We observe no effect for channel characteristics on source choice; *channel characteristics* only seem to affect channel choice. We furthermore find that an *information seeker's position in his or her organization* (e.g., managing director, financial specialist) affects both source and channel choices. In contrast, indications for the impact of *social influence* (e.g., the opinion of others or social norms) and *situational factors* (e.g., available time or distance) are found but are less apparent. Therefore, we formulate no conclusions (based on the findings of the qualitative study) regarding these factors.

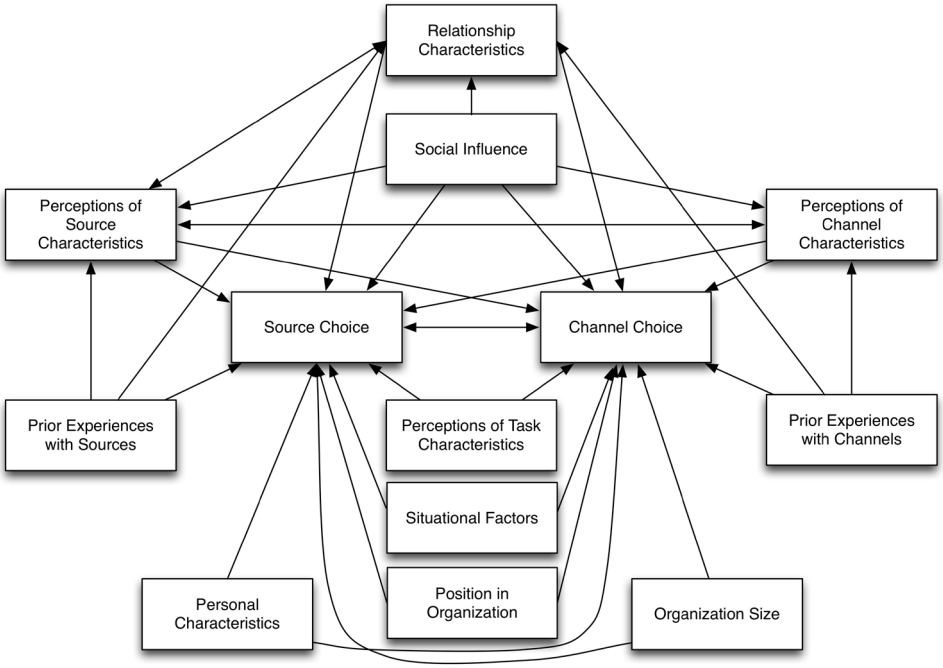

Figure 13.1 *Conceptual Research Model of Source and Channel Choices for Information Seeking by Businesses*

Next, we compare and merge the conclusions of the qualitative study with findings in the literature (chapter 8). RQ_d is the corresponding research question, as follows: *How can existing theoretical insights and the identified potential factors for source and channel*

choice processes in the context of B2G service interactions be integrated into a conceptual research model? To answer this question, we build a conceptual research model of source and channel choices (figure 13.1). The core of the model consists of the dependent variables source and channel choices, which should be interrelated. All of the factors that are expected to impact source and/or channel choices (e.g., *relationship characteristics, task characteristics, position in the organization,* and *prior experiences*) are modeled around these two dependent variables.

In part 4 of this dissertation, we designed a quantitative study to test the conceptual research model. The results of this study answer our primary research question and three sub questions:

Which factors are the most important determinants of source and channel choice processes in the context of B2G service interactions?

(a) To what extent are source and channel choices determined by the same underlying factors?
(b) How do channel and source choices relate to each other?
(c) Which factors influence the number of sources and channels chosen in a single informationseeking process?

The next section (§13.2) answers the above questions by discussing this dissertation's general conclusions.

13.2 GENERAL CONCLUSIONS

Based on the research, two main conclusions are drawn. The first is the difference between the selection processes for channels and the selection processes for sources (§13.2.1). This section starts by noting this difference and putting it into perspective by discussing two (other) notions that refer to 1) interdependencies in the selection processes and 2) clustered source and channel choice processes. The second main conclusion concerns the various roles of sources and channels throughout the information-seeking process (§13.2.2).

Section §13.2.1 answers the following questions: a) *To what extent are source and channel choices determined by the same underlying factors?* and b) *How do channel and source choices relate to each other?* In section §13.2.2, we answer the final sub question: c) *Which factors influence the number of sources and channels chosen in a single information-seeking process?*

13.2.1 DIFFERENCES AND INTERDEPENDENCIES BETWEEN SOURCES AND CHANNELS

One of our main conclusions is that selection processes for sources and channels are different. They cannot be considered interchangeable conceptualizations that encompass the same process. Two findings in our data lead to this conclusion and are discussed below. First, our data suggest that information seekers (i.e., representatives of SMEs for the purposes of tax matters) regularly recognize a clear difference between the selection of a source and that of a channel. Although many information-seekers generally —though not always— use the same channel to consult a particular source, other information seekers regularly select different source-channel combinations. On average, more than two channels are chosen to contact the first source. These findings lead to the conclusion that information seekers select both the source and the channel through which to consult this source, consciously and separately from each other.

Second, one of our goals (and one of the sub research questions) is to determine the extent to which source and channel choices are influenced by the same underlying factors. Our findings indicate that none of the predictors is important for all types of source choices and all types of channel choices. Nevertheless, we conclude that the following predictors are important for both source and channel choices: *task characteristics* (e.g., complexity, specificity, importance) and *the information seeker's position in his or her organization* (e.g., managing director or topic specialist). Despite these similarities, it also emerges from our data that some key differences (with respect to initial source and channel choices) exist for the effects of

- *prior experiences*
- *relationship characteristics,* and
- *social influence.*

The effect of *prior experiences* seems unique to the selection process for channels because the findings show no significant effect with respect to source choice. Furthermore, our data suggest that *relationship characteristics* (e.g., (in)formal nature or contact frequency) determine the selection of sources more than they do channels. The exact opposite is found regarding the effect of *social influence*. That is, opinions of others and communication norms within an organization determine channel choice, although this effect is weaker for source choice (because it is significant for only one out of three analyzed sources). These differences in the influencing factors underlying source and channel choices support the conclusion that information seekers select sources and channels separately. Thus, we conclude that the selection processes for sources and channels are different. We therefore reject the notion that the concepts of source and channel can be used interchangeably.

This distinction between sources and channels is considered to be the point of departure for our conclusions. It is nevertheless understandable that many theorists confuse sources and channels because our data also elucidate that the difference between the two is not terribly obvious. In the upcoming two sections, we present two notions that put into perspective the difference between the selection processes of sources and channels:

- The first notion shows that there is interaction between the selection processes. Various interdependencies are presented that provide this interaction with meaning.
- The second notion presents the idea of clustered source and channel choice processes, for which the difference is barely observable.

A FIRST NOTION: INTERDEPENDENCIES BETWEEN SOURCE AND CHANNEL CHOICES

The first notion that provides insight into the selection processes for sources and channels is the observation that these processes interact. Our data suggest that many information seekers generally use the same channel to contact a particular source, although they also switch between channels. That is, they prefer to use a particular channel to contact a particular source, but when necessary, they switch to another channel. This channel switch may be based on the *characteristics of the task*. For instance, an information seeker might prefer to use the e-mail channel to contact an advisor; however, the task at hand is complex and specific enough that face-to-face contact is necessary to discuss the task in detail. Notwithstanding these switches in channel choices, our data suggest that some channels are more frequently selected than others for consulting a particular source. This leads to the notion that source and channel choices are somehow interdependent. We find the following two indications for this notion and discuss them below:

- The source is selected before the channel and influences channel choice in several ways; and
- Some observed effects of influencing factors on channel choice (implicitly) reflect the underlying source choice.

First, our data suggest that information seekers often recognize a clear order with respect to what to choose first, the source or the channel. Although the majority first selects the source and then selects the channel, a minority selects the channel before the source. It must be noted that we lack the data to make substantial claims about this choice because only one question explicitly focused on this sequential aspect. Therefore, future research should focus on the temporal aspect of channel and source choices. Nevertheless, this finding shows that indications of source-channel interdependency may be found in the notion that the source is a (partial) predictor of the channel. We find that the

following factors provide more insight into this interdependency: 1) *perceived source characteristics* and 2) *relationship characteristics*. Both factors are related to the source and impact of channel choices. Box 13.1 illustrates how these interdependencies work.

Box 13.1—Illustration: How source and relationship characteristics uncover interdependencies between the selection of sources and channels.

Perceived source characteristics. When the advisor is increasingly perceived as being skilled in providing services (e.g., approachable or involved), it becomes less likely that the website channel is selected and more likely that the telephone channel is selected. Further, it emerges from our data that when the government is increasingly perceived to be an expert, the probability that the website channel is selected increases.

Relationship characteristics. When relationship characteristics are of increasing importance to the information seeker, the probability that the website channel is selected decreases. The results indicate that an increase also implies a decrease in the probability that the NTCA is consulted. Nonetheless, it becomes more likely that personal sources or advisors are consulted.

These results confirm the notion that source and channel choices are interdependent. They contribute additional evidence to suggest that *source characteristics* and *relationships with sources* affect channel choices. Nonetheless, further work must be conducted to establish what types of *source characteristics* are the main influencing characteristics and to test the exact effect of *relationship characteristics* on several types of channels in more detail. Second, our data suggest that some of the influencing factors for channel choices appear to reflect the underlying source choice (e.g., *prior experiences* and some *source characteristics*). That is, we find that *prior experiences* affect channel choices but do not impact source choices. Zooming in on the effects of *prior experiences* on several types of channel choices teaches us that, depending on the type of channel choice, the direction of the effect changes. For instance, as *prior experiences* play an increasing role in the choice process, it becomes less likely that the telephone channel is selected and more likely that the website channel is chosen. An explanation for this result may be that *prior experiences* are actually based on source-channel combinations, not solely on the channel. Box 13.2 provides more insight into this result through an illustration.

Box 13.2—Illustration: How prior experiences uncover source-channel interdependency

The notion that prior experiences are based on source-channel combinations, instead of solely the channel, can be corroborated by zooming in on the NTCA and its website and telephone channels. It emerges from our data that information seekers regularly consult the NTCA as their first source. Initially, the website channel is used most frequently because negative experiences exist for the combination of NTCA and telephone. The latter is particularly suggested by our qualitative data but explains the finding of our quantitative data that the direction of the effect changes. This change seems to be not only dependent on the type of channel but also indirectly dependent on the type of source.

Keeping in mind the definitions (used in this dissertation) of the concepts of source and channel, we state that information seekers can only acquire experience with sources by transferring information via a particular channel. Accordingly, when no channel is used at all, no information is transferred between seeker and source and no experience with the source (or with the channel) is gained. This explains our finding that there is no effect that exclusively impacts source choice. Together, these results support the idea that experiences with channels are based on source-channel combinations instead of the channel being an isolated choice, thus indicating the interdependence between the selection processes for sources and channels.

A SECOND NOTION: CLUSTERED SOURCE AND CHANNEL CHOICE PROCESSES

The second notion observed in our data puts the argued difference between the selection processes of sources and channels into even greater perspective. It emerges from the data that the source and the channel can also be selected in one single action. Our findings show that information seekers often recognize no selection order, i.e., whether the source or the channel is selected first. Selecting the source and the channel seems to occur as one single action without conscious consideration or a thorough selection process. Thus, the dividing line between the selection processes of sources and channels blurs and both processes are entangled. Furthermore, our data suggest that some information seekers always use the same channel to contact a particular source. This does not automatically mean that they select only one source and one channel. Rather, it indicates that they have a fixed channel that they use for each consulted source. Therefore, it is still possible to select various sources and various channels throughout an information-seeking process.

Based on these findings, we conclude that source and channel choices can occur as a clustered choice that consists of a single action. An explanation for this finding could be that information seekers may have (extensive) experience with the use of various source-channel combinations. When these experiences have been overwhelmingly positive, in the end, they may lead to clustered choices, which are typified by quick selections without the use of conscious processes.

13.2.2 SOURCE AND CHANNEL CHOICES IN THE INFORMATION-SEEKING PROCESS

This dissertation contributes to current theories by elucidating that it is important to study source and channel choices in more real-life settings, such as information-seeking activities. We conclude that source and channel choices do not take place in an isolated context. Rather, they take place in complex and dynamic contexts such as information-

seeking processes. This section discusses those findings that provide insight into the selection processes of sources and channels in those complex contexts. These findings concern the following:

- The factors that influence the number of selected sources and chosen channels; and
- The various roles that sources and channels fulfill throughout the information-seeking process and how these are related to the influencing factors for both choices.

SOURCE-CHANNEL COMBINATIONS THROUGHOUT THE INFORMATION-SEEKING PROCESS

Our data suggest that many information seekers do not end their search processes after having selected and used a single source-channel combination. They continue their searches and select another source-channel combination. The new combination might consist of another channel and another source or another channel and the same source. Our research shows that on average, slightly fewer than two sources are consulted in a single information-seeking process. Furthermore, with respect to the first selected source, more than two channels on average are used to obtain information from that particular source. This leads to the initial conclusion that the process of seeking information about tax matters is relatively inefficient because information seekers regularly switch between different source-channel combinations. However, we do not argue that the seeking process must be reduced to a single source-channel combination to be efficient, although we do believe that it is important for information seekers to select the proper combinations in each stage of the seeking process.

