

# The association between decision-making skills and subjective decision outcomes among administrative officers in the Swedish Social Insurance Agency

Martin Geisler<sup>1</sup>  | Carl Martin Allwood<sup>1</sup>  | Ilkka Salo<sup>2</sup> 

<sup>1</sup>Department of Psychology, University of Gothenburg, Gothenburg, Sweden

<sup>2</sup>Department of Psychology, Lund University, Lund, Sweden

## Correspondence

Martin Geisler, Department of Psychology, University of Gothenburg, Haraldsgatan 1, Box 500, 405 30, Gothenburg, Sweden.  
Email: martin.geisler@psy.gu.se

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## Abstract

Social insurance administrative officers' decision-making skills influence their efficiency at work and their general well-being. At work their tasks are characterised by complexity and a need for order and accountability. Moreover, cases should usually be handled and finalised within the imposed time frames. We investigated skills related to decision-making success among social insurance officers. In total, 118 administrative officers at the Swedish Social Insurance Agency (66% response rate) responded to questions on scales and measures relating to cognitive-rational, socio-emotional and time approach features of decision-making skill. In addition, they responded to questions on three scales pertaining to outcomes of everyday decisions in terms of subjective everyday difficulties, tendencies to burnout and depressive symptoms. The results showed that cognitive-rational competence was associated with lower reports of subjective everyday difficulties and depressive symptoms and thereby contributed to the explained variance in decision outcomes. Furthermore, socio-emotional and time approach features of decision-making skills contributed to the explanation for subjective everyday difficulties, tendencies to burnout and depressive symptoms. The results corroborate the basic assumption and usefulness of a broad approach in the definition and assessment of decision-making skills in human service professions in general, and of administrative officers in social insurance agencies in particular. Recommendations for future research and the implications of the results are discussed.

## KEYWORDS

burnout, decision making, decision quality, decision-making competence, depression, socio-emotional orientation, time approach

## 1 | INTRODUCTION

A well-functioning social insurance agency is vital in modern societies and is to a significant degree dependent on the decision-making

skills of the administrative officers. Such skills are likely to influence administrative officers' work efficiency and general well-being. Therefore, it is important to investigate the association between decision-making skills and indicators of successful decision-making

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among administrative officers. The aim of the present study was to investigate this issue, with the purpose to provide novel insights that may contribute to guide recommendations, or design interventions, aiming to improve administrative officers' decision-making. In a sample of administrative officers employed within the Swedish Social Insurance Agency, we investigated three features of the administrative officers' decision-making skills (i.e. cognitive-rational, socio-emotional and time management skills) in relation to three indicators of decision-making outcome (i.e. daily hassles, tendencies to burnout and depression).

## 1.1 | Decision-making of administrative officers in the Swedish Social Insurance Agency

Although there is a wide variation, decision-making processes at work are regularly embedded in complex social contexts and often involve interactions with different parties. Moreover, many decision processes are protracted over time. These features are especially evident in the decision-making processes of administrative officers at the social insurance agency (e.g. Medelberg, 2014; Söderberg & Alexanderson, 2005; Thorstensson et al., 2008). However, administrative officers' decisions and decision processes are delimited by laws, regulations and practical guidance. In order to make accountable decisions of high quality, it has been noted that human service professionals not only need to be able to abide by policies and regulations but also to collaborate with relevant parties and implement decision processes within fixed time frames (e.g. Geisler & Allwood, 2015; Mattison, 2000). In their work, administrative officers at the Swedish Social Insurance Agency make decisions concerning clients' physical and/or psychological conditions in relation to regulations and general guidance for assessments of clients work ability and/or entitlement to sick leave insurance. Administrative officers manage client-rehabilitation issues, which often involve identifying, gathering and interpreting complex information. Thus, decisions are usually based on both documentation (e.g. medical records) and information gathered through interactions with stakeholders, both within (e.g. clients, colleagues and experts) and outside (e.g. employers, other agency officials) the agency (Frank et al., 2015; Hensing et al., 1997; Thorstensson et al., 2008; Ydreborg et al., 2007).

Previous research reports that administrative officers regularly need to initiate and coordinate decision processes and to see to that the contributions from all stakeholders are timely, accurate and sufficient. It has been noted that interpersonal communication is crucial for ensuring an efficient work process for administrative officers (Thorstensson et al., 2008). In a review of studies focusing on the cooperation between administrative officers and other actors, Söderberg and Alexanderson (2005) found that the existing evidence suggests that concerns about collaborations tend to be associated with feelings of ambiguity and uncertainty among administrative officers.

