

Self-determination and expectancy-value: comparison of cognitive psychological approaches to motivators for information seeking about job opportunities

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Purpose - This article elaborates the picture of the motivators for information seeking by comparing two cognitive psychological approaches to motivation: self-determination theory (SDT) and expectancy-value theories (EVTs).

Design/methodology/approach - The study draws on the conceptual analysis of 31 key investigations characterizing the nature of the above theories. Their potential is examined in light of an illustrative example of seeking information about job opportunities.

Findings - SDT approaches motivation by examining the degree to which one can make volitional choices while meeting the needs of autonomy and competence. Information-seeking behaviour is most volitional when it is driven by intrinsic motivation, while such behaviours driven by extrinsic motivation and amotivation are less volitional. Modern EVTs approach the motivators for information seeking by examining the individual's beliefs related to intrinsic enjoyment, attainment value, utility value and relative cost of information seeking. Both theories provide useful alternatives to traditional concepts such as information need in the study of the motivators for information seeking.

Research limitations/implications - As the study focusses on two cognitive psychological theories, the findings cannot be generalized to all categories relevant to the characterization of triggers and drivers of information seeking.

Originality/value - Drawing on the comparison of two cognitive psychological theories, the study goes beyond traditional research approaches of information behaviour research confined to the analysis of information needs.

Keywords: Information seeking; Motivation; Self-Determination Theory; Expectancy-Value theories; Job searching; Theories of motivation

Article Classification: Research paper

Introduction

Since the 1960s, the motivators for information seeking have been examined under diverse labels such as *information need* (Wilson, 1981), *anomalous state of knowledge* (ASK) (Belkin *et al.*, 1982), *gap* (Dervin, 1983), and *uncertainty* (Kuhlthau, 1993). Of the above constructs, information need, uncertainty and gap are most popular among the researchers of information seeking, while the concept of ASK is mainly employed in the context of information retrieval research. Overall, the factors triggering and driving information seeking have remained a largely neglected topic in library and information science (LIS). Most analytic attention has been paid to the construct of information need (Case and Given, 2016, pp. 79-91; Cole, 2012). Savolainen (2017) found that LIS researchers have conceptualized information need as a primary factor giving an initial impetus to information seeking. Information need has also been

approached as a summary category describing the informational requirements of problem solving and work task performance. On the other hand, the above study revealed that the conceptualizations of information need tend to remain silent about fundamental questions such as how and why does information need trigger and drive information seeking? This suggests that the research perspective on the motivators for information seeking should be broadened by going beyond traditional concepts such as information need.

So far, LIS researchers have seldom made use of the potential of motivation theories developed in other fields, most notably psychology (see, however, Dubnjakovic, 2017; Shoham and Kaufman Strauss, 2008; Sigaard and Skov, 2015). The present study is inspired by the belief that the picture of the motivators for information seeking can be enriched by drawing on cognitive psychological theories of motivation in particular. Often, such theories are validated empirically by decades-long series of investigations focusing on diverse study groups. The main research task of the present investigation is to examine the potential of two approaches to motivation developed in cognitive psychology: *self-determination theory* (SDT) (Deci and Ryan, 1985) and *expectancy-value theories* (EVTs) (Wigfield *et al.*, 2009). These approaches provide alternative explanations of why people engage in behaviour of diverse kinds. In brief, SDT proposes that the triggering factors originate from the degree to which one can make volitional choices while meeting the needs of autonomy, competence, and relatedness. EVT suggests that the triggering factors are constituted by one's beliefs about his or her ability to perform a task at hand in relation to the expected utility value of the outcome of task performance.

The above theories were chosen for review for two major reasons. First, these approaches are acknowledged as major theories of motivation (Petri, 2010; Weiner, 2010). Second, SDT and EVT are particularly relevant for the study of the motivators for information seeking because these approaches assume that human behaviour is directed by the active processing and interpretation of information (Petri and Govern, 2004, p. 248). The comparative approach adopted in the present study is expected to result in a more multifaceted picture of the motivators for information seeking because previous investigations have concentrated on only one motivation theory such as SDT (e.g., Lee and Lin, 2016) or EVT (e.g., Sigaard and Skov, 2015). Overall, the present study is inspired by the idea that a review explaining and comparing multiple theories will encourage a more nuanced understanding of motivational principles, and will facilitate additional research (Cook and Artino, 2016).

So far, cognitive psychological theories have been employed in the study of learning motivation in particular. However, we may claim that the ideas of learning motivation are relevant in the study of the motivators for information seeking, too. This argument can be supported by drawing on the idea that learning and information seeking are closely related and partially overlapping processes since both of them share the same goal: to change one's state of knowledge. According to Marchionini (1995, pp. 8-9), information seeking can be approached as a type of learning, even though the processes are not identical. Learning demands retention while in the case of information seeking, the information may be used for a task at hand and then left behind, when the task performance is being carried out. Due to this close relationship, however, it is evident both activities can be driven by similar motivational factors.

The present author has reviewed the potential of psychological theories in earlier studies of motivators for information seeking by focusing on EVT (Savolainen, 2012) and attribution theories (Savolainen, 2013). In addition, the ideas of SDT were applied in an empirical study examining the ways in which the unemployed

people seek information about job opportunities (Savolainen, 2008). The present investigation adds value to the above investigations by comparing the strengths and limitations of SDT and EVT's as approaches to motivators for information seeking. To put the research task in a more focused context, the potential of SDT and EVT's will be examined by discussing an illustrative example of the motivators for seeking information about job opportunities.

This subject area was chosen due to two main reasons. First, an extensive review of earlier research revealed that so far, seeking information about jobs is the only issue of information behaviour research that has so far been examined from the perspective of both SDT and EVT's (e.g., Vansteenkiste *et al.*, 2005). For example, there are numerous studies approaching learning motivation from the viewpoints of the above theories (e.g., Chen and Jang, 2010; Gorges and Kandler, 2012); however, there are no comparable investigations of the motivators for learning-related information seeking departing from the assumptions of SDT and EVT's. Second, typically, job searching exemplifies an information-intensive activity which can be motivated by internal as well as external factors examined by SDT and EVT's. Overall, seeking information about job opportunities incorporates diverse activities such as monitoring jobs available through the Internet, contacting potential employers, asking friends and acquaintances for assistance, writing job applications and participating in personal job interviews (Fountain, 2005; Granowetter, 1973; Perttilä and Ek, 2010). This suggests that information seeking about jobs is a central constituent of job searching. In fact, it is difficult to imagine job searching that would not draw on information seeking of some kind.