The finding that information seekers use several sources and channels to obtain desired information raises the question of what underlying reasons exist to select one or more source-channel combinations (sub research question "c"). Our data suggest only two prominent influencing factors that determine the number of selected sources and channels in a single information-seeking process. The first factor is formed by task characteristics, which influence the number of sources selected. Because task characteristics play an increasingly important role, the number of selected sources also increases. The second factor concerns the effect of relationship characteristics on the number of channel choices. When a relationship plays an increasing role in the process, the number of chosen channels also increases. Box 13.3 illustrates the meaning of this pattern in the context of our research.

Box 13.3—Illustration: Seeking information about tax matters

The observed pattern in the data that information seekers (in our research context) regularly switch between source-channel combinations teaches us that (on average) the search for information about tax matters is a complex, specific, and important task. For these types of tasks, it is apparent that the relationship with a source is of growing importance to obtain the desired information via various channels.

When comparing first-selected source-channel combinations with second-selected source-channel combinations, changes in the popularity of the various combinations are observed. Whereas a certain combination was often selected in first instance, this is no longer the case in second instance. There seem to be various reasons for these switches. Information seekers frequently mention that they use a second channel for the same source to 1) obtain more (specific) information, 2) check whether the previously obtained information is correct, or 3) register the previously provided answers. This suggests not only that various source-channel combinations are selected throughout the process but also that sources and channels fulfill various roles in the information-seeking process from question to answer Box 13.4 illustrates this result.

Box 13.4—Illustration: The role of the NTCA and its website and telephone channels
That sources and channel fulfill various roles can be illustrated by focusing on one particular source: the NTCA. While the NTCA-telephone combination was seldom selected first, it became a more frequently second-selected combination (i.e., it switched from underrepresentation to overrepresentation). In addition, when the website's strong position was weakened at the second selection, the position of the written channel became more apparent.

DIFFERENT PREDICTORS FOR VARIOUS SOURCE CHOICES AND CHANNEL CHOICES ACROSS THE INFORMATION-SEEKING PROCESS

One of our goals is to determine the factors that impact the selection of information sources and communication channels and develop a generic model of source and channel choices that paves the way for an integrated theory. However, we find not only that different factors influence source and channel choices but also that there are differences between different information sources and different communication channels. This hinders the development of a generic model, as illustrated in figure 13.2. The exact differences between different information sources and different communication channels are discussed below.

Many theories that focus on media choice and information-seeking behavior argue that *task characteristics* form the main (generic) predictor for source and channel choices. However, our findings suggest that *task characteristics* do not influence all types of sources and channels because we find effects regarding the channels of the telephone and personal sources. Furthermore, we find an impact of relationship characteristics for website channels, but not for the telephone. Social influence impacts only the selection of the NTCA, but it does not impact the selection of other sources. Again, a possible explanation for these findings may be that sources and channels fulfill various roles in the information-seeking process. Box 13.5 focuses on the roles of the website and telephone channels.

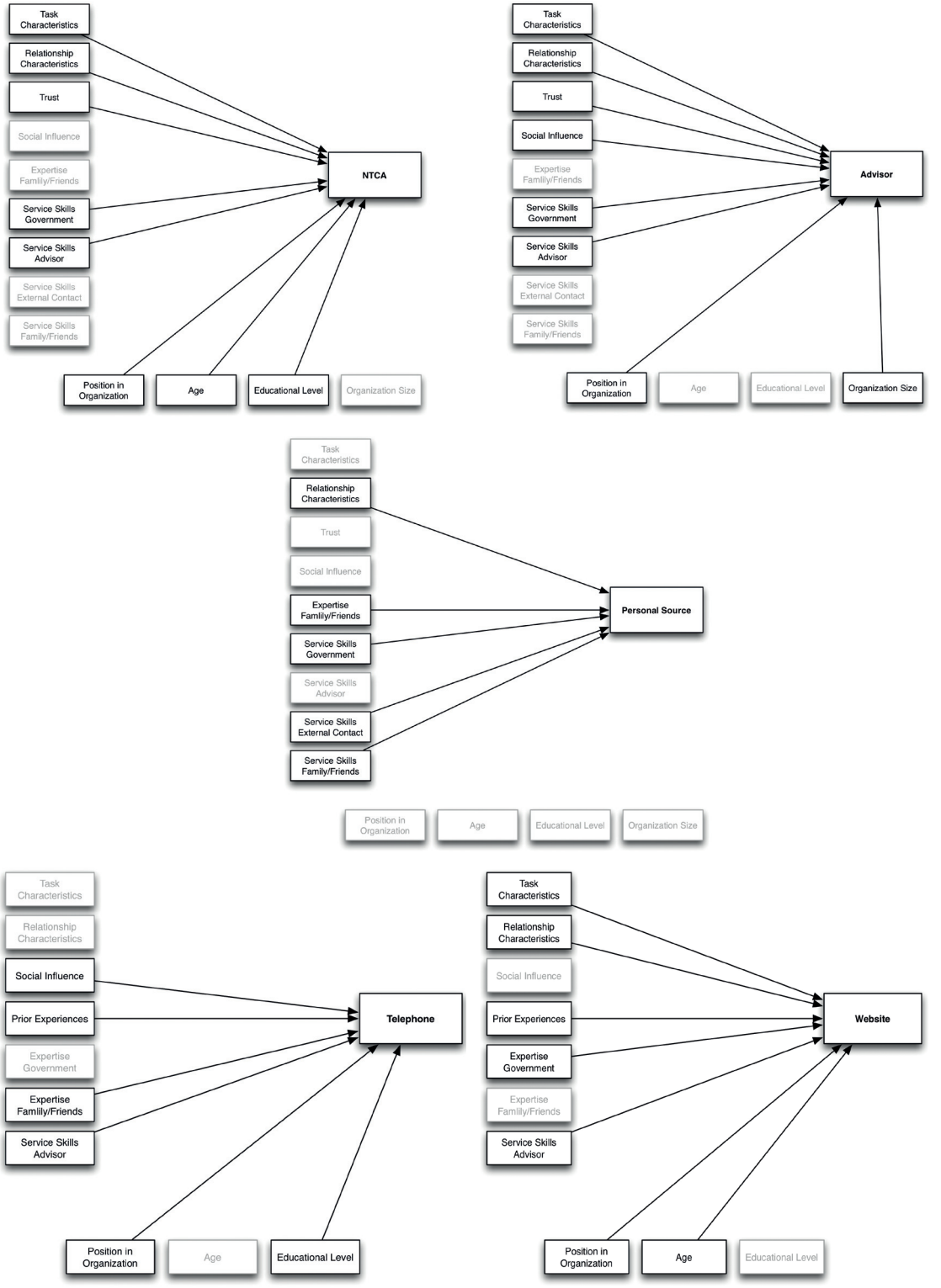

Figure 13.2 *An overview of factors that influence the selection of NTCA, advisors, and personal sources and telephone and website channels, respectively.*

Box 13.5—Illustration: Different roles for different channels

The notion that sources and channels fulfill various roles can be illustrated by focusing on findings related to website and telephone channels. Our data suggest that websites are only consulted for specific types of sources at the beginning of the seeking process, whereas the telephone is one of the most-selected channels across various types of sources. Thus, whereas some channels (e.g., websites) might be more suitable for orientation purposes, other channels (e.g., the telephone) might be relevant for a wider variety of purposes. This implies that websites are only selected for certain tasks, whereas the telephone is perceived as suitable for (almost) all tasks. Therefore, aspects other than the task seem to be more important.

Although this observation is not the focal point of this dissertation, it seems to be an important result because most extant theories and research primarily focus on generic models. Our findings underline that the differentiation between source choices and between channel choices needs more attention from future research.

CHAPTER 14

GENERAL DISCUSSION

This chapter discusses the results of this dissertation in relation to theories and empirical findings in the existing literature. It also addresses various points of discussion related to the methodological aspects of the various studies. The chapter starts with an empirical discussion (§14.1), is followed by a methodological discussion (§14.2), and ends with a theoretical discussion (§14.3).

14.1 EMPIRICAL DISCUSSION

The section addresses various points of discussion that are related to the empirical results. The first part focuses on the factors that determine the selection of sources and channels. The second part discusses how those factors contribute to the number of selected sources and channels and the various roles of sources and channels in information-seeking processes.

DIFFERENCES AND SIMILARITIES BETWEEN THE SELECTION OF SOURCES AND CHANNELS

This research elaborates on the influencing factors for selecting sources and channels in B2G interaction. We examine to what extent both choices are determined by the same underlying factors and how source and channel choices are interrelated. Although to some extent, our findings are in line with earlier theoretical and empirical findings, they also clarify, extend, and contradict some of those findings. Below, we discuss the specific findings for each included factor in our study: *task characteristics, prior experiences, situational factors, social influences, relationship characteristics, source characteristics,* and *personal* and *organizational characteristics*.

Task Characteristics

In general, our findings indicate that task characteristics play a major role in the selection processes of source and channel choices. This result generally does not divert from other research findings (e.g., Pieterson, 2009; Leckie et al., 1996; Byström & Järvelin, 1995; Sitkin et al., 1992; Fulk et al., 1990; Daft & Lengel, 1986; 1984). However, our findings contribute and extend the existing knowledge in two ways. The first contribution lies in the finding that the characteristic *task specificity* is that which particularly determines which source and which channel will be selected, whereas the task characteristics *importance* and

complexity are found to be action triggers (i.e., to start an information-seeking process). Second, we provide a relatively nuanced insight into the effect of *task characteristics.* Whereas many theorists argue that the task is a generic influencing factor, our research shows that this effect is neither significant for all types of channels nor for all types of sources. *Task characteristics* do play a role in the selection of the website channel, as do the selection of the NTCA and advisor sources. Conversely, no effect is found regarding the selection of personal sources and the telephone channel. An explanation for the latter may be the effect of habit, as discussed by Pieterson (2009). Because our findings show that the telephone is a popular channel across various types of sources, it seems plausible that people select the telephone due to habit. People tend to select a website when *task characteristics* play an important role. In such situations, a website is primarily selected for the purpose of orientation and, thus, at the beginning of the information-seeking process. This implies that the website fulfills a different role than the telephone. Similarly, our data suggest that personal sources are more often selected as second sources after the first choice and thus as second step, whereas the NTCA fulfills a prominent role as a first source and an advisor in both the first and second steps of the process. This may explain the finding that different factors can impact the selection of different sources. Nevertheless, replication and further research that focuses on the effects of these variations in sources and channels is needed to draw further conclusions.

Prior Experiences

Our results indicate that *prior experiences* do influence the selection of channels but exert no influence on the selection of sources. The effects of *prior experiences* on channel choice are described by many theorists in the realm of media choice (e.g., Pieterson, 2009; Carlson & Zmud, 1999; Fulk et al., 1990). However, the results related to source choice are more difficult to compare with the existing findings due to the interchangeable use of the concepts of source and channel (e.g., Ellis, 1989; Savolainen, 1995; Baldwin & Rice, 1997); the lack of any definitions (e.g., Wilson, 1981; 1996; Krikelas, 1983; Johnson, 2003); or the use of definitions that differ from ours (e.g., Byström & Järvelin). Moreover, the two studies (Saunders & Jones, 1990; Christensen & Bailey, 1997) that do pay specific attention to both concepts and argue that the concepts should not be confounded with each other do not study the effect of *prior experiences*. Because our study seems to be the first to notice this result, replication and further insight is needed.

Situational Factors

Somewhat surprisingly, we find no evidence at all for the role of *situational factors*, as defined in our study, on source and channel choices, although many have suggested that such

aspects do play a role (e.g., Pieterson, 2009; Byström & Järvelin, 1995; Fulk et al., 1990; Saunders & Jones, 1990). This finding is consistent for both the vignette and the model-testing parts of the study. The fact that addressing tax matters is a more 'ongoing' need for businesses than it is for citizens (i.e., citizens must fill in their tax declarations only once per year) might explain the result that *situational factors* do not exert an influence. Another explanation may be methodological in nature, and it is discussed in §14.2. Nevertheless, further work must be conducted to either confirm or reject this result.

Social Influences

Our research findings indicate that *social influences* (i.e., the opinions of others in the direct environment or social norms in the organization) have only a marginal effect on the selection processes for sources. However, with respect to channel choices, it is found that *social influences* form a generic predictor (in the model testing part of the study). The results of the vignette part of the study, however, show no effect at all of social influences, for either source or channel choice. Although the understanding and perceptions related to the vignettes were pre-tested, the lack of influence might be due to issues in the manipulation of the *social influence* factor (i.e., it might be difficult for respondents to imagine themselves in such a situation). Nevertheless, our conclusion that *social influences* have (at least) a marginal effect on channel choice seems plausible because it is in line with the findings of many others (e.g., Turner, 2006; Fulk et al., 1990; El-Shinnawy & Markus, 1998; Haythornthwaite & Wellman, 1998). The effect of *social influences* on source choice seems less studied (e.g., by Saunders & Jones, 1990), which might underline our finding that source choices are only marginally affected by *social influences* (e.g., the current study observed an effect only on NTCA selection).