### What is known about this topic?

- Social insurance officers' decision-making is characterised by complexity and a need for order and accountability.
- Decision quality at work relates to quality of work, work-related stress and well-being.
- Due to the high complexity, investigations of decision-making skills and outcomes in human service professions need a multifaceted approach.

### What this paper adds?

- We investigated the role of different decision-making skills in relation to decision-making outcomes among social insurance officers.
- The results demonstrate the importance of attending to different features of decision-making skills and outcomes for the understanding of social insurance officers' decision-making.
- Socio-emotional and time approach-related decision-making skills are important for the outcome of social insurance officers' decision-making.

## 1.2 | Decision quality in the decision-making of administrative officers in the Swedish Social Insurance Agency

The issues of defining successful decisions have been discussed in reference to the term decision quality. Researchers arguing in support of a broad approach to decision-making have emphasised that assessments of decision-making success should attend to the degree that decisions (i.e. processes and outcomes) are considered as valid and appropriate by the decision-maker and other people (e.g. Milkman et al., 2009; Tetlock, 1985; Wood & Highhouse, 2014). Accordingly, as decision quality can be evaluated subjectively and/or objectively (e.g. Baron, 2012; Keys & Schwartz, 2007), competent decision-makers should be able to perform decision processes and make decisions with favourable effects that are considered favourable from both perspectives (e.g. Smith et al., 2004). It has been noted that evaluations of decision quality not only should attend to positive effects but also the propensity to avoid negative effects (Higgins, 2000). In line with this, research has investigated decision-making competence (DMC) in relation to the propensity to avoid negative outcomes associated with poor decision-making (Bruine de Bruin et al., 2007; Parker et al., 2015), risk-taking (Weller et al., 2015) and self-reported stress (Geisler & Allwood, 2018).

Evidently, defining and assessing decision quality and decision-making skill is difficult. Still, these issues are important for individuals, organisations and clients, and need to be given attention. In the context of evaluating the decision quality in working

life in general, and for administrative officers in particular, multiple legitimate stakeholders should be considered. For administrative officers in the social insurance agency, the stakeholders include the state authority (i.e. the government and the ministry of social welfare), the insurance officers (including specialists), the clients and collaborating partners (e.g. healthcare, social services). In their decision-making, administrative officers need to adhere to and coordinate the perspectives of the different stakeholders and make decisions with accountability with respect to various criteria. This commonly involves communication and discussion with one or more stakeholder. For instance, decisions need to be made in line with regulations and guidance (i.e. state authority perspective). For example, the decision should be delivered within a certain timeframe. At the same time, the officers need to ensure a fair and thorough consideration of the client's rights (i.e. client perspective), and see to it that the proposed decisions are in line with assessments and efforts by other authorities and parties (e.g. collaborating partners' perspective). For example, the physician's statement should be closely attended to. In brief, decision quality is related to the issue of quality of work. Interestingly, in the context of human service work, previous research has found that quality of work is associated with work-related stress (Dollard et al., 2003), job satisfaction, work engagement and organisational commitment (Geisler et al., 2019), and staff turnover (Astvik & Melin, 2012).

Hence, we argue that assessments of decision-making skills among administrative officers need to consider skills associated with the ability to make decisions that abide to laws and regulations, and that constructively heed the perspectives of other stakeholders. Given the complex nature of the decision task, assessments of decision quality among administrative officers could preferably use a multifaceted approach and encompass various indicators of decision quality, such as the propensity to avoid negative effects of decision-making. To get a general picture of the decision-making skills of the administrative officers at the Swedish Social Insurance Agency, and due to the practical difficulties of collecting data on the (objective) quality of the actual work decisions made by the administrative officers, we chose to attend to three different indicators of decision-making outcome. First, we included a measure of experiences of minor difficulties and hassles, reflecting overall tendencies of negative consequences of decisions and decision processes. Second, we used a measure of tendencies to burnout and, finally, we also included a measure of depressive symptoms. The rationale for attending to tendencies to burnout and depression is given by the practical relevance in relation to administrative officers in the social insurance agency, since many responsibilities in their professional decisions (e.g. time/accountability pressure, interactions with/dependence on the contributions of other stakeholders) are potentially stressing (e.g. Hensing et al., 1997; Ydreborg et al., 2007). In support of this, statistics show (Swedish Social Insurance Agency, 2014, 2017) that the rates of sick leave among the personnel of the Swedish social insurance agency have increased in recent years (from 4.7% in 2012, to 6.1% in 2017).