The article is structured as follows. First, to provide background, research approaches to human motivation are briefly characterized, followed by an introductory review of SDT and EVT's. Then, the research design will be specified, followed by the report of the findings. The article ends with the discussion of the main results and their significance for information behavior research.

Background

Approaches to motivation research

Motivation is a complex and multidimensional construct constituted by intrinsic (internal) and extrinsic (external) factors such as beliefs, subjective values and norm expectations. There exists no integrative theory of motivation; psychologists have developed several dozens of models and theories characterizing the nature of motivational factors (Petri, 2010; Petri and Govern, 2004). In addition to EVT's and SDT, the major research approaches to motivation include the attribution theory (Weiner, 2010), social-cognitive theory (Bandura, 1997) and goal orientation (or achievement goal) theories (for an overview, see Cook and Artino, 2016).

In general, motivation deals with how goal-directed behavior gets started, is energized, sustained and stopped (Gollwitzer *et al.*, 2000, p. 198). Motivation is a process which is focused on a goal; motivation deals with both the initiation and the continuation of activity directed at achieving that goal (Cook and Artino, 2016, p. 998). According to Eccles and Wigfield (2002, p. 110), modern theories of motivation focus on the relation of beliefs, values, and goals with action. These theories also discuss the extent to which motives result from internal needs and/or external goals, rewards and incentives. Behavioural psychologists have stressed the importance of external goals in prompting action, while cognitive psychologists assume that human behaviour is directed as a result of the active processing and interpretation of information (Petri and Govern, 2004, p. 248). Importantly, cognitive psychologists examine motivation

resulting from the expectation of future events, choices among alternatives, and attributions concerning outcomes. Due to this focus, the theories of cognitive motivation such as SDT and EVT are particularly relevant for the present study.

Self-determination theory

SDT has been developed since the 1980s as a general theoretical approach to human motivation concerned with the development and functioning of personality within social contexts (Deci and Ryan, 1985; Ryan and Deci, 2000). SDT examines motivation from the perspective of individuals’ inherent growth tendencies and their innate (universal) psychological needs, more specifically, the need for competence, relatedness and autonomy. More specifically, the *need for competence* involves understanding how to attain various external and internal outcomes and being efficacious in performing the requisite actions. The *need for relatedness* involves developing secure and satisfying connections with others in one's social milieu, while the *need for autonomy* refers to being self-initiating and self-regulating of one's own actions (Deci *et al.*, 1991, p. 327). The need for autonomy is the universal urge to be causal agents of our own life and act in harmony with our integrated self (Ryan and Deci, 2000, p. 231).

SDT focuses on the degree to which human behaviour is volitional or self-determined; that is, the degree to which people endorse their actions at the highest level of reflection and engage in the actions with a full sense of choice. Eccles and Wigfield (2002, p. 112) aptly characterize SDT as a theory focused on the "reasons for engagement". One of the fundamental assumptions about the nature of such reasons is that people seek out optimal stimulation and challenging activities and find these activities intrinsically motivating because they have a basic need for competence. Deci and Ryan (1985) distinguish between different types of motivation based on the different reasons or goals that give rise to behaviour (see Table I).

Motivation	Amotivation			Extrinsic			Intrinsic
Regulatory style	non-regulation	external regulation	introjected regulation	identified regulation	integrated regulation	integrated regulation	intrinsic regulation

Table I. Motivation types and their regulatory styles as per SDT (Stenius *et al.*, 2016, p. 184).

As Table I suggests, SDT makes the most basic distinction between *intrinsic motivation* and *extrinsic motivation*. The former refers to reasons by which something is done because it is inherently interesting or enjoyable. Intrinsic motivation is maintained only when actors feel competent and self-determined. Interpersonal events and structures (e.g., rewards) that conduce toward feelings of competence during action can enhance intrinsic motivation for that action because they allow satisfaction of the basic psychological need for competence (Deci and Ryan, 1985). In contrast, *extrinsic motivation* refers to reasons by which something is done because it leads to a separable outcome and is instrumental to some consequence that is separable from the activity itself (Vansteenkiste *et al.*, 2004, p. 346). Extrinsic motivation involves engaging in an activity because people feel pressured or forced to do so by some external or internal force. In this case, an individual complies either with the demands of others or with some partially internalized demands that are buttressed by threats of guilt or self-esteem contingencies.

”Extrinsic” is, however, not a single quality of motivation because it can be divided into four sub-types of differing regulatory styles (Deci and Ryan, 2000; Ryan and Deci, 2000; Stenius *et al.*, 2016, p. 184). A behaviour is *externally* motivated when it is performed to gain an external reward or to avoid something undesirable such as criticism from colleagues. *Introjected* motivation implies that a behaviour is performed for internal self-worth-related pressures, pride or shame. In this case, the regulation has been partially internalised but not accepted as a personal goal.

SDT assumes that external and introjected regulation results in *controlled motivation*, while regulation of other types gives rise to *autonomous motivation*. Autonomous types of extrinsic motivation reflect differing degrees of internalization of the goals of a behaviour. This means that a behaviour is performed for reasons extrinsic to the behaviour, but these reasons reflect neither material or social benefits nor self-worth-related concerns, but genuinely valued and personally important goals that cast a sense of importance to the behaviour. *Identified* motivation suggests that the external pressure has become a personally important self-desired goal, but the goal is valued because it is useful rather than because it is inherently desirable. Finally, *integrated* motivation implies that the goals are so deeply internalized that they are even aligned with an individual’s personal value system.

As Table I illustrates, autonomous motivation contains the types of identified, integrated and intrinsic motivation types, whereas introjected and external are forms of controlled motivation interests, becoming part of one's personal identity and aspirations. Therefore, regulatory forces with identified and integrated regulation reflect an internal locus of causality (control) and behaviours are perceived as largely autonomous or self-determined, whereas both external and introjected regulation reflect an external locus of causality. Sometimes, however, the explaining factor of action may be *amotivation*, that is, lack of intention and motivation (Deci and Ryan, 1985). People tend to be amotivated for a behaviour if they believe that it will not yield desired outcomes. Characteristic of amotivated behaviour is that it is performed in a “half-hearted” way and that the actors tend to feel helpless.