Relationship Characteristics

Relationship characteristics with available sources (e.g., contact frequency or nature of relationship) affect source choices. This is initially observed in the qualitative study, and it emerges from the quantitative study as one of the most reliable predictors of the selection of sources. Several other studies have also recognized the influence of the relationships between information seekers and sources (e.g., Cross & Sproull, 2004; Haythornthwaite, 2002; Haythornthwaite & Wellman, 1998). Our study not only uncovers the effect of *relationship characteristics* on source choice but also finds that channel choices are affected. This finding demonstrates one of the interdependencies between source and channel choices. Support for this result is found in studies by Haythornthwaite and Wellman (1998) and Haythornthwaite (2002), who argue that channel choices depend on aspects such as a relationship's stage of development or mutual schedules. Sitkin et al. (1991) also present

findings related to the notion that channel choice is affected by relationship characteristics in terms of the history between seeker and source. Thus, our findings contribute to the present knowledge by elucidating the importance of adding *relationship characteristics* to the palette of factors that influence source and channel choices.

Source Characteristics

Evidence for the effect of *perceived source characteristics* on source choice was expected because the findings of many others provide evidence of this effect (e.g., Woudstra & Van den Hooff, 2008; O'Reilly, 1982; Gerstberger & Allen, 1968). Despite that evidence, the type of characteristics that have influence is subject to debate (see the methodological discussion for further elaboration). The effect of *perceived source characteristics* on channel choice, however, is less studied. So far, it seems that only Christensen and Bailey (1997) have studied the effect of source-characteristic accessibility on the selection process for channels. The current study is therefore one of the first to examine the effect of a wider variety of source characteristics on channel choices. Although the current findings indicate that some *source characteristics* predict the choice of (certain) channels, further research is needed to gain more insight into this relationship, which also reflects one of the interdependencies between the selection processes of sources and channels.

Personal and Organizational Characteristics

According to our findings, the effect of organization size on source and channel choices is only marginal. This contradicts the findings of Baldwin and Rice (1997), who argue that *organizational characteristics* (e.g., organization size and type) exert more influence than individual characteristics (e.g., age, gender, and previous working experience). They even argue that individual characteristics have no influence at all. In contrast, several studies in the context of channel-choice behavior argue that these basic *personal characteristics* (e.g., gender, age, and education) are reliable predictors (e.g., Van Dijk et al., 2007; Van Deursen & Pieterson, 2006; Van Deursen et al., 2006). The current findings show, however, that the *personal characteristics* of *age* and *education* determine the selection of some sources (e.g., the NTCA) and some channels (e.g., websites and e-mail). No effect of *gender* is found in the part of the current study that focuses on modeling. This is in line with Pieterson and Ebbers (2008) but diverges from the findings of another study by Pieterson (2009) and the findings of our own vignette study. Based on these mixed findings, it would be advisable to include these basic *personal characteristics* in future studies to obtain further clarification.

Nevertheless, our findings indicate that *the position of the information seeker in the organization* plays a major role in the selection of both sources and channels. Along

with the finding that organization size is of marginal influence, it seems obvious that the selection processes of sources and channels involve a relatively individual choice-making process, though our studies occur in the organizational context. An explanation can be found in the inclusion of only self-employed and business up to fifty employees, compared with the choices of individual citizens. In these types of businesses, back-office tasks (e.g., dealing with tax matters) receive little attention (Bergers, 2003). Our data suggest that an individual employee of such an organization may be 1) responsible for a variety of tasks or 2) a specialist responsible for tax matters. Such employees often belong to an organization's support staff and do not have colleagues in similar positions. This indicates individual choice behavior instead of collective behavior. It supports the notion of Davis (1981) that 1) Individuals within a business differ in background, experiences, perceptions and expectancies and 2) individuals react differently to situations.

SOURCE AND CHANNEL CHOICES IN THE INFORMATION-SEEKING PROCESS

This dissertation examines source and channel choices in the context of information-seeking processes. The previous section primarily focuses on the aspects that determine which sources and channels are selected. This section focuses on aspects that determine the number of selected sources and channels and the various roles that they fill throughout the information-seeking process. Its insights are contrasted with findings in the existing literature.

Our finding that *task characteristics* influence the number of selected sources in a single information-seeking process is line with Byström and Järvelin (1995). Both agree that more sources are consulted when a task is of increasing importance. Furthermore, the present findings suggest that *relationship characteristics* affect the number of channels used, which is in line with the findings of Haythornthwaite (2002). Both indicate that information seekers select an increasing number of channels when *relationship characteristics* play an increasing role.

Our study is one of the first to provide insights into the various source-channel combinations that information seekers in the B2G context use throughout the seeking process. Given the novelty of our research, it is difficult to compare our findings with those of previous studies. Nevertheless, the findings can be contrasted with previous studies regarding the sources and channels that are used in different stages of the information-seeking process. This comparison is based on the models of Kuhlthau (1991) and Byström and Järvelin (1995). Our data suggest that the website channel and the NTCA source are particularly

likely to be selected in the first instance (i.e., at the beginning of the seeking process) for orientation-related reasons. According to Byström and Järvelin (1995), these choices occur in the problem formulation phase, which corresponds to the first four stages of Kuhlthau (1991): initiation, selection, exploration, and formulation. Our findings also suggest that the source advisor is by far the most prominent second source (although it is also often selected in the first instance) for interpreting the information as it applies to the information seeker's business. This implies that this type of source is suitable for the problem-solving stages of Byström and Järvelin (1995) and Kuhlthau's (1991) stages of collection and presentation. The telephone channel seems relevant to various types of stages because the current findings show that this channel is selected as the first, second, and sometimes even third channel for consulting a source. Moreover, this channel is found to be very popular for all types of sources. With respect to personal sources, our results contrast somewhat with those of Kuhlthau (1991). She argues that debating with others about a topic takes place in the beginning of the seeking process. Assuming that these 'others' are personal sources such as colleagues, friends, and family, this finding diverges from our findings that personal sources tend to be chosen in the second instance and are chosen much less often as first sources.

14.2 METHODOLOGICAL DISCUSSION

A number of drawbacks should be noted regarding the various methods used in this dissertation. The section begins with some general methodological annotations, followed by annotations regarding the qualitative study. Subsequently, it discusses the quantitative study, which is divided into the vignette study and model testing.

SETTING AND SCOPE

Certain decisions led to discussion points related to the generalizability of our results. These decisions applied to every study reported in this dissertation. First, the decision to study source and channel choices in the context of public service delivery (in particular, the case of the NTCA, with its obligatory regulations) hinders the generalizability of the results to the private sector, where commercial services are provided.

Second, for various reasons, it was decided to focus on SMEs and therefore to study source and channel choice behavior in the context of B2G service interactions. Although the main focus of public service strategies has been on the management of channels, this dissertation shows that the source is also important. Therefore, the role of the source is new, and to implement these new insights into the citizen's context, replication of our

findings is necessary. Further, it is also questionable whether the present findings apply to larger businesses because this dissertation focuses on the theories related to individual choice behavior instead of collective choice behavior. That is, only one participant — responding as an organizational representative for tax matters— participated in our studies because it is argued that (most of) these representatives do not have colleagues with similar positions and similar expertise. Thus, purely organizational aspects such as different legal forms were not considered, although they might be important in the studied context. Consequently, further research is needed to determine 1) whether the individual-behavior approach is appropriate for these types of businesses and 2) whether purely organizational aspects play an important role. With respect to the first aspect, it is expected that this topic is very important for determining whether the focus on individual behavior is appropriate. That is, when the studied topic (e.g., software engineering) is similar to an organization's core business (e.g., a software engineering company), it is plausible that more than one employee would have expertise on this topic, which may facilitate collective-choice behavior.

Furthermore, despite our intent to study new channels such as social media and e-mail, we fail to provide insight into the underlying influencing factors for these types of channels. The underlying reason for this omission is the lack of power to develop a statistical model for these channels because too few respondents selected, for instance, social media, and e-mail as channels to obtain public information. The same difficulty occurred with respect to the analysis of personal sources. Initially, we differentiated among types of personal sources such as colleagues, family/friends, and external contacts. Later, these types of contacts were grouped together under the umbrella term 'personal sources' and analyzed using a single model. Consequently, we provide insight into only three sources (NTCA, advisors, and personal source) and two channels (websites and the telephone). This leads to internal-validity issues and issues related to the generalization of our results to other sources and channels.

Finally, notwithstanding our intent to integrate the causal and sequential aspects of source and channel choices in information-seeking processes, our results are confined to the provision of new directions for integration. Actual integration still must be performed, although we take some first steps to show the existence of source-channel interaction and provide first insights into how source and channel choices are related to information-seeking processes.

THE QUALITATIVE STUDY

The first limitation of the qualitative study is that due to its qualitative character, it is difficult to generalize its findings. This study is of an exploratory nature, which leads to

purely indicative results. The second limitation is that with regard to organization size, businesses with employees are overrepresented. This limitation was anticipated because we are especially interested in the situation of larger businesses. Accordingly, the purpose of this study is to identify indicators for source-channel interdependency and not to make observations about the entire population. A third limitation stems from the fact that the study was conducted in the Netherlands; it is thus difficult to extrapolate its results to other countries. Nevertheless, according to the identified similarities and differences in public service delivery strategies (i.e., multichannel management) among countries worldwide (OECD, 2012; United Nations, 2012), it seems plausible that the processes of channel and source choice in this context are comparable to those in other Western countries. Despite these limitations, we believe that our qualitative study offers useful insights for the design of this dissertation's quantitative studies.

THE VIGNETTE STUDY

Although the vignette method provides the opportunity to ask participants about their choices in realistic situations, a number of limitations should be noted with respect to this study. The most important limitation lies in the fact that not all (potential) predictors were manipulated and incorporated in the vignettes. As noted in chapter 9, when we included all possible factors, the number of vignettes was too large. Therefore we included a limited number of factors in our vignettes, the total number of vignettes was 32. Because we decided to include the vignettes in our main questionnaire, we had to be careful to confront each participant with only a limited number of vignettes to avoid fatigue. As shown in chapter 9, we therefore decided to present each respondent with only 4 vignettes in an incomplete block design.

Another issue that is not addressed is whether the participants wanted to consult a second source or channel because we only asked for their first source-channel combination. Although the descriptive results in chapter 10 indicate that people often use more than one source-channel combination, we believe that this study still provides useful insights because its main goal was to show interaction effects among the various variables, not to provide insight into the flow of the information-seeking process.

THE QUANTITATIVE STUDY

Operationalization of constructs

When existing measures were available, they were used and, if needed, adapted to the context of this dissertation. In the end, many measures were self-developed or strongly adapted to fit in the context or format of the questions (e.g., a Likert scale or semantic

differential). Despite the observation that the internal consistency and construct validity of most scales were often acceptable to good, there are some problematic issues. First, the final construct of *prior experiences* for source choice consisted of two items. Although the inter-item correlation was acceptable, we wished to develop better items and thus, a more valid and reliable construct.

Second, interesting differences are found when comparing the factor structures of source choice and channel choice. Whereas the source choice items on *social influence* and *relationship characteristics* each loaded on the anticipated constructs, problems were observed with these items for channel choice. That is, there were a few items with double loadings on both constructs for channel choice noticed, but these items were not problematic in the source choice model. A possible explanation for this is that social aspects such as the relationship with a source plays a more obvious role in the selection processes of sources compared with those of channels. It seems that the social aspects play a more crucial role in selecting sources and are therefore easier to distinguish from each other. For example, people are better able to explain why they chose a particular source in terms of evaluating the relationship with a source than when they have to explain the channel choice. This difference seems less surprising because information seekers enter into and maintain a relationship with a source; they do not enter into a relationship with a channel. Further, that social aspects play a role in selection processes of channels can be explained by the notion that some source-channel combinations are chosen more frequently than others. Therefore, it may be possible that perceived *relationship characteristics* are also reflected in the channel because in some situations, the dividing line between source and channels blurs. For example, when the channel website is selected, the source and the channel become very close and may therefore be perceived as the same by the information seekers.

Third, the use of a semantic differential format to measure *perceived source characteristics* leads to difficulties in analysis. The various items that were formulated were supposed to measure one overarching construct called source characteristics. However, after executing the factor analyses for each source, two factors consistently emerged from the data. One factor was labeled *perceived expertise*; the other factor was labeled perceived service skills. The problem with these labels was that the new factor of *perceived expertise* contained only two items. Moreover, the robustness tests executed in chapter 12 indicate that separating these items into two factors is not a solution because it leads to a dramatically decreased model fit. This result forced us to continue the analysis using exploratory structural equation modeling (ESEM), which is discussed in the next section. ESEM indicates that in the future, the measurement of source characteristics needs extensive further development to realize a valid and reliable construct.

Fourth, other points of discussion are related to whether the participants correctly interpreted the concepts of source and channel. We tried to explain the distinction between sources and channels as clearly as possible. During the pre-tests, the respondents were consistently asked to respond to the provided explanations of sources and channels, and adjustments were carried out when necessary. Nevertheless, it is questionable whether all respondents interpreted the concepts in the correct way because some respondents provided incorrect answers to the question 'Which sources did you consult?' Some respondents (fewer than 5%) answered that they selected the Internet channel. Participants who indicated the Internet as one of their first consulted sources were removed. A similar point of discussion concerns the aspect *importance* as *a task characteristic*. It is debatable whether this aspect is purely associated with a task because it would be plausible to also associate this aspect with the situation. That is, a task may be perceived as more important when the deadline for a particular declaration is approaching. By precisely formulating the items on *importance* we tried to avoid these types of associations; however, the possibility that participants had a different interpretation should be kept in mind.

Procedure and response rate

In total, 1218 respondents participated in the quantitative study. Given that the number of Dutch businesses with up to fifty employees is 1.2 million, the minimum number of respondents was 1067 for a confidence interval of 95%. This implies that our results can be generalized to the population; however, replication of our study in the same context is still needed.