### 1.3 | Cognitive-rational DMC

One skill likely to be relevant in administrative officers' decision-making is the ability to make rational decisions (Bruine de Bruin et al., 2007; Fischhoff, 2010; Parker & Fischhoff, 2005). From this perspective, DMC has been suggested to be defined by an individual's aptitude to follow normative rational principles (i.e. formally accurate and/or consistent) when making decisions (e.g. Parker et al., 2018). Overall, this skill is likely helpful for administrative officers' ability to make decisions that abide by the regulations and guidance of their assignment.

Research has found a relationship between DMC (i.e. performance on the DMC battery; Bruine de Bruin et al., 2007) and indicators of decision-making success. For example, DMC performance relates to fewer reports of negative outcomes associated with real-life decision-making (Bruine de Bruin et al., 2007), less risk behaviour (Parker & Fischhoff, 2005), more appropriate risk attitudes (Weller et al., 2015) and better achievements in school (Weller et al., 2012). In the U.S., DMC performance among high-level leaders has been reported to be higher than the levels observed in community-based samples (Carnevale et al., 2011). One interpretation of these results is that DMC performance may capture skills relevant for successful decision-making in working life settings. Yet, to date, except for studies by Geisler and Allwood (2015, 2018), investigations of the relationship between DMC performance and working life outcomes are lacking.

van de Luitgaarden (2009) argued that, due to the characteristics of decision-making tasks in human service professions, the emphasis put on analytical rational choice approaches to decision-making in human service contexts should be tuned down and approaches associated with naturalistic everyday decision-making should be given more attention. In line with this, and given the complexity of decision-making in work-life contexts such as that of administrative officers at the Swedish Social Insurance Agency, it has been suggested that successful decision-making depends on a broader set of skills than just the ability to make normatively correct and rational decisions (e.g. Geisler & Allwood, 2015; Smith et al., 2004). The present study contributes to understanding the decision-making of social security officers by exploring the importance of cognitive-rational skills (i.e. DMC), as well as socio-emotional and time management skills of relevance for decision-making at work – in relation to important indicators associated with decision-making outcomes.

### 1.4 | Socio-emotional and time-management decision-making skills

In their decision-making, administrative officers need to be aware of and capable to understand and discern emotions, as well as to adaptively manage emotional reactions in both self and others (e.g. Mattison, 2000). Thus, they need a constructive socio-emotional orientation. As noted above, the decision processes of administrative officers at the social insurance agency regularly include interactions

with other stakeholders. For these decision processes to be successful, these interactions need to be handled constructively (e.g. Allwood & Hedelin, 2005; Rilling & Sanfey, 2011). Moreover, the decisions of the administrative officers have consequences for other people. These consequences, and people's reactions to them (including their expectations), need to be anticipated and heeded in the decision processes (Allwood & Salo, 2014; Keys & Schwartz, 2007) and essential aspects of social skills are likely required for administrative officers to get their decisions accepted by others (Allwood & Hedelin, 2005; Lerner & Tetlock, 1999). In this respect, aspects of social orientation (e.g. self-monitoring, empathy and emotional intelligence) have been found to be related to decision-making performance (Geisler & Allwood, 2015; Ramsøy et al., 2015; Telle et al., 2011).

In the context of administrative officers, as in work and everyday life in general, time is a resource that needs to be approached and managed in a suitable way in the decision process (e.g. Becket et al., 2007; O'Connor & Leonard, 2014). Researchers have argued that variations in time approach are important to consider in order to understand peoples' decision-making (Wittmann & Paulus, 2008; Zimbardo & Boyd, 1999). Individual differences in time perception and time management are associated with well-being (Drake et al., 2008), and self-reports of stress (Claessens et al., 2007). Time styles are one way to conceptualise individual differences in how people approach and manage time in their engagement in decision-making processes (Usunier & Vallette-Florence, 2007). Specifically, being overly focused on the past or the future, as well as being troubled and anxious in the overall management of time-related activities, seem to be unfavourable (Geisler & Allwood, 2015, 2018).