Even though diverse types of motivation can be separated analytically, SDT argues that intrinsic and extrinsic motivation should not be conceived abstractly as opposite poles of a continuum (Ratelle *et al.*, 2007, p. 735). Depending on the activity and its domain, for example, studying medicine or running a hobby, individuals can variously endorse both intrinsic and extrinsic motivations (Dubnjakovic, 2016, p. 1038). SDT also devotes attention to the situational factors affecting motivation (Ambrose and Kulik, 1999, pp. 253-254). The aspects of a situation, for example, *social pressure from the family to find a new job* that meets one’s level of education, may lead the individual to question the true causes of his or her information-seeking behaviour. If these individuals attribute their behaviour to the situational factors, the shift from internal causes to external causes results in a decrease in intrinsic motivation. Therefore, SDT emphasizes that situational variables are only problematic if they are perceived by the person as controlling his or her behaviour (Deci and Ryan, 1985).

Expectancy-value theories

Different from SDT, EVT's do not approach human motivation by departing from assumptions about the existence of universal needs. EVT's relate an individual's strength of motivation to strive for a certain goal to the expectations to attain the desired goal and the incentive value or valence of that particular goal, for example, finding a job (Vansteenkiste *et al.*, 2005, p. 270).

The basic ideas of EVT were developed in the 1950s and 1960s. Early contributions include Vroom's (1964) theory suggesting that motivation is a function of three constructs: expectancy, instrumentality, and valence. *Expectancy* is a momentary belief followed by a particular outcome (Vroom, 1964). The range of expectancy can be from zero to one. *Instrumentality* is the person's perception of the probability that performance will lead to a specific outcome. Finally, *valence* is defined as "affective orientations toward particular outcomes" (Vroom, 1964, p. 15). Vroom hypothesized that all three of these factors influence motivation in a multiplicative fashion. Thus, if even one of these factors has value zero, for example, positive expectancy of getting employed is completely lacking, the person will have no motivation for seeking information about job opportunities, even though his or her beliefs about instrumentality and valence of information seeking would be high.

Early EVT have been criticized for their overly rationalistic and mechanistic assumptions about the ways in which people approach problem solving and decision-making in everyday situations (Steel and König, 2006). People do not necessarily make calculations to identify an optimal combination of expectancy, instrumentality and valence; rather, they satisfice to find a good enough solution. To avoid rationalistic bias, modern EVT have further elaborated the expectancy and value components by devoting attention to affective and contextual factors, too. It is assumed that even a highly valued goal may not generate much behaviour if the expectancy of successfully reaching the goal is very small. Therefore, individuals will be motivated to engage in a behaviour if they value the outcome and expect that their effort to achieve the outcome has a reasonable chance of success (Petri and Govern, 2004, p. 273). This suggests that expectancy of success is more than a perception of general competence; it represents a future-oriented conviction that one can accomplish the anticipated task (Cook and Artino, 2016, p. 1000).

As detailed in the findings section, modern EVT assume that expectancy of success is shaped by motivational beliefs that fall into three broad categories: goals, self-concept and subjective task value (Eccles and Wigfield, 2002). Goals refer to specific short- and long-term objectives of behaviour. Self-concept refers to general impressions about one's capacity in a task domain such as job seeking. Finally, subjective task value is constituted by diverse components indicating the enjoyment the individual gets from performing the activity, perceived relevance of engaging in a task and relative costs involved, for example, the amount of effort needed to succeed in task performance.

Research questions

The introductory review of SDT and EVT suggest that as generic approaches to human motivation, these theories hold remarkable potential for the elaboration of the picture of motivators for information seeking. As noted above, the potential of SDT and EVT will be examined in more concrete terms in the context of seeking information about jobs opportunities. To examine the above issue, the study addresses the following research questions:

- RQ1. In which ways do SDT and EVT conceptualize the motivators for seeking information about job opportunities?
- RQ2. What are the main similarities and differences of SDT and EVT as approaches to motivators for seeking information of this kind?
- RQ3. What are strengths and limitations of the above theories in the study of the motivators for information seeking of this type?

Research material and analysis

To answer the above questions, a considerable number of studies were examined by means of conceptual analysis. Research literature was identified by searching four major databases: Ebsco Academic Search Premier, Google Scholar, Library and Information Science Abstracts and Scopus. Search terms used in the study were the following: expectancy-value, expectancy-value theory, self-determination, self-determination theory, motivation, information, information seeking, job seeking and job searching. As a result, about 2200 investigations reviewing SDT and nearly 300 studies characterizing EVTs were identified. Most SDT and EVTs studies appeared to irrelevant for the present investigation because they were unrelated to the issues of information behaviour. The rest of the research material was further narrowed down by focusing on studies which examine information seeking from the perspective of SDT and/or EVTs. The final sample thus defined included 31 articles or books. The sample is quite small, indicating that researchers have seldom scrutinised the triggers and drivers of information seeking from the perspective of SDT and EVTs. Nevertheless, the sample appeared to be sufficient to provide a detailed picture of these theories and the ways in which they have been used to conceptualize the triggers and drivers of information seeking. As to SDT, the key studies included the empirical investigations conducted by Vansteenkiste *et al.* (2004) and Savolainen (2008), while the analysis of EVTs concentrated on the studies of Eccles and Wigfield (2002) and Vansteenkiste *et al.* (2005). The investigations subjected to conceptual analysis are included in the list of references.

Conceptual analysis can be defined as an approach that treats the components of the study objects as classes of objects, events, properties, or relationships (Furner, 2004). The analysis involves defining the meaning of a concept and its attributes by identifying and specifying the contexts in which it is classified under the concept in question. To conduct the conceptual analysis, relevant text portions (paragraphs and sentences) characterizing the constructs of self-determination and expectancy-value as factors triggering and driving information seeking were first identified from the research material. Relevant expressions or terms indicating such factors include, for example, *intrinsic motivation*, *amotivation*, *efficacy-expectation*, and *utility value*.