Furthermore, the response rate of the quantitative study was quite low (6%), although this is not very surprising in light of the fact that other studies in this context report similar rates (e.g., Jansen et al., 2010; De Vos, 2008). Several reasons may explain this result. First, the participants were not panel members but instead belonged to 'real' populations in the target group. It seems plausible that the willingness to participate was lower (in percentage terms) compared with panel members who have already showed a commitment to participate in a study. Furthermore, the topic of our study is very specific, and only some employees in the invited organizations corresponded to the needed conditions.

Modeling

The previous section discusses problems related to the operationalization of the construct perceived *source characteristics*. However, another problem with this construct is worth noting. That problem concerns the semantic differential format, in which respondents judged five types of sources according to various characteristics. As a result of the factor

analyses, two factors per source emerged from the data. This led to ten new constructs because the original construct was 'shattered' into two factors. Merging these factors into one (*perceived source characteristics*) or two (*perceived expertise* and *perceived service skills*) general latent variables was not an option. Accordingly, the number of variables to be modeled increased and led to difficulties in modeling. This underlines the need for extensive further development to realize a valid and reliable construct.

Further, to anticipate issues in structural equation modeling (i.e., model complexity), we decided to analyze the construct *perceived channel characteristics* separately and thus to not include it in the entire model. The effect of *perceived channel characteristics* belongs to (the core of) many theories in the media choice literature (e.g., Daft & Lengel, 1984; 1986; Fulk et al., 1990; Pieterson, 2009). The strong evidence for the effect of *perceived channel characteristics* led to the decision to not incorporate it into the entire model. Instead, the core of the model, which involved source and channel choices and their characteristics, was studied separately from the entire model. By focusing on this, more insight is provided into the associations between these variables. Nonetheless, replication and addition of this construct is needed to realize a full model that explains all types of source and channel choices.

One of the most problematic methodological decisions concerned the inclusion of both source and channel choices as nominal dependent variables, which impeded testing the entire model at once. The inclusion of both source and channel choices was a fundamental consequence of this dissertation's main goal of studying both at the same time. In the current study, it was decided to divide the model in two: one model focused on channel choice and the other one focused on source choice. Moreover, it was decided to treat the dependent variables as dichotomous variables and develop a model for each type of source choice and each type of channel choice. In future studies, it would be useful to implement some type of ordinal solution to rank these variables (e.g., ranking channels from lean to rich), which would allow testing of an entire model that would include both source and channel choices. Another possibility is to study source-channel combinations instead of separate source and channel choices.

Another problematic methodological decision was the inclusion of many latent variables in one single model. Fundamentally, this was a consequence of the exploratory setting of the present study because its main goal was to determine which factors influence source choice and which influence channel choice. Therefore, we started our measurement-building process with EFA analyses. However, the many included variables and the many

interrelationships between the latent variables impeded proper and straightforward model building and we decided to develop a CFA framework to move on with conventional SEM. This is not an uncommon approach, according to Morin et al., (2013). However, we then observed a dramatic decrease in the fit of the structural model, while the fit of the measurement model was acceptable. Removing various relationships from the model did not lead to substantial improvement. We therefore decided to switch from (E)SEM in Mplus to a logistic regression in SPSS to come to (at least) the core predictors concerning source and channel choices. The decision to continue with SPSS, after trying to build the model in Mplus, led to several points of discussion. The first stemmed from the fact that, due to the switch to SPSS, only the most vital predictors were studied as a result of the executed logistic regression analyses. As a consequence, it was impossible to test the entire model. The second point for discussion concerned the notion that the same data were used twice. That is, after building the measurement model in Mplus and trying to fit the structural model, it was decided to switch to SPSS and build the final model with that program. All of these analyses were executed by using a single data set, which also means that the same data set was used for both exploratory and confirmatory purposes. It would have been better to complete each step with a new data set. Because the intended model of the present dissertation did not fit the data well, two options remained. The first option was to conclude that the data did not fit the model and to just stop the analysis. The second option was to use a method that would provide output and thus provide some insight into the core predictors of source and channel choices, keeping in mind the notion that the data were used twice. We decided to choose the second option, but it must be noted that replication (with other data sets) is needed to develop a more valid and reliable model of source and channel choices.

After the switch to logistic regression analysis in SPSS, it became apparent that too few respondents had selected particular types of source and channel choices. That is, there were too few positive observations (i.e., the respondent selected a certain source or channel) compared with negative observations (i.e., the respondent did not select a particular source or channel). As a consequence, only two of the seven channels that were included could be modeled. The same phenomenon was observed with respect to source choice. As a solution for the latter problem, several sources were merged together into a more general category (e.g., colleagues, family, friends, and external contacts were combined into the personal sources category). Despite this issue, it was possible to exclusively examine the selection of personal sources as the second source choice. This may have affected the results concerning the selection of personal sources because the other source choices were analyzed as the first selected sources. This notion calls for more insight into whether the

point of a source or channel's selection throughout the information-seeking process (i.e., the orientation stage or later in the process) determines which factors have influence.

A final point for the methodological discussion concerns the fact that the explained variance of the developed models is quite low. This is particularly true for the model that focused on the selection of the telephone channel: the Nagelkerke R-square reflects an explained variance of just below 10%. With respect to the website channel and all types of sources, the explained variance is between 15 and 20%, which is quite low. Therefore, there is still much to be gained, particularly because we included many variables. It is worth noting here that the various models focused solely on source or channel choice. This may have led to the low values in explained variance, given that this dissertation argues that source and channel choices are highly interdependent and can be therefore viewed as each other's predictors that account for a large part of the variance. Nevertheless, further research should be conducted to complete the variables that are of influence in this context.

14.3 THEORETICAL DISCUSSION

This dissertation focuses on a conceptual research model that incorporates both source and channel choices. A clear distinction between the concepts of source and channel is needed to examine differences and similarities between the selection processes. We therefore define source as a person or organization that stores information and from which the seeker can obtain that information (adapted from Christensen & Bailey, 1997). Channel is defined as the means by which information is transferred between source and seeker (adopted from Pieterson, 2009). These definitions are closely related to early models of communication processes (e.g., Shannon & Weaver, 1949; Berlo, 1960). This might lead to the expectation that definitions proposed in the intervening years of research are simply a continuation of the early definitions. However, theorists have proposed a wide variety of conceptualizations and definitions, particularly in the research area of information seeking, because they often incorporate both sources and channels. Most of these definitions are either unmanageable or relatively under defined. For instance, Byström and Järvelin (1995) argue that a source can change into a channel and vice versa. Leckie et al. (1996) consider a channel to be the characterizing mechanism for the type of source, without providing detailed further conceptualizations. Moreover, many others simply seem to use the terms sources and channels interchangeably without any explanation (e.g., Wilson, 1981; 1996; Krikelas, 1983; Baldwin & Rice, 1997; Johnson, 2003). We attempt to define the concepts of source and channel in a workable manner, although our definitions leave room for debate. It is nevertheless important to enter into this debate to arrive at more widely accepted and implemented conceptualizations of sources and channels.

Our studies took place in the context of B2G service interactions, which means that we focused on interactions in which information seekers took the initiative. This approach reflects a linear model of communication and limits the generalizability of our findings. However, in real-life settings the information seeker and information source continually switch roles as information is shared (Boyd, 2004). Other conceptualizations of these roles might exist in the literature. However, those other conceptualizations are not considered in this dissertation, but are nevertheless important to address in future studies.

A rather surprising pattern that emerges from our data is that differences in influencing factors exist not only between sources and channels in general but also between both various types of source choices and various types of channel choices. These findings seem to divert from many existing theories that involve relatively generic influencing factors related to generic source and/or channel choices (e.g., Pieterson, 2009; Leckie et al., 1996; Sitkin et al., 1992). The explanations for our findings are twofold: 1) these differences might occur due to the sequence of choices, and 2) differences concerning channel choices might occur because offline and online channels have different underlying factors that affect their selection processes. The first explanation reflects the notion that sources and channels fulfill different roles throughout the information-seeking process. Some theories recognize that different choices of action (i.e., source and channel choices) accompany various stages of the information-seeking process, but ignore the notion that different factors might influence these actions throughout the process (Byström & Järvelin, 1995; Kuhltau, 1991). The second explanation underlines the notion that the existing theories of source and channel choices are outdated due to the rise of new (and social) media, which also has been noted by several researchers (Ebbers et al., 2007; Neslin et al., 2006; Pieterson & Van Dijk, 2006).

Despite this chapter's mentions of the various drawbacks of our research, we believe that our results provide useful ideas for future research, along with implications for both practitioners and theorists. We discuss these implications in the next and final chapter of this dissertation.

CHAPTER 15

IMPLICATIONS FOR THEORY AND PRACTICE

Based on the findings of this dissertation, this chapter formulates implications for theory and practice. The first section (§15.1) discusses four theoretical implications. Subsequently, we introduce three main implications for practice (§15.2).

15.1 THEORETICAL IMPLICATIONS

This dissertation contributes to new research directions on source and channel choices in the domain of media choice and in the broader context of research on information-seeking behavior. Accordingly, the proposed implications are applicable to several research domains. We formulate the following four theoretical implications and discuss them below:

- Clearly separate the concepts of source and channel and start a theoretical debate about which definitions of sources and channels may be widely accepted;
- Integrate source and channel choice theories to fully understand communication processes;
- Integrate media-choice and information-seeking theories to increase our understanding of source and channel choices in information-seeking processes; and
- Replicate existing theories to test their applicability in today's communication landscape.

CLEARLY SEPARATE SOURCE AND CHANNEL

The first important theoretical contribution of this dissertation lies in its conceptualizations and findings about the differences and similarities between the selection processes for sources and channels. Although many theorists use the concepts of source and channel interchangeably and consider them to be equal, we separate the concepts and provide evidence that the selection processes for sources and channels are different. Our findings suggest that a clear analytical separation is needed to fully understand the underlying selection processes of sources and channels. This separation requires generally accepted definitions of sources and channels, not only within a single research area but also across domains. Our definitions of source and the channel were formulated through a careful analysis of the perspectives and definitions available in the media-choice domain and in the area of information seeking. Hopefully, these definitions will be useful for future research on source and channel choices.

Nevertheless, we underline the importance of starting a debate in the literature about which definitions should be widely accepted. Widely acknowledged definitions should help merge the findings and enable the elaboration of findings on one another, which may lead to a quick, strong increase in understanding. This particularly applies to theories in the information-seeking domain because they propose many different definitions of sources and channels. Some media-choice theories (e.g., the dual-capacity model and channel expansion theory) seem to include sources but pay them no explicit attention.

INTEGRATED THEORIES OF SOURCE AND CHANNEL CHOICES

The interchangeable use of the concepts of source and channel in the existing literature is understandable because our findings suggest interdependencies between both selection processes. They confirm and extend Christensen and Bailey's (1997) results, showing that there is some type of interaction between source and channel selection. Although Christensen and Bailey recognize only the effect of source accessibility on channel choice, our findings suggest that more aspects than simply the accessibility of a source trigger interdependencies between sources and channels. We find that aspects such as *prior experiences*, diverse *perceived source characteristics*, and *relationship characteristics* explain the interaction between source and channel choices. Accordingly, our findings contribute to current theories by elucidating the role of the source in the selection process of channels and the interdependency between both choice processes. This demonstrates the need for a closer integration between both the two selection processes and the two theoretical perspectives that we have incorporated. The selection processes of sources and channels have largely been treated separately in theory and research. Although media-choice theories solely focus on media choice and its influencing factors, information-seeking theories seem to pay attention primarily to source choices and less to channel choices. Thus, an integration of source and channel choice theories is needed to fully understand communication processes and increase our understanding of the interdependencies between sources and channels. At the bare minimum, sources should be added to models that predict and describe selection processes regarding channel choices and vice versa. We take the first step in integrating source and channel choices and their underlying factors, although the sequential aspect still lacks attention. This is the topic of the next section.

FURTHER INVESTIGATION OF SOURCE AND CHANNEL CHOICES IN THE DYNAMIC CONTEXT OF INFORMATION SEEKING

Another theoretical contribution of this dissertation lies in its findings about the location of source and channel choices throughout the information-seeking process. This dissertation brings to light the notion that sources and channels fulfill various roles throughout the

seeking process. Some sources and channels are usually selected as a first choice; others are more often selected later in the process. Our findings indicate that these different roles in the process accompany various predictors. Although in general we analyzed first source and channel choices, we show, for instance, that 1) differences exist between the influencing factors for the advisor versus the NTCA as first-selected sources and 2) the NTCA is mainly selected for orientation purposes early in the seeking process, while advisors seem to be primarily selected for a correct interpretation of the information that is suitable to the information seekers' specific situations. We therefore argue that it is questionable whether theories in the domains of media choice and information seeking fully address the details of source and channel choices throughout information-seeking processes. Because media choice theories primarily focus on choices in an isolated context, it is doubtful whether such theories apply to all steps (i.e., each source or channel choice) of the process. In addition because theories on information seeking explain aspects of sequence, they fail to provide insight into the underlying influencing factors that determine the flow of information-seeking processes. All of these findings highlight the need for closer integration between theories and research rooted in both domains to further investigate and extend our understanding of source and channel choices in information-seeking processes. This integration consists of combining causal and sequential aspects into single models that focus on source and channel selection. We suggest that future research go in the following directions to determine a) which factors hold influence at which stages of the information-seeking process, b) the types of sources and channels that are typical for various stages of the process, and c) the aspects that trigger information seekers to move on to the next stage.