## 1.5 | Hypotheses

In the present study, we investigated the association between three aspects of administrative officers' decision-making skill: cognitive-rational competence, socio-emotional orientation and time management approach, to three indicators of decision-making outcomes: daily hassles, burnout and depressive symptoms.

Cognitive-rational decision-making skill was measured by performance on the DMC (Bruine de Bruin et al., 2007). *Hypothesis 1* was that DMC would be related to lower reports of daily hassles, lower tendencies to burnout and lower reports of depressive symptoms.

Socio-emotional decision-making skill was assessed by trait emotional intelligence (Petrides & Furnham, 2001). *Hypothesis 2* was that trait emotional intelligence would be related to lower reports of daily hassles, lower tendencies to burnout and lower reports of depressive symptoms.

Finally, decision-making-related aspects of time management and time approach were measured by specific time styles (i.e. *orientation towards the past*, *orientation towards the future* and *time anxiety*) of the *Time Styles Scale* (TSS; Usunier & Vallette-Florence, 2007). *Hypothesis 3* was that time styles would be related to higher reports

of daily hassles, as well as higher tendencies to burnout and higher reports of depressive symptoms.

## 2 | METHOD

### 2.1 | Participants and procedure

In total, 179 administrative officers at the Swedish Social Insurance Agency in Sweden were invited to participate in the study. The invitations were given to administrative officers specifically working with the handling and administration of social insurance cases, employed in the seven offices of one regional district of the Swedish Social Insurance Agency. In all, 118 participants (104 women, aged 25–63 years,  $M_{\text{age}} = 42$  years,  $SD = 12.1$ ) returned completed questionnaires (response rate = 66%). The respondents were fairly evenly distributed across the seven offices (i.e. about the same proportion from each of the seven offices).

The researchers first established support for the study from the top administrative level in the regional district. Thereafter, the top administrative level communicated about the study with a contact person (suggested by the top administrative level) at each of the offices, who invited the administrative officers at the office to participate. Next, the material was posted to the respective contact persons. The contact person then distributed the material to the administrative officers who had expressed preliminary interest to participate in the study. The participants received information and instructions for the study on paper, a paper-and-pen questionnaire and an addressed envelope for mailing the questionnaires back to the researchers. The invited administrative officers had 1 week to fill in the questionnaire and return it to the researchers. It took approximately 40 min to complete the questionnaire.

### 2.2 | Materials

#### 2.2.1 | Independent variables

*Decision-making competence* measures skills and abilities of a normatively rational decision-maker (Bruine de Bruin et al., 2007). Five of the six components of the DMC were included: *Applying Decision Rules* (ADR), *Resistance to Framing* (RTF), *Consistency in Risk Perception*, *Resistance to Sunk Costs* and *Recognising Social Norms*. The component *Over/Under Confidence* was excluded, in order to reduce participants' work burden and due to cultural suitability of some of the items in this specific component of the DMC (see Weller et al., 2015). Furthermore, the RTF component was shortened. The original component consists of seven item pairs, assessing resistance to attribute framing (i.e. where participants are asked to rate positively or negatively framed descriptions of normatively equivalent situations); and risky-choice framing (i.e. where participants are asked to rate gains and loss versions of normatively equivalent decision problems). However, it has been

reported that different types of framing effects are not, and should not be treated as, the same effect (Levin et al., 1998). Thus, based on the consideration that resistance to attribute framing is of more importance for administrative officers' decision-making compared to risky-choice framing, only the attribute-framing item pairs were included in the study. In addition, based on item reduction calculations of Cronbach's alpha on data in previous studies of the DMC ( $n = 326$ ; Geisler & Allwood, 2015, 2018), item pair number 7 (i.e. RTF-1.7 and RTF-2.1) was excluded ( $\alpha = 0.46$ , compared to  $\alpha = 0.43$ , when this item pair was included). Moreover, based on the same procedure and the data from the previous studies, the ADR component was shortened from 10 to 5 items (i.e. ADR items 1, 4, 6, 7 and 10 were excluded), as this reduction was found to not affect reliability ( $\alpha = 0.66$ ). The DMC index reflects the unweighted average of the standardised score for all components and calculation of Cronbach's alpha is not relevant for this score.