The conceptual analysis was started by a careful reading of the 31 studies included in the final sample. Thereafter, the conceptual analysis was conducted by focusing on the ways in which researchers have defined the main components of SDT and EVTs, as well as their relationships. The results of this analysis were presented above in the section introducing SDT and EVTs. Since the main emphasis of the conceptual analysis was placed on the conceptualization of the motivators for information seeking, no attempts were made to compare in detail the conceptualizations of individual components of SDT (e.g., extrinsic motivation) and EVTs (e.g., instrumentality) to identify the degree to which they match. This is because the constructs of these theories draw on different terminologies and are thus not directly comparable. Therefore, at the first phase, the conceptual analysis was made on a general level by approaching SDT and EVTs as constellations of diverse components relevant to the characterization of human motivation.

The conceptual analysis was then refined by focusing on the conceptualizations of motivators for information seeking. To compare SDT and EVTs in greater detail, the study made use of an illustrative example dealing with motivators

for seeking information about job opportunities. This example is not arbitrarily chosen because it makes use of my earlier study based on the interviews with eighteen unemployed people (Savolainen, 2008). More precisely, this study examined the potential of SDT in the investigation of the triggers and drivers of information seeking about job opportunities. In addition, useful material for the illustrative example was obtained from two empirical studies examining job search behaviour among unemployed people (Vansteenkiste *et al.*, 2004; Vansteenkiste *et al.*, 2005). These two investigations are directly relevant because they compare the empirical applicability of SDT and EVTs to the study of job searching behaviour. Moreover, useful material was obtained from my study comparing the construct of task-based information need and the expectancy-value model proposed by Eccles and Wigfield (2002) as approaches to motivators for information (Savolainen, 2012). These investigations were scrutinized by concentrating on how they conceptualize the triggers and drivers of information seeking about job opportunities from the perspectives of SDT and/or EVTs. The main emphasis was laid on the identification of similarities and differences of such conceptualizations. The analysis was continued until no novel aspects could be identified from the research material. The results of the analysis will be presented in the next section.

Findings: SDT and EVTs as approaches to motivators for seeking information about job opportunities

Self-determination theory

So far, the most detailed SDT study examining the motivators for seeking information about job opportunities has been conducted by Maarten Vansteenkiste and his associates (2004). In fact, their study focused on *job search behavior*; terms such as information seeking about jobs were not used in the above investigation. However, the empirical findings suggest that job searching was primarily understood as an activity focused on seeking information about jobs. The empirical data were gathered from 273 unemployed adults by questionnaires containing 44 items that represented intrinsic, extrinsic and amotivational reasons for searching (or not searching) for a job. Intrinsic motivation included items such as "I find it fun to look around on the job market". Extrinsic motivation was exemplified by reasons such as "it is my duty as an unemployed person to do so" (Vansteenkiste *et al.*, 2004, pp. 349-350). Finally, amotivation was described by reasons like "I'm not really looking for a job because I do not feel competent to find employment". The study showed that intrinsic motivation positively predicted the job search intensity and persistence, while amotivated people did some searching in a disaffected way (Vansteenkiste *et al.*, 2004, p 360).

More recently, Savolainen (2008) used the ideas of SDT in a study examining the unemployed people's motivations to seek information about jobs. The empirical data were gathered by interviewing eighteen unemployed persons. Similar to the study of Vansteenkiste *et al.* (2004), the types of motivation were examined by focusing on intrinsic motivation, extrinsic motivation and amotivation. The findings indicate that information seeking drawing on intrinsic motivation is experienced as interesting and spontaneously enjoyable because it is driven by personal interests and curiosity. Information seeking about job opportunities was also driven by extrinsic motivation. Unemployed people seek information to meet the needs of complying with internal demands and external requirements such as role expectations of others. Emotionally, information seeking of this kind is negatively oriented since individuals

do not act spontaneously but to meet the moral obligations. On the other hand, information seeking driven by extrinsic motivation is often associated with forced preference to consult experts such as officials at the employment office. Thus, the manoeuvring space of information seekers driven by extrinsic motivation may be narrower than those drawing on intrinsic motivation. Finally, information seeking driven by amotivation appeared to be constrained by a number of personal and structural factors. "Half-hearted" motivation of this kind is especially characteristic of the long-term unemployed people and aged job seekers; amotivation is associated with beliefs of insufficiency of one's work life qualifications. Overall, amotivation implies pessimism and feelings of helplessness because the information seekers repeatedly encounter disappointments.

The empirical studies discussed above indicate both strengths and limitations of SDT as an approach to the motivators for information seeking. One of the strengths of SDT is that the structure of theory is relatively simple. The main components of SDT, that is, intrinsic motivation, extrinsic motivation, and amotivation provide an easily accessible picture of the triggers and drivers of information seeking. SDT also draws attention to the contextual qualifiers of motivation: the degree to which information seeking is driven by various forms of motivation is dependent on the nature of factors such as social pressure coming from one's family. Moreover, SDT provides a credible explanation of how the reasons for engaging in information seeking are dependent on the degree of volition of such behaviour, based on the ways in which an individual is able to meet her needs for competence and autonomy in particular.

The study conducted by Savolainen (2008) indicated that the main limitation of applying SDT in empirical research is the general nature of the theory. An exact operational definition of the types of motivation appeared to be a demanding task. In particular, there are no definite criteria by which to draw a boundary line between the adjacent categories of intrinsic motivation and autonomous types of extrinsic motivation. Moreover, because it was not possible to differentiate reliably diverse sub-types of extrinsic motivation with regard to the nature of regulation styles, extrinsic motivation was examined as one category. Nevertheless, we may speculate that in some cases information seeking about jobs may be explained by the construct of introjected motivation - a sub-type of extrinsic motivation. In this case, information seeking is motivated by internal self-worth-related pressures to find a job that meets one's level of education, for example. Moreover, it is possible that information seeking is driven by identified motivation. In this case, the external pressure to find a job has become a personally important self-desired goal, but the goal is valued because it is useful rather than because it is inherently desirable. Finally, integrated motivation implies that goals such as these are so deeply internalized that they are even aligned with an individual's personal value system. As noted above, extrinsic motivation of this type comes so close to intrinsic motivation that they can be separated only analytically.