UPDATE THEORIES IN THE CONTEXT OF NEW AND SOCIAL MEDIA

Most theories on channel choices originate from (long) before the turn of the 21st century. These theories might be outdated in light of the rise of new and social media. As already noted by various scientists (e.g., Ramirez et al., 2002; Mulgan, 2004; Boase et al., 2006; Stephens et al., 2008) the new-media revolution affects the way in which people search for information because a myriad of sources are easier to access through an increasing variety of channels. It is apparent that the new channels simply add to the present palette of service channels (Pieterson & Van Dijk, 2006). Consequently, new theories and models have been built to address the management of multiple channels (e.g., Ebbers et al., 2007; Neslin et al., 2006). With the rise of even more electronic channels such as social media, this task becomes even more complex. Thus, our study incorporates a wide variety of sources and channels to meet this challenge. Although many of the new channels (e.g., social media, SMS/Whatsapp, and e-mail) were initially involved, we are unable to provide further insights into these channels due to methodological issues. Nonetheless,

this dissertation's theoretical contribution lies in its findings about the selection of the website channel. We see that the predictors for the selection of a website are not completely similar to those of the telephone. We observe some vital differences that may imply that the influencing factors for new versus traditional media are different. That is, differences might exist between the underlying factors and perceived characteristics of offline versus online channels. Although the information source seems to be (more physically) visible to the information seeker when offline channels are used, the information source becomes less visible when online channels are used.

Therefore, we argue that it is questionable whether existing theories fully discover the factors that influence the selection processes for online channels. The same seems true for source choices. The role of sources has changed (e.g., they are less or more visible) due to the new channels. This new role is under defined, and our findings underline the importance of studying it. We therefore argue that it is important to test whether and how existing theories apply to the current information and communication landscape and its online channels. In addition, our findings indicate that different factors influence online and offline channels. They therefore underline the importance of gaining more insight into the underlying factors that influence online channels. This implies that exclusively quantitative approaches are insufficient. Qualitative approaches should be used in future research to gain a complete overview of the factors that are significant to the selection of those channels.

15.2 PRACTICAL IMPLICATIONS

One practical reason for writing this dissertation is the notion that despite implementing various types of strategies, the use of more costly public service channels is still high (e.g., Pieterson & Ebbers, 2008; OECD, 2012). Research on, for example, e-government and multichannel management, has contributed to current strategies. However, governments have failed to design effective and efficient service delivery strategies that are based on the research. We argue that a reasonable approach to tackle this issue could be to broaden the focus of current multichannel strategies by paying attention to the role of the information source related to a particular channel. The primary underlying reason for this approach is that a myriad of information sources can be coupled with an increasingly wide variety of channels through which information can be obtained. The example in box 15.1 illustrates this. All examples and illustrations are derived from the Dutch public service delivery context, specifically the NTCA. Nevertheless, their implications can be applied to other Western countries that have comparable public service delivery strategies. According to

the United Nations E-Government Survey (2012), these countries are mostly European and use separate channels as portals for their information and services.

Box 15.1—Illustration: The ease of information seeking, present versus past

Currently, it is easy to obtain information from the NTCA via the website channel, to send an e-mail to your advisor just a few minutes later, and then to quickly telephone a friend who has experience with your topic. These tasks can all be accomplished within the same hour, whereas decades or even a few years ago, it took hours or days to obtain such information (e.g., by asking the NTCA to mail a leaflet).

Before discussing these implications in more detail, it is important to mention some notions that underlie all of the implications presented in this section. First, although governments have been implementing strategies that are primarily supplier-driven, it would be advisable to develop new strategies taking a more demand-driven approach. That is, governments should take the perspective of businesses as users of information sources and service channels and study the information-seeking behavior of those businesses. Governments should determine businesses' needs, expectations, and choice behavior and incorporate them into service delivery strategies.

Second, the primarily starting point of current service delivery strategies is the channel of a single information source. However, our findings suggest that information seekers have many sources at their disposal to obtain information. This finding again calls for a change to incorporate the users' perspectives. Governments should realize that they act in a networked setting with various other potential sources from which businesses can obtain information.

Third, coordinating the various roles of information sources (not only the role of the government) would improve the efficiency and effectiveness of the service-delivery process. From a government point of view, it is nevertheless important to decide how to address these other sources (i.e., are they observed as partners, as means to communicate with businesses, or as different target groups to steer?).

Besides these notions, three main implications for future practice are formulated and discussed in this section. It would be advisable for government departments (or other types of organizations)

- to anticipate their role as information source and the position of their channels;
- to implement strategies that guide information seekers to the desired source-channel combinations using an integrated multisource and multichannel strategy; and
- to identify the role of an organization's representative to provide customized services.

ANTICIPATING THE POSITION OF SOURCES AND THEIR CHANNELS

Our findings show that employees of SMEs consult an average of two information sources and select, on average, more than two channels to obtain information from the first consulted source, all within a single information seeking process. We furthermore find that some sources and channels are more frequently selected in the first instance, whereas others are chosen later in the information-seeking process. This supports the notion that different source-channel combinations are selected in different stages in the information-seeking process and thus, fulfill various roles in the information-seeking process (from the perspective of the information seeker) or the service-delivery process (from the perspective of service provider). For example, the NTCA source and the website channel were regularly selected in the first instance. Personal sources and the face-to-face communication channel were selected later in the process.

Thus, it is advisable for governments (and other types of organizations) to anticipate the role of source-channel combinations. Governments can accomplish this by gaining an overview of relevant key sources in their network and determine their own role as one of those information sources in that network. The division of roles among the various sources should be considered when designing service delivery strategies. That is, it is important to link the role of an information source to the role of the channels that are at the disposal of that particular source. Determining the roles of sources and channels in a particular context can be accomplished by mapping the target group's information-seeking processes from question to answer. What steps do they take (i.e., which sources and channels do they select) to gain sufficient information to complete their tasks? Once insight has been derived, governments can respond in their service delivery strategies. Box 15.2 illustrates how the NTCA can cope with its role.

Box 15.2—Illustration: Implications for the NTCA website

Our findings have shown that the NTCA in combination with the website channel is primarily selected at the beginning of the information-seeking process. It would be relevant for the NTCA to consider this when developing its website. Thus, it could decide to give general information a more prominent place on the website and put more specific information in the background. Visitors are still able to obtain detailed information, but in the first instance, information overload is avoided by providing only general information. 'Decision trees' may help in structuring general and specific information. They assist visitors in selecting and finding only information that is relevant to their specific situations.

GUIDING INFORMATION SEEKERS: INTEGRATED MULTISOURCE AND MULTICHANNEL MANAGEMENT

The previous section ends with the implication to map the information-seeking process so as to determine the roles of information sources and channels. However, what if the

determined roles of an information source and its channels are not the desired ones? For example, what if the findings indicate that the NTCA is often consulted to solve specific tasks, which require interpretation because the answers differ from business to business, but the NTCA primarily offers general information? In such situations, it is important to start the debate about what role the government should fulfill. What expectations should SMEs have for public service delivery? What are the responsibilities of SMEs themselves? Because governments impose tasks (e.g., tax declarations) on SMEs, those governments should provide a minimum level of services and cannot act as commercial service providers. Only for the more specific tasks, for instance, would it be possible to expect SMEs to solve their tasks with the help of advisors (i.e., intermediaries). Debating these aspects would help governments to formulate service-delivery strategies that incorporate both their own role and the advisor's role in a networked setting. Therefore, we suggest that governments should implement strategies that guide information seekers to desired source-channel combinations, which we call multisource and multichannel management. Cross-referrals should help guide the seeker to another channel or other source-channel combinations. Box 15.3 illustrates how cross-referrals may be used in service delivery processes.

Box 15.3—Illustration: Implementing cross-referrals

The provided information on the website of the NTCA about how to change the legal form of a business is inadequate because there are many specific details to consider. The website can provide only general information that is applicable to every business (e.g., explanations of rules or declaration deadlines). The NTCA can add the simple sentence, 'If you want specific information whether changing the legal form would be appropriate for your business, please call or visit an advisory organization. There, they can help you with making a decision'. This is possible not only on the website but also from call-center employees, who can tell information seekers to obtain advice from another source or via another channel.

However, simply guiding information seekers to the website channel or the advisor for each type of task is not the solution. Certain types of tasks simply need more elaboration or interpretation and, thus, other sources and channels. Accordingly, although it sounds relatively unattractive in the first instance, it is advisable to guide information seekers to the telephone channel when necessary. It would be more effective to ensure that information seekers obtain the correct information, via (perhaps) a more costly channel, than afterwards correcting an incorrect tax declaration, for instance. To gain insight into when guiding strategies will help in a situation and when they will not, it is crucial to understand a) what aspects influence the various types of choices and b) which of these aspects are within reach of the information source to steer on. We can infer from our findings that the following aspects are within reach of the information source to steer on (to some extent): *perceived source and channel characteristics, relationship characteristics,* and *experiences*. Box 15.4 illustrates how information sources can steer on certain types of *source characteristics.*

Box 15.4—Illustration: Aspects to steer on for the NTCA

Our data suggest that the perceptions of service skills (e.g., approachability, level of involvement) of the NTCA and the advisor affect source choice. An increase in perceived level of service skills of the NTCA, leads to an increase in the probability that the NTCA will be selected. In contrast, an increase in these perceptions regarding the advisor means that it becomes less likely that the NTCA will be consulted. The same effect is observed for the probability that the website will be visited. The perceived service skills of a source are to some extent within that source's control. Thus, by fine-tuning the desired level of approachability or involvement, an information source can pull or push information seekers towards the desired source-channel combinations. For example, when the NTCA wishes to decrease telephone demand, it could try to decrease information seekers' perceptions of their service skills by communicating limited call-center hours or providing only information generated by a computerized menu that provides only limited accessibility to actual call center employees. A few years ago the NTCA did something similar by downsizing its channel desk (i.e., its face-to-face communication).

Nevertheless, solely applying the strategy of tuning those factors will not lead inexorably to the desired effects. This strategy should be combined with other strategies to strengthen (or even activate) the desired effect. Another strategy can be derived from the notion that information sources and channels fulfill various roles in the information-seeking process. After mapping the role of each source and its associated channels, it is possible to guide information seekers to the most suitable source-channel combinations. This means that information seekers are not only guided to other channels of the same source (i.e., multichannel management) but that they are also guided to (channels of) other sources (i.e., multichannel and multisource management). Therefore, strategic partnerships with other key sources in the networked setting of the service delivery process are necessary for managing strategy. These partnerships enable the use of cross-referrals between source-channel combinations along with sharing between and providing content for key sources. It is vital that the various key sources know each other's roles, agree on them, and divide up the roles consistently. Again, it is crucial to open the debate, including to intermediaries, about the various roles that must be fulfilled and what levels of service provision are necessary for governments. Consequently, this will not only optimize the efficiency of the public service delivery process for both service providers and users but also improve the quality of the provided information and therefore the accuracy of, for example, tax declarations.

ANTICIPATING THE POSITION OF INFORMATION SEEKERS IN ORGANIZATIONS

One of the most prominent factors to emerge from our findings is the *position of the information seeker in the organization*. That is, the *position of the information seeker in the organization* strongly determines which sources and channels are selected. We observe that the self-employed, managing directors in organization with employees, and (financial)

specialists regularly make different choices. For example, managing directors select advisors more often than do specialists. We observed the opposite effect for the probability that the NTCA is consulted. It also emerges from our data that when information seekers are managing directors or self-employed, the probability decreases that they will visit a website (compared to specialists), whereas managing directors use the telephone more frequently than do specialists.

The *position of the information* seeker in the organization is, according to our data, far more important than, for instance, environmental influences (e.g., others' opinions and organizational social norms). *Social influences* seem to have only a marginal influence on source and channel choices. This means that the selection of sources and channels is a relatively individual process. Knowing who is an organization's representative for dealing with, for instance, tax matters, seems quite important to the design of the public-service delivery process. One possible solution might be to store the position of organizations' contact persons in databases. Another solution might be to develop 'screening questions' that determine the position of the information seeker at the moment of contact. These strategies help provide customized information. Box 15.5 illustrates how this strategy might work in practice.

Box 15.5—Illustration: How to anticipate the position of information seekers in organizations
When a call-center employee knows who exactly is on the phone—a general manager with no knowledge of the topic or a specialist who has been hired precisely for the purpose of dealing with the topic—he or she can adapt his or her 'language' to the information seeker and provide more or less professional knowledge. Information about who is calling might be stored in a database. Another possibility would be for the call center employee to start each conversation with several 'screening questions'. At the bare minimum, call-center employees should become conscious of the fact that different types of information seekers exist, what these types are, and how to react to them.

This strategy can be applied at the website channel as well. A registered information seeker can indicate his or her position after answering the same screening questions. His or her position can be saved in a user profile, and tailored website information may be provided (e.g., a topic may be discussed in more detail for a financial specialist than for a managing director with no expertise on tax matters).

The various implications discussed in this chapter provide new directions for both theory and practice. Although some implications are more evident than others, we believe that they all can significantly contribute to a) the realization of more effective and efficient public-service delivery strategies and b) the design of studies that increase our understanding of source and channel choice processes in real-life settings.