*Trait Emotional Intelligence Questionnaire - Short Form* (TEIQue-SF) consists of 30 items of the original TEIQue (Petrides & Furnham, 2001, 2006). The TEIQue-SF was used to measure socio-emotional orientation of importance for decision-making and provides a global score of trait emotional intelligence reflecting emotional awareness, capacity for empathetic concerns and ability to cope with emotional reactions in both self and others. The items are rated on 7-point Likert-type scales. An item example is as follows: "I usually find it difficult to regulate my emotions" (reverse-scored). Cronbach's  $\alpha = 0.85$ .

*Time Styles Scale* (Usunier & Vallette-Florence, 2007) consists of eight different time styles. The present study used three time styles: *orientation towards the past* ( $\alpha = 0.81$ ; item example: "Sometimes I find myself dwelling on the past"), *orientation towards the future* ( $\alpha = 0.84$ ; item example: "I think a lot about what my life will be some day") and *time anxiety* ( $\alpha = 0.78$ ; item example: "I sometimes feel that the way I fill my time has little use or value).

### 2.2.2 | Dependent variables

#### *The survey of recent life experience*

The survey of recent life experience (SRLE; Kohn & Macdonald, 1992) measures experiences of hassles and minor difficulties in various everyday domains. A higher score indicates more experiences of negative outcomes. The present study used the domains *work*, *social and cultural* and *financial* difficulties (i.e. the domains *time pressure*, *social acceptability* and *social victimisation* were excluded). However, based on the originally reported factor loadings, certain items in selected domains were excluded. Items with original factor loadings below 0.40 were excluded (Kohn & MacDonald, 1992). Thus, no items were reduced for work domain items (all seven items  $>0.40$ ), whereas five of the eleven items on the social and cultural difficulties domain were excluded and two of the six items on the financial difficulties domain were also excluded. An example item is "Failing to get money you expected" from the domain of financial difficulties. Cronbach's  $\alpha = 0.87$ .

#### *Maslach Burnout Inventory - General Survey*

The Maslach Burnout Inventory - General Survey (MBI-GS) measures tendencies to be at risk of developing burnout syndrome (Hallberg & Sverke, 2004; Maslach & Jackson, 1981; Maslach et al., 2001). An example item is "I feel emotionally drained from my work" (from the emotional exhaustion subscale). Cronbach's  $\alpha = 0.90$ .

*Patient Health Questionnaire - Two-item version* (PHQ-2) assesses depression tendencies. The PHQ-2 has been reported to have high construct and criterion validity, and to be related to sick-leave absenteeism and healthcare utilisation (Kroenke et al., 2003). The response options for each item were "not at all" (0), "several days" (1), "more than half the days" (2) and "nearly every day" (3). An example item is "Little interest or pleasure in doing things." Cronbach's  $\alpha = 0.87$ .

### 2.3 | Ethics statement

The Regional Ethical Review Board, Gothenburg secretariat, www.epn.se, 2011-02-21, approved this research (Reference number: 071-11). All participants provided their written informed consent.

## 3 | RESULTS

The data analyses were performed by use of the SPSS (version 25). Descriptive statistics and correlations are reported in Table 1. The DMC index was positively correlated with trait emotional intelligence, and negatively correlated with two of the three indicators of decision-making outcome: daily hassles (SRLE) and depressive symptoms (PHQ-2). Trait emotional intelligence was negatively correlated with the three time styles, as well as to the three measures of decision-making outcome. Moreover, all three time styles were positively correlated with the three measures of decision-making outcomes.

To test the hypotheses, multiple regression analyses were performed for each of the three indicators of decision-making outcome(s), see Table 2. Based on the assumption that cognitive-rational competence (i.e. the DMC) constitutes a core aspect of decision-making, whereas individual differences in socio-emotional orientation and time approach are more general, hierarchical multiple regression analyses were performed. Thus, the hierarchy (i.e. steps) of predictors tested included four blocks: (a) *age* and *gender*, (b) *DMC index*, (c) *socio-emotional orientation* and (d) *time approach*. In addition, we controlled for order effect by reversing the order of socio-emotional orientation and time approach. That is, by reversing the order of Steps 3 and 4 information about the predictive overlap between the two steps is provided (cf. Bruin de Bruin et al., 2007, Table 6).