On the other hand, the empirical findings suggested that information seeking about job opportunities is not driven by purely intrinsic or extrinsic motivation. More generally, human behaviour is triggered and driven to some extent by both intrinsic and extrinsic motivation, and sometimes also by amotivation, depending on the nature of contextual factors. This conclusion is in line with the findings of a survey of the types of learning motivation among Canadian high school students (Ratelle *et al.*, 2007). Three distinct motivational profiles were identified: (i) students with high levels of both extrinsic motivation and amotivation but low levels of intrinsic motivation; (ii) those with high levels of both intrinsic and extrinsic motivations but

low levels of amotivation; and (iii) those with moderate levels of both intrinsic and extrinsic motivations but low levels of amotivation.

Expectancy-value theories

What new could EVT add to the picture of the motivators for information seeking provided by SDT? So far, the ideas of EVTs have seldom been used in the study of information behaviour. EVTs have been far more popular in the field of education and learning (e.g., Gorges and Kandler, 2012; Wigfield *et al.*, 2009) and communication studies (e.g., Cooper *et al.*, 2001). Given the assumption that EVTs can be applied to the whole range of human behaviour, they may also be utilized in the study of the motivators for information seeking.

One of the best examples of the application EVTs to the study of motivators for information seeking is provided by Vansteenkiste and his associates (2005). Interestingly, the above investigation also compared the potential of SDT and EVTs as research approaches to people's job search behaviour. As to EVTs, the study relates an individual's strength of motivation to strive for a certain goal to the expectations to attain the desired goal and the incentive value of that particular goal, e.g., finding a job (Vansteenkiste *et al.*, 2005, p. 270). Fourteen items assessed the degree to which people valued having a job; the items measuring this issue included, for example, "People need to work in order to be part of society" and "I find it personally important to find a job" (Vansteenkiste *et al.*, 2005, pp. 275-276). Moreover, three items were used to assess people's expectations about finding a job: "I am optimistic about finding a job in the near future"; "I don't expect to find a job in the near future" and "I have been rejected so many times during application interviews that I don't expect to find a job any longer" (Vansteenkiste *et al.*, 2005, p. 276).

The above study elaborated the concept of expectancy by differentiating *efficacy-expectations* and *outcome expectations*. Drawing on the ideas of Bandura (1997, p. 193), *efficacy-expectations* are defined as the conviction that one can successfully execute the required behaviour to produce the outcomes, while *outcome expectations* refer to a person's estimate that a given behaviour will lead to certain outcomes (Vansteenkiste *et al.*, 2005, pp. 271-272). For example, an unemployed person could have a strong expectation that she would perform well while seeking information from the employment office, thereby meeting the main requirement for successful performance, and she might also hold the expectation that succeeding in information seeking would yield positive consequences, such as being engaged for the job. Thus, an unemployed person with a high expectation of finding relevant information about employment may search information more intensively when compared with an unemployed person with a lower expectation. Finally, Vansteenkiste and his associates (2005) defined *value* by referring to the person's needs that are considered to be determinants of motivated action through their effects on valences. Thus, the intensity of seeking information about job opportunities will be positively related to how much finding a job is valued, i.e., has positive valence.

The empirical findings revealed that as predicted, the value unemployed people attach to having a job was a positive predictor of past job search behaviour. However, job search behaviour was negatively related to expectancy and unrelated to the product of expectancy by employment value (Vansteenkiste *et al.*, 2005, p. 281). This may be due to that people who are confident about finding a job might (temporarily) give priority to alternative activities in their lives (e.g., taking care of the household) before looking for a new job (Vansteenkiste *et al.*, 2004). Second, as

Vansteenkiste and associates (2005, p. 281) speculated, people's high expectations might be due to the fact that there are plenty of jobs available on the job market; therefore, one does not have to engage in a frequent search for them.

Perhaps the most sophisticated version of the modern EVT is provided by the model developed by Jacquelynne Eccles and Allan Wigfield (2002, pp. 118-121; see also Wigfield, 1994; Wigfield and Eccles 2000; Wigfield *et al.*, 2009). The model is based on a series of empirical studies on learning motivation, more specifically, the social-psychological influences on choice and persistence among children and adolescents. The expectancies for success are defined as individuals' beliefs about how well they will do on upcoming learning tasks, either in the immediate or long-term future and ability beliefs as beliefs about how good one is in task performance.

To examine the potential of the above approach, the original model (Eccles and Wigfield, 2002, p. 119) was modified for the needs of the present study by replacing the illustrative examples of learning motivation with a discussion of the triggers and drivers of information seeking about job opportunities. A similar approach was used in my earlier study in which the characterizations of learning processes were replaced by examples depicting work task-related information seeking (Savolainen, 2012). As explained above, this approach can be justified by drawing on Marchionini's (1995, p. 8) idea about the close relationship between the motivators for learning and information seeking. Furthermore, the component of *expectations of success* examined by Eccles and Wigfield (2002) was specified by differentiating between *efficacy-expectations* and *outcome expectations*, similar to the study of Vansteenkiste *et al.* (2005). The modified version of the model is presented in Figure 1.