15.3 CONCLUDING REMARKS

Over the past few decades, service interactions between governments and businesses have become increasingly complex. This complexity seems to be caused primarily by the rise of electronic channels (i.e., new and social media). The increasing number of available channels and increasing role of other information sources renders the information flow between both parties more and more complicated. Although decades ago, businesses primarily relied on government as their information source, they now turn to other sources instead, because these sources are easier to access than they were before, and they use a wider variety of channels to obtain information. Therefore, we argue in this dissertation that it is important not only to focus on managing multiple channels but also to incorporate multiple sources. This creates a networked multisource and multichannel management strategy.

Our findings indicate that source- and channel-choice processes differ from each other, and we reject the notion that sources and channels can be used as interchangeable conceptualizations. Nevertheless, we put this difference into perspective by presenting two notions. The first concerns several interdependencies between the selection processes of sources and channels (e.g., the effect of source and relationship characteristics on channel choices). The second is the notion that sources and channels may even be selected as clustered choices (i.e., in a single action). Further, we find not only that different factors influence source and channel choices but also that there are differences between different information sources and different communication channels. Although many existing theories present a generic model of choice behavior, our findings indicate that such a generic model does not exist. A possible explanation may be that sources and channels fulfill various roles in information-seeking processes. Each stage in the seeking process might have its own influencing factors. This elucidates the importance of studying source and channel choices in more real-life settings such as information seeking. Accordingly, this dissertation contributes to current knowledge by providing insights into the selection processes of both sources and channels and to pave the way for the creation of an integrated theory. Such an integrated theory would incorporate both source and channel choice and combine both causal and sequential elements.

We hope that this dissertation helps both theorists and practitioners to develop integrated theories of source and channel choices, which can describe and predict these choices in more real-life settings and may be of use for future public-service delivery strategies.

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APPENDICES

APPENDIX 1.

First EFA Solution involving Source Choice (all items included)

Nr.	Code	Item
1	SERV1	In my source choices I am guided by my previous experiences.
2	SERV2	Experiences with sources give me a grip when I need to make new choices.
3	SERV3	When I need to select a source, I take my prior experiences into account.
4	SCOMPL1	When I have a complex question I would consult another source, than in case of a simple question.
5	SCOMPL2	In my source choice I take the complexity of the question at hand into account.
6	SSPEC1	In case of a specific question I would choose another source, than when the question is rather general of nature.
7	SSPEC2	When I need to make a source choice I evaluate how specific the question is for my organization.
8	SCONS1	If the outcome can potentially have big consequences for the organization I will choose different sources, than when the consequences will be minimal.
9	SCONS2	Selecting a source partially depends on how important the question is to the organization I work for.
10	STIME1	When a question arises in the evening I will choose another source than I would during daytime.
11	STIME2	The hour of the day partially affects my source choice.
12	SDIST1	In my choice for a source I take the (physical) distance to the source into account.
13	SDIST2	I am inclined to choose a source that is close to my home, rather than a source that is further away.
14	SAVTIME1	The amount of available time I have is important to me when I need to choose a source.
15	SAVTIME2	If I have plenty of time I will consult several sources and I will take my time to consider the obtained answers.
16	SSOCIN1	In my source choice it is important to me how often I have contact with that particular source.
17	SSOCIN2	With some sources there is regularly contact, with others there is seldom contact. I take this into accountant when I need to select a source.
18	SSOCIN3	For my source choice it is important to have frequent contact with that particular source.
19	SSOCIN4	Choices and experiences of others with certain sources give me grip when I need to choose a source.
20	SFREQ1	People in my direct environment tell me how useful a particular source is.
21	SFREQ2	Opinions of others in my direct environment about sources are important to me.
22	SFREQ3	In my choice for a source I pay attention to what sources my colleagues choose
23	SCLOSE1	In my source choice I value that the source is a good friend of mine.
24	SCLOSE2	When I select a source I think it is important that the source is close to me in a personal sense.
25	SNAT1	For my source choice it is important to have a good or friendliness relationship with the source.
26	SNAT2	In my selection of a source, I appreciate having an informal relationship with a source.
27	STRUST1	Trust in sources gives me grip for selecting a source
28	STRUST2	It is important to me that I can count on a source. I take this into account in my source choice.
29	STRUST3	In my source choice it is crucial that I can rely blindly on the answer provided by my chosen source.

Note. Factor loadings >.3 are depicted in bold.

Prior Experiences	Task Characteistics	Situational Factors	Trust	Relationship Characteristics	Social Influence
F1	F2	F3	F4	F5	F6
0.052	-0.016	0.003	**0.686**	0.043	0.0106
0.657	0.084	-0.035	0.064	-0.041	0.008
0.620	-0.081	-0.003	0.148	0.020	-0.001
-0.002	**0.727**	-0.024	-0.058	0.022	0.007
0.421	**0.384**	0.077	-0.045	-0.148	0.030
-0.003	**0.748**	-0.025	-0.042	0.049	-0.087
0.064	**0.435**	0.077	-0.045	-0.148	0.030
-0.045	**0.718**	0.044	0.008	0.016	0.016
0.019	**0.649**	0.036	0.197	0.005	0.040
0.007	0.074	**0.765**	0.003	-0.007	-0.001
0.014	-0.003	**0.781**	0.009	-0.006	-0.007
0.072	0.012	0.293	0.000	0.171	0.105
-0.062	0.035	0.179	-0.034	**0409**	0.133
0.182	0.044	0.288	-0.012	0.126	0.053
-0.019	**0.422**	0.071	0.122	-0.138	0.242
0.464	0.029	-0.005	-0.083	0.032	**0.456**
0.048	0.067	-0.036	-0.005	0.200	**0.477**
0.033	-0.015	-0.003	0.147	0.049	**0.703**
-0.051	0.016	0.039	-0.003	-0.056	**0.751**
0.442	-0.021	0.165	0.007	**0.303**	-0.018
0.046	0.259	0.012	0.133	**0.414**	-0.012
0.093	0.045	-0.045	0.094	**0.666**	-0.117
-0.142	-0.005	0.089	-0.048	**0.642**	0.096
-0.008	-0.033	-0.005	0.029	**0.711**	0.021
0.240	-0.140	0.116	0.005	**0.503**	-0.013
-0.070	0.046	-0.077	-0.029	**0.650**	0.056
0.031	0.026	-0.052	**0.781**	-0.024	0.024
-0.025	0.097	-0.012	**0.770**	-0.042	-0.030
-0.062	-0.079	0.085	**0.583**	0.079	-0.052

APPENDIX 2.

First EFA Solution involving Channel Choice (all items included)

Nr.	Code	Item
1	CCONS1	The choice for a channel partially depends on how important the question is to the organization I work for.
2	CCONS2	If the outcome can potentially have big consequences for the organization I will choose another channel than I would when the consequences will be minimal.
3	CSPEC1	If the outcome can potentially have big consequences for the organization I will choose another channel than I would when the consequences will be minimal.
4	CSPEC2	If the outcome can potentially have big consequences for the organization I will choose another channel than I would when the consequences will be minimal.
5	CCOMPL1	Compared to a straightforward question, I would select a different channel for a complex question.
6	CCOMPL2	In case of difficult question I choose other channels than when I the question at hand is simple.
7	CAVTIME1	The amount of available time is important to me when I need to select a channel.
8	CAVTIME2	If I have plenty of time I will use various channels to find an answer.
9	CTIME1	When a question arises in the evening I will use another channel than I would during daytime.
10	CTIME2	The hour of the day partially affects the channel I will select.
11	CDIST1	In my channel choice I take into account that the channel can bridge a (physical) distance.
12	CDIST2	The length of the distance to bridge is important to me when I need to select a channel.
13	CSOCIN1	Opinions of others about channels are important to me.
14	CSOCIN2	In my channel choice I am guided by what is common to use within the organization.
15	CSOCIN3	In my channel choice I pay attention to which channels my colleagues choose.
16	CSOCIN4	Choices and experiences of others with certain channels give me grip when I choose a channel.
17	CCLOSE1	I am more inclined to choose a personal channel when I contact a good friend, than when I am contacting an acquaintance.
18	CCLOSE2	As I consider someone to be a good friend, it is more likely that I will choose a personal channel such as the telephone.
19	CNAT1	With some sources the relationship is more friendly, with others I maintain a pure business relationship. I take this into account when I choose a channel.
20	CNAT2	In case of a formal relationship with a source I select different channels than in the case of an informal relationship.
21	CFREQ1	With some sources there is regularly contact, with others there is seldom contact. This implicates various channel choices for me.
22	CFREQ2	In my channel choices I am guided by how frequent I have contact with a source.
23	CFREQ3	It is more likely that I choose a personal channel for a source that I contact often compared to a source that I consult rarely.
24	CERV1	In my channel choices I am guided by my previous experiences.
25	CERV2	Prior experiences with channels give me a grip when I need to make new choices.
26	CERV3	Prior experiences with channels give me a grip when I need to make new choices.

Note. Factor loadings >.3 are depicted in bold.

Task Characteristics	Rest	Situational Factors	Relationship Characteristics	Social Influence	Prior Experiences
F1	F2	F3	F4	F5	F6
0.329	**0.633**	0.038	0.005	-0.033	0.041
0.889	0.026	-0.042	-0.064	0.037	0.026
0.735	0.082	0.014	-0.039	0.107	0.018
0.213	**0.651**	-0.026	0.024	0.035	0.102
0.842	-0.031	0.049	0.034	-0.010	0.007
0.558	0.294	0.138	0.077	-0.071	-0.146
0.075	0.024	**0.425**	0.177	0.043	0.083
0.208	**0.383**	0.148	0.024	0.111	-0.002
0.112	-0.009	**0.774**	-0.016	-0.018	0.051
-0.020	0.106	**0.700**	-0.018	0.074	-0.009
-0.124	0.276	0.123	**0.403**	0.066	0.031
-0.065	0.088	**0.400**	0.293	0.087	-0.056
-0.020	0.156	-0.033	**0.319**	**0.592**	-0.043
0.063	0.072	0.049	-0.017	**0.403**	0.176
0.249	-0.043	0.012	0.007	**0.667**	0.006
0.018	-0.033	0.069	**0.336**	**0.457**	0.097
0.034	-0.183	0.297	**0.514**	-0.05	0.024
0.246	-0.194	0.041	**0.357**	0.157	0.218
0.231	0.097	0.009	**0.549**	0.034	-0.131
0.205	-0.055	0.281	**0.370**	-0.154	0.004
0.571	-0.014	-0.048	0.103	0.036	0.121
0.014	0.190	-0.049	**0.588**	0.041	0.027
-0.003	0.092	-0.131	**0.625**	-0,047	0.114
-0.028	-0.012	0.033	-0.005	0.024	**0.831**
-0.001	0.089	-0.010	0.069	0.026	**0.740**
0.060	0.025	0.008	0.023	-0.074	**0.788**

APPENDIX 3.

First EFA Solution involving Perceived Source Characteristics (all items included)

	Government		External Contact	
	Expertise	Service Skills	Expertise	Service Skills
Item	F1	F2	F3	F4
No expertise vs. Expertise	**0.947**	-0.007	**0.951**	0.002
No experience vs. Experienced	**0.911**	0.017	**0.983**	0.000
Thinks not along vs. Thinks along	0.008	**0.853**	**0.303**	**0.650**
Not involved vs. Involved	-0.161	**0.968**	0.170	**0.726**
Not accessible vs. Accessible	0.011	**0.689**	-0.056	**0.964**
Not approachable vs. Approachable	0.000	**0.761**	-0.002	**0.959**
No trust vs. Trust	0.150	**0.549**	0.157	**0.654**

Note. Factor loadings >.3 are depicted in bold.

Family/Friends		Associations		Advisors	
Expertise	Service Skills	Expertise	Service Skills	Expertise	Service Skills
F5	F6	F7	F8	F9	F10
0.942	-0.004	**0.987**	-0.013	**0.970**	-0.020
0.962	0.002	**0.876**	0.098	**0.934**	0.012
0.397	**0.519**	**0.457**	**0.483**	**0.578**	**0.309**
0.288	**0.618**	**0.334**	**0.560**	**0.361**	**0.475**
-0.001	**0.933**	-0.040	**0.942**	-0.032	**0.962**
-0.013	**0.956**	0.009	**0.929**	0.018	**0.939**
0.212	**0.500**	0.337	**0.395**	0.318	**0.426**

APPENDIX 4.

Overview of the formulated hypotheses: which are (partly) supported or rejected?