As can be seen, age and gender in Step 1 were significantly related to indicators of decision-making outcomes in terms of daily hassles (SRLE,  $\Delta R^2 = 0.12$ ) and tendencies to burnout (MBI-GS,  $\Delta R^2 = 0.09$ ), but not to depression tendencies (PHQ-2). However, in the full regression models (i.e. including all four steps), age was not

TABLE 1 Descriptive statistics and correlations

	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Age	109	25	63	42	12.11	-								
2. DMC index	110	-1.12	1.08	0.02	0.51	0.02								
3. Trait emotional intelligence	115	77.00	166.00	130.40	17.81	0.11	0.22*							
4. Time style – future oriented	118	5.00	28.00	19.60	5.11	-0.40**	-0.13	-0.29**						
5. Time style – past oriented	118	4.00	27.00	12.36	4.91	-0.28**	-0.14	-0.41**	0.53**					
6. Time style – anxious	117	4.00	24.00	11.06	4.74	-0.28**	-0.14	-0.64**	0.43**	0.45**				
7. Survey of recent life experiences	115	17.00	60.00	26.57	8.02	-0.30**	-0.22*	-0.33**	0.37**	0.39**	0.46**			
8. Maslach Burnout Inventory (GS)	114	1.00	67.00	26.23	14.83	-0.29**	-0.01	-0.45**	0.42**	0.23*	0.60**	0.45**		
9. Patient Health Questionnaire	117	1.00	4.00	1.50	0.67	-0.22*	-0.21*	-0.46**	0.30**	0.41**	0.58**	0.49**	0.42**	

Abbreviations: DMC = decision-making competence; GS = General Survey.

\* $p < 0.05$ .\*\* $p < 0.01$ .

significant for any of the outcomes, whereas *gender* (dummy coded: 1 = women, 2 = men) was significantly related to SRLE ( $\beta = -0.185$ ,  $p = 0.041$ ) but not for any of the other outcomes. Thus, women reported more daily hassles than men.

Furthermore, DMC performance (i.e. the index) was added to the model in Step 2 and provided a significant contribution to the explained variance in daily hassles ( $\Delta R^2 = 0.06$ ,  $\beta = -0.238$ ,  $p = 0.014$ ) and tendencies to depression ( $\Delta R^2 = 0.05$ ,  $\beta = -0.220$ ,  $p = 0.027$ ). However, the DMC index was not a significant predictor in the full regression models.

When socio-emotional orientation (i.e. trait emotional intelligence) was added to the model in Step 3 (i.e. *Step 3a*), it provided a significant contribution to the explained variance for daily hassles ( $\Delta R^2 = 0.07$ ,  $\beta = -0.279$ ,  $p = 0.004$ ), tendencies to burnout ( $\Delta R^2 = 0.20$ ,  $\beta = -0.468$ ,  $p < 0.001$ ) and depression ( $\Delta R^2 = 0.17$ ,  $\beta = -0.433$ ,  $p < 0.001$ ). Still, when socio-emotional orientation instead was added after the time approach block (i.e. in *Step 4b*), the contribution was only significant in relation to burnout ( $\Delta R^2 = 0.03$ ,  $\beta = -0.226$ ,  $p = 0.037$ ).

When added to the model, time approach contributed significantly to the explained variance in all outcomes. When added in Step 3, time approach provided a fair amount of explained variance in daily hassles ( $\Delta R^2 = 0.15$ ), tendencies to burnout ( $\Delta R^2 = 0.36$ ) and depression ( $\Delta R^2 = 0.28$ ). However, when time approach instead was added as Step 4 (i.e. after the socio-emotional orientation block), the contribution to each outcome was lower (SRLE,  $\Delta R^2 = 0.08$ ; MBI-GS,  $\Delta R^2 = 0.19$ ; PHQ-2,  $\Delta R^2 = 0.12$ ). At the single predictor level of the full models, the anxious time style was a significant predictor (i.e. associated with more negative reports) of burnout ( $\beta = 0.376$ ,  $p = 0.001$ ) and depression ( $\beta = 0.415$ ,  $p = 0.001$ ), but did not reach significance in relation to daily hassles ( $\beta = 0.242$ ,  $p = 0.060$ ). Finally, in the full models, the future-oriented ( $\beta = 0.345$ ,  $p = 0.001$ ) and the past-oriented ( $\beta = -0.253$ ,  $p = 0.013$ ) time styles were significant single predictors for burnout.