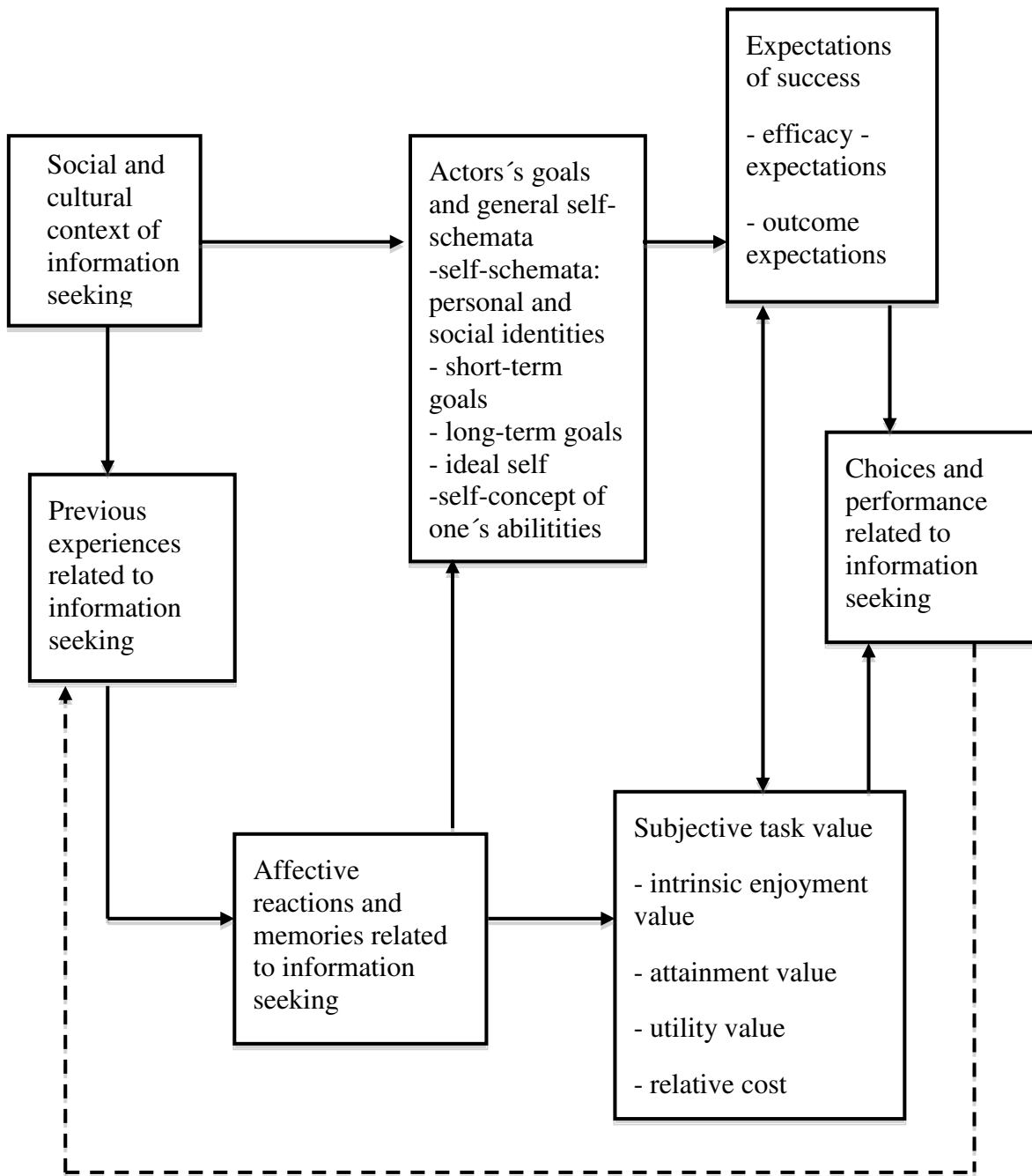


Figure 1

Figure. 1. Expectancy-value model of the motivators for information seeking (adopted from Eccles and Wigfield, 2002, p. 119).

Figure 1 suggests that the choices and performance related to information seeking are influenced by a complex set of individual and contextual factors. In the case of seeking information about jobs, such choices and performance are indirectly affected by the factors constitutive of the social and cultural context of information seeking, for example, the social norms and role expectations of a community where an unemployed person lives. Second, the choices and performance are indirectly affected by his or her experiences about information seeking about jobs. Often, these experiences manifest themselves as positive or negative affective reactions and memories related to information seeking. For example, they may originate from the contacts with the officers at the employment office as potential sources of information. Third, an individual's goals and general self-schemata may affect the choices and performance related to information seeking about job opportunities. Self-schemata refer to the unemployed individual's personal and social identities or her competence in various domains. Ability beliefs are conceived as broad beliefs about competence in a given domain, in contrast to one's expectancies for success on a specific upcoming information-seeking task. In addition, short-term and long-term goals in seeking employment may influence the expectations of success in information seeking and through it, the actual choices of information sources. Finally, the model has cyclic features in that the choices and performance related to information seeking can affect the ways in which the individual interprets his previous experiences of accessing of information sources of various types.

From the perspective of motivators for information seeking about jobs, the most intriguing components of the above model can be found by looking at the factors constitutive of expectancy-value beliefs, that is, *expectations of success* and *subjective task value*. This is because these factors are assumed to influence directly to how an individual starts seeking for information and continues this activity. *Efficacy-expectations* indicate the conviction that one can successfully execute the required behaviour, for example, to be able to identify a contact person within a company by conducting a web search. In turn, *outcome expectations* refer to a person's estimate that a given behaviour will lead to certain outcomes, for example, calling the contact person will result in obtaining useful information about the job opportunities within the company. Expectations of success are also affected by the subjective task value. As demonstrated by Figure 1 above, Eccles and Wigfield (2002, pp. 119-120) identified four main factors constitutive of this motivational component: 1) intrinsic enjoyment value (or intrinsic interest value), 2) attainment value, 3) utility value, and 4) relative cost.

Intrinsic value is the enjoyment the individual gets from performing the activity or the subjective interest he or she has in the object of information seeking, for example, browsing the website of an international company hiring new employees. *Attainment value* is defined as the personal importance of doing well the information-seeking task. In addition, attainment value is linked to the relevance of engaging in a task for confirming or disconfirming salient aspects of one's self-schemata, because tasks provide the opportunity to demonstrate aspects of one's actual or ideal self-schemata, such as competence in identifying relevant information about job opportunities in the websites of business enterprises. Thus, tasks will have higher attainment value to the extent that they allow the individual to confirm salient aspects of these self-schemata. *Utility value* is determined by how well an information-seeking task relates to current and future goals, such as performing a web search to identify job opportunities. Such a task can have positive value to a person because it facilitates important future goals, even if he or she is not interested in the information-seeking

task for its own sake. Most importantly, utility value relates to an individual's internalized short-term and long-term goals to get employed. Finally, *relative cost* is a critical component of value. Cost is conceptualized in terms of the negative aspects of engaging in an information-seeking task, such as fear of failure in directly contacting the manager of a company by e-mail. Cost may also include the amount of effort needed to succeed in this task and the lost opportunities that result from accessing this particular information source rather than another, for example, calling a contact person providing information about job opportunities within the same company.

Compared to SDT, the model developed by Eccles and Wigfield (2002) provides a more sophisticated framework for a contextualist examination of the motivators for information seeking. The components of the model are specified clearly and their interrelationships are depicted in sufficient detail. One of the strengths of the model is that it has been validated by a series of empirical studies focusing on learning motivation. Due to the close relationship between learning and information seeking, the model can also be used to elaborate the motivators for information seeking. It is evident that the analysis of the main components, that is, efficacy-expectations, outcome expectations, intrinsic enjoyment value, attainment value, utility value, and relative cost enables the drawing of a credible and sufficiently detailed picture of the factors triggering and driving information seeking.

