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About the same thing in a different way: wording and experienced emotions in the understanding of official letters

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Abstract

Reading official letters and being able to react to them appropriately is part of the daily life of every adult in many countries. Although the history of the plain language movement dates to the past century, it is only now that efforts are being made in Poland to adapt official documents to their audience. In this paper, we describe the results of a study ($N = 685$) in which we examined how particular linguistic forms and text structure affect the reception of an official-looking text – comprehension as well as emotions experienced, trust in the office, feelings of helplessness in the situation of reading the writing, and many other variables. Based on Imbir's (2016, *New Ideas in Psychology*, 43, 39–49), two-system theory of emotions, we aim to examine how emotions – triggered by these complex stimuli – affect their processing. We hope that the results of our interdisciplinary research will answer the questions and hypotheses posed by researchers and find application in the reforms currently underway. We believe that by linking findings from cognitive psychology, the psychology of emotions and linguistics, we will also expand knowledge in the broad discussion on overcoming barriers between administrative offices and target audiences.

Keywords: cognition; dual-system theory of emotion; emotion; linguistic forms; official letters; plain language

1. Introduction

Why do official letters cause so much trouble for their recipients? What are the reasons for their inaccessibility? In what direction should the reforms of such documents go? The first indications of adapting the content of messages to their recipients date back to the creation of writing (Piekot & Maziarz, 2014). However, systematic research in this context goes back as far as the 1920s (Gruszczyński et al.,



2015). The so-called *plain language movement* began to gain popularity in the 1970s, first in Anglo-Saxon and later in western European countries, leading to fundamental changes in shaping public services and adapting them to the needs and capabilities of citizens (Kocowska-Siekierka, 2017; Piekot et al., 2019).

Although the first postulates for simplifying legal language were formulated in Poland as early as the first half of the past century (Pisarek, 1966; Wróblewski, 1948; Zandberg-Malec, 2021), the actual reforms carried out in the manner of *plain language* started happening right before our eyes just recently (Matyjaszczyk-Łoboda, 2021; Piekot, 2021; Piekot et al., 2019). We are witnessing various attempts to simplify, among other things, official communications in ways not always successful (Woltanowski, 2021) and often based more on intuition than empirical data (Cieśla, 2021; Śliwowski & Winiewicz-Price, 2019). The examples of the implementation of plain language postulates show that it is a way of solving many problems – small reforms in the formulation of the letter (and therefore not requiring a large financial outlay) can provide significant relief to the administrative apparatus (Cieśla, 2021; Piekot et al., 2019), as well as both contribute to huge savings on the side of the state (Hernandez et al., 2017a,b) and improve communications with offices as well as citizens' attitudes towards them (Andrzejewska, 2023; Hadryan, 2015; Poprawa, 2012).

The necessity to formulate official letters comprehensibly for their recipients by considering their linguistic and perceptual capabilities (Cieśla, 2021) is also the realization of fundamental human rights (Głapiak, 2017; Woltanowski, 2021). This issue is very important from a social point of view. Every adult citizen at some point encounters the need to respond to a letter sent from an office. Therefore, letters associated with this domain of state activity should be treated with special attention and adapted to the needs of a very diverse audience (Cieśla, 2021; Piekot et al., 2019). At the same time, it is important to construct the text in such a way that it stimulates attentive reading. Research indicates that stimuli that do not present a cognitive 'challenge' may result in shallower processing, which can lead to cognitive errors and superficial reading of writing (Groeben, 1982; Lutz, 2015). This issue is particularly significant in the field of official letters since these utilitarian messages are often related to the need for an appropriate response on the part of the recipient. Their understanding can affect the legal and factual situation of the reader.

In the last decade, there have been numerous efforts to both identify the barriers that make it too difficult for recipients of law and legal texts to understand them (Czerwińska, 2016; Gruszczynski et al., 2015; Piekot, 2021; Zarzeczny & Piekot, 2017) and to implement changes by editing guidelines, as well as drafting patterns and templates for those documents (Skaryszewska, 2022; Woltanowski, 2021; Zimmermann et al., 2021). However, empirical studies conducted on a diverse and representative sample are lacking in this area (Cieśla, 2021; Śliwowski & Winiewicz-Price, 2019). In response to this absence, we sought to verify the claims made by scholars through empirical research, using official writings as they originally appeared. In this article, we summarize the findings to fill this gap. In addition, we supplement linguistic knowledge with theories related to the processing of such complex stimuli as official letters. We pay attention to the cognitive processes involved in reading and processing these documents, as well as the emotions that accompany them, in the context of the dual-system theory of emotion (Imbir, 2016).