## 4 | DISCUSSION

Effective decision-making among the administrative officers is crucial for a well-functioning social insurance agency. In order for decisions to be successful, administrative officers need a broad range of skills (e.g. Geisler & Allwood, 2015; Mattison, 2000, see also Keys & Schwartz, 2007). In a sample of administrative officers, we investigated the importance of different skills and abilities in relation to various types of indicators of successful decision-making. Specifically, we investigated the relation between three essential decision-making skills (i.e. cognitive, socio-emotional and time approach) to three indicators of decision-making outcome (i.e. daily hassles, burnout and depression). The response rate, 66%, was rather high, maybe due to that support for the study was established with the organisation beforehand and possibly the inherent interest of the topic to the administrative officers.

**TABLE 2** Hierarchical multiple regression analyses

	Total R <sup>2</sup>	Adjusted R <sup>2</sup>	ΔR <sup>2</sup>	Test of ΔR <sup>2</sup>
<b>SRLE</b>				
Step 1: Age and gender	0.124	0.105	0.124	$F(2, 93) = 6.56, p = 0.002$
Step 2: DMC index	0.180	0.153	0.057	$F(1, 92) = 6.35, p = 0.014$
Step 3a: Socio-emotional orientation	0.251	0.218	0.070	$F(1, 91) = 8.54, p = 0.004$
Step 4a: Time approach	0.331	0.278	0.081	$F(3, 88) = 3.54, p = 0.018$
Step 3b: Time approach	0.329	0.284	0.149	$F(3, 89) = 6.59, p < 0.001$
Step 4b: Socio-emotional orientation	0.331	0.278	0.002	$F(1, 88) = 0.28, p = 0.596$
<b>MBI-GS</b>				
Step 1: Age and gender	0.085	0.065	0.085	$F(2, 91) = 4.24, p = 0.017$
Step 2: DMC index	0.085	0.055	0.000	$F(1, 90) = 0.17, p = 0.898$
Step 3a: Socio-emotional orientation	0.284	0.252	0.199	$F(1, 89) = 24.77, p < 0.001$
Step 4a: Time approach	0.471	0.428	0.186	$F(3, 86) = 10.10, p < 0.001$
Step 3b: Time approach	0.443	0.405	0.358	$F(3, 87) = 18.64, p < 0.001$
Step 4b: Socio-emotional orientation	0.471	0.428	0.028	$F(1, 86) = 4.49, p = 0.037$
<b>PHQ-2</b>				
Step 1: Age and gender	0.056	0.036	0.056	$F(2, 94) = 2.80, p = 0.066$
Step 2: DMC index	0.105	0.076	0.049	$F(1, 93) = 5.05, p = 0.027$
Step 3a: Socio-emotional orientation	0.275	0.243	0.170	$F(1, 92) = 21.58, p < 0.001$
Step 4a: Time approach	0.390	0.342	0.115	$F(3, 89) = 5.60, p = 0.001$
Step 3b: Time approach	0.380	0.339	0.276	$F(3, 90) = 13.34, p < 0.001$
Step 4b: Socio-emotional orientation	0.390	0.342	0.010	$F(1, 89) = 1.42, p = 0.237$

Abbreviations: DMC index, Decision-Making Competence index; MBI-GS, Maslach Burnout Inventory – General Survey; PHQ-2, Patient Health Questionnaire – 2-item version; SRLE, survey of recent life experiences.

In all, the results provide some support for the assumption that cognitive DMC can help explain variance in the types of decision-making outcomes investigated. DMC performance was related to daily hassles and depressive symptoms. However, the contribution provided by the DMC was rather limited. This limited association, in contrast to the reports of previous research (e.g. Parker & Fischhoff, 2005; Weller et al., 2015), could be due to the smaller and more heterogeneous sample in the present study. That is, it may be that DMC performance (i.e. cognitive decision skills) needs larger and more homogenous samples in order to show an effect (cf. Bruine de Bruin et al., 2012; Weller et al., 2012). Nevertheless, our results do not provide any support for the assumption that cognitive decision-making skills (as measured by the DMC) are a relevant feature to address in order to ameliorate stress-related ill health, such as burnout, among administrative officers (however, cf. Ceschi et al., 2017).