On the other hand, EVT's are not without limitations. Early theories (e.g., Vroom 1964) suffered from overly rationalistic assumptions of the actors as decision-makers. Consequently, such EVT's may be most applicable to situations where people do rational decision-making by accessing a limited number of information sources providing facts about a well-defined issue, for example, computer skills required for a specific job in an enterprise. Modern EVT's are constituted by a number of individual components, as illustrated by Figure 1 above. Naturally, the attempt to use such models in the whole results in complex empirical settings since the number of variables and their relationships is quite high.

Eccles and Wigfield (2002, p. 122) also remind that modern EVT's can be criticized for emphasizing the rational cognitive processes leading to motivation and behaviour. Often, the logical, rational decision-making processes of determining expectancies and valences are not used because people prefer simpler, but more fallible and optimistic, decision-making strategies. This issue is significant because task values are linked to more stable self-schemata and identity constructs; thus, one's choices are not necessarily the result of conscious rational decision-making processes but they may draw on habits and satisficing. By including affective memories and identity-related constructs as part of the theoretical system, less rational processes can also be included to explain motivated behavioural choices.

Discussion

SDT and EVT's are established cognitive psychological approaches to motivation. The present study reviewed the potential of SDT and EVT's in the examination of the triggers and drivers of information seeking. The main findings are summarized in Table II below.

	Self-determination theory	Expectancy-value theories
Main components of the theories relevant to the analysis of motivators for information seeking (RQ1)	<p>Innate (universal) needs for</p> <ul style="list-style-type: none"> - competence - relatedness - autonomy <p>Intrinsic motivation</p> <ul style="list-style-type: none"> - intrinsic regulation <p>Extrinsic motivation</p> <ul style="list-style-type: none"> - external regulation - introjected regulation - identified regulation - integrated regulation <p>Amotivation</p>	<p>Subjective task value</p> <ul style="list-style-type: none"> - intrinsic enjoyment or interest value - attainment value - utility value - relative cost <p>Efficacy-expectation</p> <p>Outcome expectation</p>
Main similarities (RQ2)	<p>Human cognition is assumed to exert powerful motivational controls</p> <p>Particular attention to the significance of intrinsic factors:</p> <ul style="list-style-type: none"> - SDT: intrinsic motivation tends to result in the most enduring engagement with action - EVT: intrinsic enjoyment is a major constituent of human motivation 	
Main differences (RQ2)	<p>More emphasis on universal needs as relatively stable sources of human motivation: information seeking is “pushed” by needs internalized in the personality system</p> <p>The construct of amotivation as a negation of positive types of motivation, i.e., intrinsic and extrinsic motivation</p> <p>Less attention to the interactions between the constituents (types) of motivation</p>	<p>More emphasis on an individual’s situation-specific judgments about how to succeed in an action: information seeking is “pulled” by success expectations</p> <p>No particular attention to factors explaining why people choose not engage in action</p> <p>More dynamic approach to the interactions of factors constitutive of motivation, due to feedback loops depicted in model proposed by Eccles and Wigfield (2002; see Figure 1 above)</p>
Strengths (RQ3)	Clearly structured theory with three main forms of motivation explaining the reasons by which people engage in information seeking	Modern EVT’s enable the drawing of detailed empirical picture of the factors triggering and driving information seeking

Table II. The comparison of SDT and EVT’s as approaches to motivators for information seeking about jobs.

The first research question asked: in which ways do SDT and EVT’s conceptualize the motivators for seeking information about job opportunities? As Table II indicates, these theories exhibit a variety of components explaining why people engage in information seeking of this type. According to SDT, an individual’s willingness to engage in information seeking depends on the ways in which he or she

can meet the needs of competence and autonomy in particular. SDT also acknowledges the significance of regulatory styles affecting the ways in which external and intrinsic factors shape human motivation. Moreover, the construct of amotivation makes it intelligible why people choose not to engage in a behavior or behave in a “half-hearted” way. Empirical studies conducted by Savolainen (2008) and Vansteenkiste *et al.* (2004) showed that people are most likely to engage in information seeking about job opportunities if it is triggered and driven by intrinsic motivation. Information is sought because the activity is inherently interesting or enjoyable; in this case, the individual experiences satisfaction of the needs for competence and autonomy in particular. In contrast, if an individual is extrinsically motivated, he or she engages less likely in information seeking. This is because it is found instrumental to some consequence that is separable from the activity itself. Extrinsic motivation also involves engaging in information seeking because an individual feels pressured or forced to do so by some external or internal force.

Modern EVT's suggest that the nature of motivation depends most strongly on the value of expected outcome of information seeking in relation to the expectation of success. The more strongly one believes that he or she one can successfully execute the required behaviour and that it produces the expected outcome, the more willing he or she is to engage in information seeking about job opportunities. The motivation is further strengthened if he or she believes that the information-seeking task will provide intrinsic enjoyment, the attainment of the goal of this task supports his or her self-schemata as a skillful information seeker, information seeking results in positive outcome, and the relative cost of information seeking remains low.

The second research question dealt with the main similarities and differences of SDT and EVT's as approaches to motivators for information seeking. There are some intriguing overlaps in SDT and EVT's, even though they come from distinct theoretical perspectives and so have different intellectual roots (Wigfield and Eccles, 2000, p. 73). Both theories acknowledge human cognition as influencing perceptions and exerting powerful motivational controls. Both approaches therefore devote particular attention to the significance of intrinsic factors. SDT emphasizes the role of intrinsic motivation, while modern EVT's draw attention to the importance of intrinsic enjoyment or interest value as a source of meaningful behaviour. In addition, EVT's associate attainment value to intrinsic motivation.