	Model testing
H_1	Perceived source characteristics, specified by level of expertise, accessibility, and involvement
H_{1a}	The extent to which a certain characteristic (level of expertise, accessibility, and involvement) is sources (government, advisor, personal sources).
H_2	Perceived channel characteristics influence the selection process of a channel to obtain
H_{2a}	The extent to which a certain characteristic (i.e., speed of answer, possibility to inform and a channel will vary across various types of channels (i.e., telephone, face-to-face Whatsapp).
H_3	The selection of sources and channels is interdependent as people choose various source-
H_{3a}	Perceived source characteristics influence the selection of a channel to obtain information from
H_{3b}	Perceived channel characteristics influence the selection of the source.
H_{3c}	Perceived source characteristics correlate with the perceived channel characteristics.
H_4	Prior experiences affect which source-channel combinations will be chosen in the future.
H_{4a}	Prior experiences with channels influence future channel choice.
H_{4b}	Prior experiences with sources influence future source choice.
H_5	Prior experiences influence perceptions of source and channel characteristics.
H_6	Perceived task characteristics, specified by complexity, specificity, and importance influence
H_7	Situational factors – in terms of distance, time, and available time – influence both channel and choice is considered to be greater.
H_8	Social influences – specified by direct statements of others, vicarious learning, and and channels.This effect is will be larger for channel choice.
H_{8a}	Social influences affect perceived source and channel characteristics.
H_9	Perceived relationship characteristics – in terms of nature, trust, and frequency of contact –
H_{10}	Perceived relationship characteristics correlates with perceived source characteristics.
H_{11}	Perceived relationship characteristics influence the selection of the channel.
H_{12}	Prior experiences influence perceptions of relationship characteristics.
H_{13}	Social influence impact perceived relationship characteristics.
H_{14}	Personal characteristics specified by gender, education, and age affect the selection of sources
H_{15}	Size of an organization affects both the selection of sources and channels.
H_{16}	Position in the organization – in terms of self–employed, managing directors, and experts –
	Information seeking process
H_{17}	Situational factors influence the length of the information seeking process in terms of the
H_{18}	Task characteristics influence the length of the information seeking process in terms of the

Note. Not analyzed: this means that these hypotheses where not analyzed in this dissertation. Initially, these were included in SEM in Mplus, but with the necessary change to Logistic Regression in SPSS we were no longer able to test these hypotheses.

	Source Choice	Channel Choice
affect the actual source choice.	Partly supported	-
assigned to a source will vary across various kinds of	Supported	-
information from a particular source.	-	Not analyzed
register, multiple cues, personalization) is assigned to communication, website, social media, e-mail, SMS,	-	Supported
channel combinations.	Supported	Supported
a particular source.	-	Partly supported
	Partly supported	-
	Partly supported	Partly supported
	Rejected	Rejected
	-	Supported
	Rejected	-
source and channel choice.	Partly supported	Partly supported
source choice, though the influence for channel	Rejected	Rejected
organizational norms – affect the selection of sources	Partly supported	Partly supported
	Not analyzed	Not analyzed
influence source choice	Supported	-
	Not analyzed	Not analyzed
	-	Partly supported
	Not analyzed	Not analyzed
	Not analyzed	Not analyzed
and channels.	Partly supported	Partly supported
	Partly supported	Rejected
influences source and channel choice.	Partly supported	Partly supported
number of chosen source-channel combinations.	Rejected	Rejected
number of chosen source-channel combinations.	Supported	Rejected

SAMENVATTING

(DUTCH SUMMARY)

Meer dan een miljoen bedrijven in Nederland moeten met regelmaat voldoen aan allerlei verplichtingen opgelegd door de overheid. Een van de bekendste voorbeelden is het omgaan met belastingzaken. Vaak is dit een complexe aangelegenheid dat vragen met zich meebrengt, bijvoorbeeld een verandering van rechtsvorm van de onderneming. Om dergelijke complexe vraagstukken op te lossen hebben bedrijven keuze uit meerdere potentiële bronnen waar zij terecht kunnen voor informatie. Het merendeel van de bronnen is gekoppeld aan een groeiend scala aan kanalen waarmee informatie kan worden verkregen. Overheden hebben in de afgelopen decennia gezocht naar passende dienstverleningsstrategieën om zowel burgers als bedrijven goed te kunnen ondersteunen bij belastingzaken. Deze strategieën hebben echter tot op heden nog niet geleid tot een veel effectievere en efficiëntere dienstverlening.

Hoofdstuk 1 schetst dat het door het toenemende aantal kanalen en bronnen voor overheden moeilijker is geworden om hoogwaardige dienstverlening te bieden. Dit proefschrift kent een praktisch en een theoretisch doel. Het praktische doel van dit proefschrift is om inzicht te geven en kennis te genereren rondom de vraag hoe en waarom bedrijven bronnen en kanalen gebruiken. Uit het eerste hoofdstuk wordt duidelijk dat beschikbare theorieën geen kant en klare inzichten bieden over bron- en kanaalkeuzes van bedrijven. Dit heeft enerzijds te maken met het gebrek aan generaliseerbare theorieën en recente onderzoeksresultaten. Anderzijds is er een gebrek aan geïntegreerde theorieën van bron- en kanaalkeuzes. Het theoretische doel van dit proefschrift is het bieden van inzicht in zowel bron- als kanaalkeuzes en om een eerste aanzet te geven voor een geïntegreerde theorie. Een dergelijke theorie helpt om overeenkomsten, verschillen en onderlinge afhankelijkheden van beide selectieprocessen in informatiezoekprocessen van ondernemers te bestuderen. De volgende onderzoeksvragen staan centraal in dit proefschrift:

Welke factoren zijn de belangrijkste voorspellers voor bron- en kanaalkeuzeprocessen in de context van bedrijf-naar-overheid service interacties?

(a) In welke mate worden bron- en kanaalkeuzes bepaald door dezelfde onderliggende factoren?
(b) Hoe relateren bron- en kanaalkeuze zich aan elkaar?
(c) Welke factoren hebben invloed op het aantal bronnen en kanalen dat wordt geselecteerd tijdens een informatiezoekproces?

Hoofdstuk 2 laat zien dat de begrippen ‘bron’ en ‘kanaal’ vaak met elkaar worden verward.. Dit maakt het aantal onderzoeken waarbij duidelijk te onderscheiden definities worden gehanteerd schaars. Daar waar wél een duidelijk onderscheid wordt gemaakt tussen de

begrippen bron en kanaal ontbreken vaak eenduidige definities van de termen. Voor een goede beantwoording van de onderzoeksvragen is een goed begrip en onderscheid echter wel noodzakelijk. In dit proefschrift wordt de bron gedefinieerd als "de persoon of organisatie die de informatie heeft opgeslagen en bij wie de informatiezoeker terecht kan voor het verkrijgen van informatie" (gebaseerd op Christensen & Bailey, 1997). Het kanaal wordt beschouwd als "het middel waarmee informatie getransporteerd kan worden tussen informatiezoeker en bron" (overgenomen van Pieterson, 2009). In dit hoofdstuk wordt ook aandacht besteed aan bron- en kanaalkeuzes in relatie tot informatiezoekprocessen. Bron- en kanaalkeuzes vinden gedurende het gehele informatiezoekproces plaats; er is geen vast moment voor tijdens het zoekproces. Vooral het soort vraag of de taak is belangrijk voor het verloop en de duur van het informatiezoekproces. Dit proefschrift adopteert het perspectief van de gebruiker. In dit geval de informatiezoeker binnen het bedrijf. Daarom ligt de nadruk op consultatie (de informatiezoeker haalt zelfstandig informatie op bij een bron) en conversatie (er is interactie tussen zoeker en bron en de bron levert informatie aan die is toegespitst op de behoeften van de zoeker) (Ebbers, Pieterson & Noordman, 2008). Verder wordt in hoofdstuk 2 de keuze beargumenteerd waarom dit proefschrift zich richt op de overheidsdienstverlening aan bedrijven (en niet aan burgers). Redenen zijn onder andere het aantal contactmomenten met de overheid, de aard van het contact en de bedrijfsgrootte.

Hoofdstuk 3 schetst de context van de bedrijf-naar-overheid service interacties. Onderzoek vanuit onder andere de e-overheid en het multichannelmanagement hebben bijgedragen aan de huidige dienstverleningsstrategieën. Deze strategieën zijn er voornamelijk op gericht om informatiezoekers naar de elektronische kanalen te leiden (bijv. de website), omdat wordt verondersteld dat deze goedkoper zijn dan de traditionele kanalen zoals de telefoon en face-to-face communicatie. Het blijkt echter minder makkelijk dan gedacht, want informatiezoekers hebben nog vaak de voorkeur voor telefonisch contact. De huidige strategieën lijken nog steeds bepaald te worden door het perspectief van de overheid en niet dat van de informatiezoekers. Inzicht vanuit het perspectief van informatiezoekers en gebruikers van overheidsservices heeft de voorkeur. Ook laat dit hoofdstuk zien dat onderzoek naar bron- en kanaalkeuze, vanuit het perspectief van bedrijven, schaars is en zich voornamelijk richt op de uitkomsten (d.w.z. welke bronnen en kanalen gekozen worden). Tot slot wordt er aandacht besteed aan de rol van andere bronnen (zoals intermediairs) in bedrijf-naar-overheid interacties. Doordat informatie niet altijd direct, maar ook indirect van de overheid naar de informatiezoeker stroomt, neemt de kans toe dat dit niet vlekkeloos verloopt. Dit kan gevolgen hebben op de kwaliteit van de informatie die uiteindelijk bij de informatiezoeker terecht komt. De rol van de informatiebron in combinatie met het gekozen kanaal wordt belangrijker. Overheden dienen rekening te houden met meerdere bronnen in het speelveld.

Hoofdstuk 4 en 5 vormen samen **deel 2** van het proefschrift en bespreken relevante theorieën over bron- en kanaalkeuze. De huidige overheidsdienstverleningsstrategieën zijn geworteld in met name de mediakeuzeliteratuur waarin het medium of kanaal centraal staat. Theorieën over kanaalkeuze worden besproken in **hoofdstuk 4**. In **hoofdstuk 5** staan theorieën centraal die verder kijken dan alleen het kanaal en meer inzicht bieden in bronkeuze. Deze theorieën blijken vaak te behoren tot literatuur over informatiezoekgedrag. Een aantal onderzoekers maakt duidelijk onderscheid tussen bron en kanaal en veronderstellen dat er onderlinge afhankelijkheden zijn tussen beide selectieprocessen, maar uitgebreide uitleg over hoe dit in zijn werk gaat ontbreekt. De theorieën uit beide hoofdstukken zijn goed voor een flink aantal factoren die (mogelijk) van invloed zijn op bron- en kanaalkeuzes van bedrijven. Voorbeelden zijn *taakeigenschappen* en *situationele factoren.* Factoren die in beide hoofdstukken werden gevonden, maar waarvan de interpretatie of uitwerking verschilt, zijn *eerdere ervaringen* en *contextuele invloeden*. De theorieën in hoofdstuk 5 nemen meer soorten contextuele invloeden mee en stellen de informatiezoeker centraal. Dit in tegenstelling tot theorieën over kanaalkeuze (hoofdstuk 4) die zich vaak beperken tot *sociale invloeden* en de uiteindelijke keuze centraal stellen. Kanaalkeuzemodellen zijn vaak causaal van aard en stellen de uiteindelijke keuze centraal, terwijl modellen over informatiezoekgedrag de nadruk leggen op de sequentiële aspecten en daarbij de informatiezoeker centraal stellen. Deel 2 sluit af met de conclusie dat de theorieën in beide hoofdstukken vrijwel identieke onderwerpen afzonderlijk van elkaar hebben bestudeerd. Hierdoor zijn er verschillen in focus en conceptualisaties van dezelfde begrippen ontstaan. Een synthese van deze theorieën uit beide domeinen is wenselijk om een realistischer beeld en beter begrip te krijgen van communicatie- en informatiezoekprocessen.

Empirische studies die de verschillende theoretische ideeën en literatuur bij elkaar brengen —en dus een dergelijke synthese uitvoeren— zijn niet voor handen. Verder ontbreekt het aan onderzoek naar bron- en kanaalkeuzegedrag in de context van bedrijf-naar-overheid service interacties. Om deze redenen is gekozen om te starten met een kwalitatief onderzoek naar hoe bedrijven informatie zoeken om zo te bepalen welke factoren van belang zijn bij het informatiezoekproces in de context van dit onderzoek. **Deel 3** beschrijft het verloop van dit eerste empirische onderzoek.

De methode wordt besproken in **hoofdstuk 6**. Er zijn zowel focusgroepdiscussies als individuele interviews gehouden met personen die verantwoordelijk zijn in hun bedrijf voor het omgaan met belastingzaken. De deelnemers werkten in bedrijven van variërende grootte; van eenmanszaken tot bedrijven met maximaal vijftig medewerkers. Deelnemers werd gevraagd hun meest recente zoekproces en het algemene patroon van hun zoekgedrag (hoe en waarom) te beschrijven

Hoofdstuk 7 beschrijft de resultaten van het kwalitatieve onderzoek. *Taakeigenschappen* en *eerdere ervaringen* met bronnen en kanalen blijken belangrijke aspecten voor keuzes in het zoekproces. *Situationele factoren* blijken vooral kanaalkeuze te beïnvloeden en minder de bronkeuze, maar de verschillen in met name de focusgroepen zijn klein. *Relatie-eigenschappen* blijken meer invloed te hebben op bronkeuze dan op kanaalkeuze. *Kanaaleigenschappen* hebben duidelijk alleen invloed op kanaalkeuze. Ditzelfde resultaat blijkt er te zijn voor *broneigenschappen*, maar wanneer we inzoomen blijken service gerelateerde eigenschappen van een bron (bijv. aanspreekbaarheid, betrokkenheid) ook kanaalkeuze te beïnvloeden. Zowel *relatie-* als *broneigenschappen* worden beschouwd als indicatoren voor de onderlinge afhankelijkheden tussen bron en kanaal. *Contextuele invloeden* waren lastiger te bestuderen in zowel de focusgroepen als de individuele interviews. Slechts enkele deelnemers deden hier expliciete uitspraken over. Een opvallend resultaat is dat *positie van de informatiezoeker in het bedrijf* (bijv. directeur of financieel specialist) bron- en kanaalkeuze lijkt te bepalen.