Our results support the suggestion by van de Luitgaarden (2009) that it is useful to analyse decision-making in human service professions in a way that includes rational choice but also attends practitioners' feelings, intuitions and time approach. Regarding time

styles, our results show that time anxiety was most clearly related to negative outcome in terms of tendencies to burnout. This suggests that when the goal is to support administrative officers at the social insurance to manage negative work stress, training in socio-emotional skills (e.g. emotional intelligence/emotion regulation: Buruck et al., 2016) and time approach (e.g. time management: Claessens et al., 2007) seem to be more relevant than training in cognitive-rational skills. Furthermore, this result corroborates the reports in previous research (Geisler & Allwood, 2018) by demonstrating that the overall ability to regulate one's actions in order to successfully manage decision-making at work and avoid stress-related concerns (i.e. tendencies to burnout), may be less contingent on cognitive decision-making skills – as defined and measured by the DMC. Even though high-level leaders have been reported to outperform a community sample on the DMC performance (Carnevale et al., 2011), the relation between DMC performance and work-related outcomes remains largely unsupported.

Overall, it can be expected that decision-making skill should relate to various types of decision outcomes. The results of the present study support this expectation, especially with regards to

the socio-emotional and the time-approach-oriented features of decision-making skill. Thus, our study contributes to research on decision-making skills in work life context in general, and of administrative officers at the social insurance agency in particular, by showing the importance and usefulness of specifying the type of outcomes for which decision-making skill could, or should, show to be related to and even hold predictive validity for (e.g. Blais & Weber, 2001; Geisler & Allwood, 2015, 2018; Higgins, 2000; Keys & Schwartz, 2007; Weller et al., 2015; Yates et al., 2003).

#### 4.1 | Limitations and future research

This research has various limitations. For example, due to the necessity to reduce participants' burden (e.g. time limitations) and items' perceived cultural suitability, one component of the DMC was excluded and two components were shortened. In line with this, as the DMC is a rather time-consuming measure, previous research has chosen to only use certain components due to similar concerns (e.g. Weller et al., 2015, 2018). Moreover, the present research was cross-sectional and the measures of decision-making outcomes were based on self-report data, which may give a somewhat different picture of these outcomes as compared to if the data had been based on objective performance reports (if possible) or register data (e.g. sick leave absenteeism). However, it should be noted that in a study on risk perception, Frey et al. (2017) found that when performance and self-report measures were assessed in a larger sample ( $n = 1,507$ ), self-reports showed better results in terms of test-retest stability and expected relationships to other measures. Nevertheless, if possible, future research should use a longitudinal approach and more varied data types.

In addition, the indicators of decision-making outcomes operationalised in the present study may be considered to be rather distal, and events other than the participants' decision processes/decisions could have influenced these measures. To ameliorate this, and with respect to the previously discussed difficulties associated with the issue of decision quality, we used a multifaceted approach to decision-making outcomes. Additionally, the present study targeted outcomes of high relevance in people's lives – both professionally and privately. Given the variation in the observed relation between the various features of decision-making skill and the different outcomes assessed, it seems to be interesting and important for future research to examine the relationship between decision-making skills and domain-specific outcomes in both professional and everyday settings.

In sum, previous research has reported that in order to be efficient and successful in their decision-making, administrative officers at the social insurance agency need to take a number of different aspects into account (e.g. Frank et al., 2015; Hensing et al., 1997; Thorstensson et al., 2008; Ydreborg et al., 2007). The present study corroborates these reports and makes a novel contribution by showing that socio-emotional and time approach features of decision-making skill seem to be at least as important as cognitive-rational

skills in order for officers to be successful in their decision-making with respect to different types of outcome. The present study also contributes by recognising the complex accountability demands that administrative officers face in their decision-making, and by demonstrating the importance of the different decision-making skills needed to avoid negative outcomes associated with poor decision-making. Regarding policy, our results illustrate the importance of paying attention to the complex requirements that administrative officers meet and need to heed in their work. The results may help to guide practice and policy in order to aid administrative officers' decision-making and, in turn, their work-related health and well-being. For instance, a possible practical implication of our results is that providing administrative officers training in socio-emotional and time approach/management skills may improve their decision-making at work. Importantly, such training may also improve their general well-being (i.e. less daily hassles and depressive symptoms) and could offer some protection against the risk of developing burnout.

#### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

#### ORCID

Martin Geisler  <https://orcid.org/0000-0002-7422-6382>

Carl Martin Allwood  <https://orcid.org/0000-0002-9968-6940>

Ilkka Salo  <https://orcid.org/0000-0003-0943-5484>

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