The main difference between the theories can be found in the conceptualization of the fundamental factors of motivation. SDT stresses the importance of universal needs for competence, relatedness and autonomy, suggesting that the main motivational forces reside in such needs internalized in the personality system. This suggests that SDT's approach to motivation is causally oriented: primary motivating forces originate from one's needs that should be met in to satisfy an individual's inherent growth tendencies. Thus, universal needs of this kind appear as factors that metaphorically speaking “push” information-seeking behaviour. In comparison, EVT's are characterized by a teleological approach because these theories emphasize more strongly how subjective expectations about how to succeed in a future situation “pull” information-seeking behaviour. Different from EVT's, SDT devotes more attention to factors constitutive of amotivation. Even though both theories characterize the role of extrinsic motivation, it is coloured somewhat negatively in SDT because the existence of extrinsic motivation indicates that the needs for autonomy and competence are not fully met. EVT's approach the issues of extrinsic motivation more neutrally in terms of utility value and relative cost. Utility value captures extrinsic reasons for engaging in information-seeking task; it is not done for its own sake but to

reach some desired end state, for example, finding a better paid job. The assessment of relative cost also serves the ends of judging the utility value since the weighing of cost and benefits incorporates a kind of “pain vs. gain” analysis of information seeking. Finally, it is evident that modern EVT – for example, the model proposed Eccles and Wigfield (2002) depicted in Figure 1 above - provide a more dynamic picture of the interactions of factors constitutive of motivation. This is because more detailed attention is devoted to motivation as an ongoing process with feedback loops between diverse constituents, rather than depicting diverse types of motivation in a continuum of extrinsic versus intrinsic motivation characteristic of SDT.

The third research question focused on the strengths and limitations of SDT and EVTs in the study of the motivators for information seeking about job opportunities. One of the strengths of SDT is that the theory is clearly structured into main categories. Modern EVTs are incorporate a number of constituents enabling a detailed empirical picture of the factors triggering and driving information seeking. SDT and EVTs are fairly robust because they have been validated empirically in the context learning in particular. Given that information seeking is closely related to learning, it is evident that SDT and EVTs are valid in the study for the motivators for information seeking, too.

However, these approaches are not without limitations. The number of components constitutive of modern EVTs is quite high. This makes it difficult to apply these theories *in toto* in empirical research on the motivators for information seeking. For example, even though the four components of subjective task value are distinguishable from one another in measurement, it is not yet known whether learners (or information seekers) make these distinctions in practice (Cook and Artino, 2016, p. 1002). The main types of motivation identified by SDT, i.e., intrinsic motivation, extrinsic motivation and amotivation are fairly general in nature. Therefore, the exact operationalization of such categories is not without difficulties because the above types of motivation are usually mixed and seldom appear purely. For example, intrinsic and identified motivation may operate in a complementary fashion; empirical studies have revealed that integrated motivation is difficult to operationalize distinctively from identified motivation (Stenius *et al.*, 2016, p. 185). As Eccles and Wigfield (2002) remind, similar to Bandura’s (1997) self-efficacy theory, modern expectancy-value theories can be criticised for emphasising the rational cognitive processes leading to motivation and behaviour. Often, the logical, rational decision-making processes of determining expectancies and valences are not used because people prefer simpler, but more fallible and optimistic, decision-making strategies.

This issue is significant because task values are linked to more stable self-schemata and identity constructs; thus, one's choices are not necessarily the result of conscious rational decision-making processes. By including affective memories and identity-related constructs as part of the theoretical system, as suggested by Eccles and Wigfield (2002) (see Wigfield *et al.*, 2008), less rational processes can be included in EVTs to explain motivated behavioural choices. This is well founded from a more broader perspective because information seeking is not always a rational problem-solving or task-based process; information may also be sought out of curiosity or to meet hedonic needs such as entertainment, leisure time, and emotional comfort (Fulton, 2009; Laplante and Downie, 2011). However, so far, the applicability of SDT and EVTs is limited in domains such as these because these theories give only a secondary role to the affective motivators for information seeking.

Conclusion

SDT and EVT provide novel perspectives to the study of the motivators for information seeking. As Cook and Artino (2016, p. 1012) have aptly characterized diverse approaches to motivation, “each theory shines light on a different region of a larger picture, and thus contributes a unique perspective on a complex phenomenon”. This is for SDT and EVTs, too. The comparison of these theories suggests that the categories of SDT operate on a higher level of generality than those of EVTs. Therefore, SDT may be preferred if the study aims at obtaining an overall picture of the reasons for which individuals engage in seeking information about a topic or issue, driven by varying combinations of intrinsic and extrinsic motivation, and amotivation. Modern EVTs enable the drawing of a more detailed and contextually richer picture of the motivators for information seeking. This is because EVTs relate efficacy-expectations and outcome expectations to intrinsic enjoyment value, attainment value, utility value and relative cost, mirrored against the previous experiences of information seeking and self-schemata of the actors.

On the other hand, SDT and self-efficacy theory (Bandura, 1997) are closely aligned because they are based on the assumption that humans are agents of their actions, specifically regarding their autonomously motivated actions. If one feels autonomous in their actions, the likelihood of behaviour enactment and sustainability is greater, making self-determined motivation the main element of the actor. However, as Sweet *et al.* (2012, p. 320) have pointed out, SDT and self-efficacy theory differ in that in SDT, the concept of competence/self-efficacy is a more distal factor to behaviour because it is hypothesised to have a direct relationship with self-determined motivation rather than behaviour. In contrast, self-efficacy has a direct influence on behaviour, making it a more proximal factor in self-efficacy theory (Sweet *et al.*, 2012, p. 320). Despite differing views on the nature and role of self-efficacy, it is evident that the construct of self-efficacy holds a significant potential as a factor explaining human motivation from the perspective of both SDT and EVTs. This suggests that the elaboration of the construct of self-efficacy may even provide opportunities to integrate SDT and EVTs as social cognitive theories of motivation.

The present study is limited in that the focus was placed on two cognitive psychological theories and that their potential was illustrated by taking an example of a particular task, that is, seeking information about jobs. Further research is needed to compare SDT and EVTs against other research approaches such as attribution theory and goal achievement theory (Cook and Artino, 2016). Overall, the findings of the present study suggest that compared to relatively vague constructs such as information need, EVTs and SDT can substantially deepen our understanding about the factors that trigger and drive human information seeking. However, additional research is required to specify the overall picture provided by the present study. Empirical studies testing the applicability of the above theories would be particularly important because they provide opportunities to identify their strengths and limitations in more detail. Studies of this kind would also be helpful to find out whether EVTs and SDT could be integrated in explaining the seeking information behaviour. Finally, such studies are also intriguing because they would help in assessing the relevance of the motivational constructs developed in LIS: information need, anomalous state of knowledge and uncertainty, for example.

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