In **hoofdstuk 8** zijn de bevindingen uit het kwalitatieve onderzoek vergeleken met de bevindingen uit de literatuur. Dit leidt tot hypotheses en een conceptueel onderzoeksmodel voor bron- en kanaalkeuze. In dit model staan bron- en kanaalkeuze centraal met elk hun eigen determinanten.

Het conceptuele onderzoeksmodel wordt in **deel 4** getoetst aan de hand van een kwantitatief onderzoek. **Hoofdstuk 9** bespreekt de gebruikte methode. In totaal hebben 1.218 personen die verantwoordelijk waren voor de afhandeling van belastingzaken in hun bedrijf de vragenlijst volledig ingevuld. Deze respondenten waren werkzaam in bedrijven van verschillende groottes. Veel van hen waren directeur, ongeveer een vijfde had een specialistische functie in het bedrijf. De vragenlijst bestond uit verschillende delen en bevatte vragen over de achtergrondkenmerken van het bedrijf en de werknemer (meer inzicht in de context), Likert-scales en Semantisch Differentieel vragen (voor modelbouw) en scenario's (in de vorm van een vignetstudie) waarin de respondenten werden geconfronteerd met realistische situaties waarin ze zich moesten inleven.

Hoofdstuk 10 bespreekt de beschrijvende resultaten van het onderzoek. Ondernemers gebruiken gemiddeld 1.6 bronnen in een enkel zoekproces en 2.3 kanalen voor het contact met de eerst gekozen bron in datzelfde zoekproces. De Belastingdienst en de adviseur zijn de meest geraadpleegde bronnen. Telefoon, e-mail, maar ook de website en face-to-face zijn de meest gekozen kanalen. Opvallend is dat een kwart van de ondernemers vaste bron-kanaalcombinaties heeft (bijv. de Belastingdienst met de website of de adviseur met

de telefoon). Iets meer dan 40% heeft een sterke voorkeur voor bepaalde combinaties, maar switcht ook wel eens tussen kanalen om dezelfde bron te raadplegen. Bijna een derde kiest (zeer) regelmatig verschillende bron-kanaalcombinaties. De helft van de respondenten kiest de bron en het kanaal los van elkaar, en dus niet in een vaste combinatie. De andere helft maakt deze keuze juist wel meer geclusterd of gekoppeld en maakt geen bewust onderscheid tussen de beide keuzes of selectieprocessen. Verder wordt duidelijk in het hoofdstuk dat verschillende bronnen en kanalen in verschillende fases van het informatiezoekproces worden gekozen; ze blijken verschillende rollen te vervullen voor de informatiezoeker.

In **hoofdstuk 11** staan de resultaten van de vignetstudie centraal. Sommige bron-kanaal combinaties komen significant vaker voor dan anderen en andersom (bijv. de adviseur i.c.m. e-mail wordt significant vaker gekozen, de adviseur i.c.m. de website significant minder vaak). Zowel het situationele aspect *beschikbare tijd* als *sociale invloed* blijken geen significante voorspellers te zijn voor bron- en kanaalkeuze. De grootste significante voorspeller voor zowel bron- als kanaalkeuze is *specificiteit van de taak,* maar ook *complexiteit* en *belang* van de taak zijn van belang. De voorspellers kunnen verschillen per bron en kanaal. De kans neemt bijvoorbeeld toe dat de Belastingdienst als bron wordt geraadpleegd naarmate een vraag algemener van aard wordt, terwijl belangenverenigingen en vrienden worden geraadpleegd voor meer specifieke vragen. Hetzelfde patroon is gevonden voor respectievelijk het kanaal website en face-to-face communicatie. Dit benadrukt dat bron-kanaal combinaties verschillende rollen vervullen in het informatiezoekproces.

Hoofdstuk 12 beschrijft het conceptuele model van bron- en kanaalkeuze. Uit de resultaten blijkt dat er factoren zijn die een generieke invloed hebben op bron- en kanaalkeuzes. Daarnaast zijn er ook factoren die specifiek voor bepaalde bron- of kanaalkeuzes bepalend zijn. Zo blijken *eerdere ervaringen* een generieke beïnvloeder te zijn voor kanaalkeuzes, terwijl ze geen invloed hebben op bronkeuzes. *Situationele factoren* spelen geen enkele rol in zowel bron- als kanaalkeuzes. *Relatie-eigenschappen* blijken van algemeen belang voor bronkeuzes, maar beïnvloeden alleen de keuze voor het kanaal website; het heeft geen invloed op de keuze voor de telefoon. Een omgekeerd patroon is geobserveerd voor *sociale invloed,* deze is een generieke voorspeller van kanaalkeuzes, maar beïnvloedt alleen de keuze voor de adviseur als bron. *Taakeigenschappen* blijken specifieke bron- en kanaalkeuzes te beïnvloeden, zoals bijvoorbeeld de website als kanaal en de bronnen Belastingdienst en adviseur. Verschillende *gepercipieerde broneigenschappen* oefenen niet alleen invloed uit op bronkeuzes, maar ook op kanaalkeuzes. Dat laatste wel in mindere mate. *Organisatiegrootte* en *geslacht* spelen geen rol bij bron- en kanaalkeuzes. *Positie van de informatiezoeker in de organisatie* blijkt wel een cruciale rol te spelen in alle kanaalkeuzes en de meeste bronkeuzes. *Opleiding* en *leeftijd* spelen in sommige gevallen een rol.

De algemene conclusies, discussie en implicaties vormen **deel 5**. Dit is tevens ook het laatste deel van het proefschrift. In **hoofdstuk 13** komen de belangrijkste conclusies aan bod. Eén van de hoofdconclusies is dat de selectieprocessen van bronnen en kanalen van elkaar verschillen. Ze kunnen niet beschouwd worden als uitwisselbare concepten die hetzelfde beogen. Deze conclusie is niet alleen gebaseerd op de bevinding dat informatiezoekers een duidelijk onderscheid herkennen in het kiezen van een bron en een kanaal, maar ook op de bevinding dat er verschillen zijn gevonden in de factoren die kanaalkeuzes enerzijds en bronkeuzes anderzijds beïnvloeden. Dit verschil in bron- en kanaalkeuze wordt beschouwd als vertrekpunt voor de conclusies. Een van de noties die in hierbij gemaakt worden is dat er ook sprake is van interacties of onderlinge afhankelijkheden tussen beide selectieprocessen. De eerste onderlinge afhankelijkheid is te vinden in de observatie dat de bron vaak vóór het kanaal wordt gekozen en daarmee als een (gedeeltelijke) voorspeller van kanaalkeuze kan worden gezien. De resultaten laten zien dat brongerelateerde factoren (*relatie-eigenschappen* en *gepercipieerde broneigenschappen*) kanaalkeuzes beïnvloeden. De tweede onderlinge afhankelijkheid komt voort uit de bevinding dat sommige beïnvloedende factoren voor kanaalkeuze impliciet verwijzen naar de onderliggende gekozen bron (*eerdere ervaringen* en sommige *broneigenschappen*). De tweede notie is dat de bron en het kanaal ook in slechts een enkele actie kunnen worden geselecteerd; als geclusterde keuze. Deze notie is gebaseerd op de bevinding dat informatiezoekers niet altijd een volgorde herkennen in het kiezen van de bron en het kanaal, maar ook doordat er vaak vaste bron-kanaalcombinaties worden gekozen. Deze vaste combinaties kunnen ontstaan door *eerdere ervaringen* die uiteindelijk leiden tot geclusterde keuzes in plaats van twee onafhankelijke keuzes.

Andere conclusies besproken in hoofdstuk 13 gaan over bron- en kanaalkeuzes in relatie tot informatiezoekprocessen. Het onderzoek heeft laten zien dat bron-kanaal combinaties verschillende rollen spelen in zoekprocessen; bronnen en kanalen worden gebruikt voor verschillende doeleinden (bijv. oriëntatie, interpretatie, bevestiging). *Taakeigenschappen* blijken van invloed op het aantal bronnen dat informatiezoekers raadplegen in een zoekproces. *Relatie-eigenschappen* blijken van belang voor het aantal kanalen dat men kiest om contact te hebben met een bron. Tot slot wordt geconcludeerd dat er niet alleen verschillen zijn tussen de factoren die enerzijds bronkeuze en anderzijds kanaalkeuze beïnvloeden, maar dat er ook verschillen zijn tussen soorten bronnen en kanalen. Dit belemmert de ontwikkeling van een generiek model en onderstreept opnieuw de notie dat bronnen en kanalen verschillende rollen vervullen in informatiezoekprocessen.

Hoofdstuk 14 gaat in op de empirische, methodische en theoretische discussie van de onderzoeken in dit proefschrift. Het afsluitende hoofdstuk van dit proefschrift, **hoofdstuk**

15, bespreekt implicaties voor zowel praktijk als theorie. Er zijn een viertal theoretische implicaties. Allereerst is het belangrijk dat er een duidelijk onderscheid komt tussen bron en kanaal. Een theoretisch debat is nodig voor eenduidige, algemeen geaccepteerde definities van beide concepten. Ten tweede is het van belang dat theorieën gericht op enerzijds kanaalkeuze en anderzijds bronkeuze geïntegreerd worden voor een beter begrip van communicatieprocessen. Daarnaast wordt beargumenteerd dat mediakeuzetheorieën en informatiezoektheorieën bij elkaar moeten worden gebracht voor meer kennis en inzicht in bron- en kanaalkeuzes in informatiezoekprocessen. Tot slot is het waardevol om bestaande theorieën, die veelal gedateerd zijn, te toetsen in het huidige communicatielandschap.

Dan zijn er ook praktische implicaties in hoofdstuk 15, die ondersteund worden door een aantal algemene noties. De eerste notie is dat het belangrijk is voor overheden om te switchen van perspectief en bij de ontwikkeling van nieuwe dienstverleningsstrategieën sterk rekening te houden met het perspectief van de vraagkant (d.w.z. bedrijven als zijnde gebruikers van dienstverlening). Daarnaast is het van belang dat overheden beseffen dat zij slechts één informatiebron zijn in een netwerk van meerdere potentiële informatiebronnen waar bedrijven informatie kunnen verkrijgen. Het is verstandig om in te spelen op de verschillende rollen die de informatiebronnen vervullen, daarom is het belangrijk voor overheden om te beslissen hoe zij aankijken tegen deze andere bronnen (bijv. worden ze als partners gezien, of als een middel om te communiceren met bedrijven, of als verschillende doelgroepen waarop gestuurd moet worden?).

Naast deze noties zijn er een drietal specifieke praktische implicaties. Als eerste implicatie wordt beargumenteerd dat voor een efficiëntere en effectievere overheidsdienstverlening en een verbeterd informatiezoekproces voor bedrijven, het is zinvol om rekening te houden met de rolverdeling van bronnen in combinatie met de kanalen. *Bijvoorbeeld*: het onderzoek laat zien dat het kanaal website in combinatie met de bron Belastingdienst vooral aan het begin van het zoekproces is geraadpleegd. De Belastingdienst kan hierop inspelen door algemene informatie (ter oriëntatie) prominent te plaatsen op de website. De tweede implicatie borduurt voort op de eerste implicatie, want wat als de geconstateerde rol van een bron of kanaal niet de gewenste rol is? Dit proefschrift beargumenteert dat een ‘multichannel en multisource aanpak’ ingevoerd kan worden. Hierbij verwijzen bronnen en kanalen naar elkaar waardoor informatiezoekers naar de passende bronnen en kanalen worden geleidt. *Bijvoorbeeld*: de Belastingdienst kan informatiezoekers die specifieke informatie willen op hun website doorverwijzen met de zin ‘voor specifieke informatie raden wij u aan om (de adviseur) te bellen’. De derde en laatste praktische implicatie gaat in op de bevinding dat het belangrijk is om te weten wat de functie van de informatiezoeker in een bedrijf is. Dit aspect blijkt van

groot belang voor bron- en kanaalkeuzes en is een kans voor overheden om de dienstverlening efficiënter en effectiever in te richten. *Bijvoorbeeld:* Overheden kunnen de functie vaststellen door 'screening-vragen' te stellen wanneer men bijvoorbeeld via het kanaal telefoon contact opneemt. De callcenter medewerker kan dan zijn of haar 'taal' aanpassen op degene aan de telefoon, dit komt ten goede aan de informatie-uitwisseling tussen bron en informatiezoeker.

Met deze praktische en theoretische implicaties eindigt dit proefschrift. Hopelijk stimuleert dit proefschrift zowel de wetenschap als de praktijk in de ontwikkeling van een geïntegreerde theorie van bron- en kanaalkeuzes die bruikbaar is voor de ontwikkeling van toekomstige overheidsdienstverleningsstrategieën.

DANKWOORD

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Maar dit was stiekem toch wel een mooie kans, het onderwerp en de praktische inbedding lagen precies in mijn straatje, wat nu? Na alle voors en tegens op een rij te hebben gezet en wat discussies met vrienden en familie later raakte ik meer en meer ervan overtuigd dat ik de uitdaging aan moest gaan. Maar dan zou ik wel het liefst beginnen nádat ik een reis zou hebben gemaakt, daar had ik nou eenmaal mijn zinnen op gezet. Gelukkig werd me dat gegund en na een mooie reis van een paar maanden door Nepal en India startte ik op 1 januari 2011 met, wat ik nu achteraf weet, een van de grootste uitdagingen in mijn leven tot nu toe. Heb ik er spijt van? Nee, absoluut niet, maar zonder de hulp en steun van anderen was ik er niet gekomen, dat kan ik wel met zekerheid stellen.

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