1.1. Reasons for the inaccessibility of official letters

1.1.1. Intra-textual causes

There are various reasons for the difficulties in understanding the letters received from bureaucratic offices. Numerous international studies, as well as Polish literature, identify various potential causes contributing to the poor accessibility of official texts. Often, despite the systemic and linguistic diversity in each country, these causes are universal and are present both in Poland and abroad. Among the potential reasons for the inaccessibility of an official text, connected to its wording, Polish respondents identified different types of factors that most strongly disrupt the *comprehensibility* of an official letter (Jankowska, 2022; Jankowska & Imbir, 2022). Among the factors related to the linguistic layer, they distinguished: (1) the predominance of nominalization, typical of administrative letters (Czerwińska, 2016; Mattiello, 2010; Matyjaszczyk-Łoboda, 2021). An important variable indicated by both linguists and survey participants was (2) the use of specialized vocabulary, in particular the reference to legal regulations, unfamiliar to the reader. Respondents pointed out that citing the legal basis for a decision already in the first paragraph of the text caused them to feel helpless and incompetent, sometimes even fearful (Cieśła, 2021; Głapiak, 2017; Jankowska & Imbir, 2022; Piekot, 2021). (3) The location of the citation of the legal basis also affects the structure of the text (Groeben, 1982) introducing information less crucial to the recipient at the beginning of the letter, thus disrupting the hierarchy of content. A variable also connected to the language and related to the relational dimension of the letter is personality. Asymmetry of contact between the parties and the dominance of the office accentuated by the (4) impersonal form is a possible reason for difficulties in understanding the message (Piekot, 2021; Poprawa, 2012). Research in the area of the relationality of texts (other than official writings), conducted by Andrzejewska (2023) indicates that the way the relationship is formed in a text (through the form of addressing the recipient and revealing the sender) can influence, among other things, the effectiveness of the writing, the engagement of readers by stimulating them to read actively and the image of the sender as perceived by the reader. Importantly, as the author points out, the impact of this variable has not been studied empirically to date in Poland (Andrzejewska, 2023); at the same time, it may have important implications for functional messages such as official texts (Czerwińska, 2016; Matyjaszczyk-Łoboda, 2021; Piekot, 2021).

1.1.2. External causes

Not all factors affecting reading difficulties are caused by the structure or textual content of a document. Seretny (2014) suggested the following variables that may influence text reading difficulties: (1) the viewer's limited knowledge of the subject matter addressed in the text, (2) the recipient's attitude towards the content of the text and (3) the attitude of the reader towards the author of the text. Another factor suggested by Woltanowski (2021) is the educational level of recipients. Some of the writings are worded in such a way that only people with higher education can understand them, which discriminates against the rest of the population (Głapiak, 2017; Piekot & Zarzeczny, 2013).

Emotions experienced during reading are also an important factor not included in this list but affecting the recipient's processing of the text (Imbir, 2016; Jankowska & Imbir, 2022).

1.1.3. Influence of emotional processes on cognitive processes

The relationship between emotions and cognitive processing is the subject of increasing debate. Contrary to what Kahneman (Epstein, 2003; Kahneman, 2003; Kahneman & Tversky, 2013) suggested, emotions can enhance the cognitive functioning needed to solve complex tasks, such as responding to an official letter. In the context of ongoing research, it is worth citing a theory that links emotional processes to two different systems of cognitive processing: *the dual-system theory of emotion* (Imbir, 2016; Jarymowicz & Imbir, 2015).

According to this approach, one uses two main modes of stimulus processing – inspired by Epstein (2003), among them is an experiential one, which is based on associations and stereotypes (Krauth-Gruber & Ric, 2000). *System 1* is activated unconsciously and without one's will (not under conscious control), operates unintentionally and requires only minimal cognitive resources (Gawronski & Creighton, 2013; Moors & De Houwer, 2006). However, it is also prone to errors (Kahneman, 2011). *Automatic emotions* are key to this process, evolutionarily preparing us for survival. With emotions of this origin, the body prepares itself physiologically to engage in appropriate behaviour (e.g., fight, flight, reproduction etc.). Since the system operates beyond our consciousness (it is non-intentional and automatic), it allows us to respond quickly when homeostasis is breached.

The second system – the rational mind, commonly referred to as *System 2* – allows for analytical processing (Imbir, 2018a). It is characterized by the longer time required to take action/respond and greater compliance with formal logic and fewer cognitive errors (Gawronski & Creighton, 2013; Imbir, 2018b; Mugg, 2015; Smith & DeCoster, 2000). This way of processing is accompanied by *reflective emotions*, which are the result of the cognitive evaluation of the situation and relating it to some of one's standards and goals. It is worth noting that in everyday life both mechanisms contribute to the actions and decisions made by us. In many situations, it can be difficult to recognize that only one of the processes is present, and usually one dominates (Imbir, 2016).

The cited systems (experiential and rational) have their activation mechanisms. As for automatic processes, the driving factor is *arousal* (Imbir, 2016, 2018a; Imbir et al., 2017). This is a non-verbal energetic response associated with the occurrence of a survival-important stimulus, such as a threatening incentive or a sexual partner (Damasio, 2010). Such stimuli are inherently highly arousing (Moors et al., 2013). What follows is a physiological response by the body to prepare the individual to cope with the situation (e.g., fight or flight). Just as for the experiential system, arousal is an important activation mechanism, in the context of the analytic system, it is disabling. High levels of arousal lead to impaired cognitive control and hinder systematic processing (Imbir, 2016, 2017; Kuhbandner & Zehetleitner, 2011; Yerkes & Dodson, 1908).

For System 2 (rational), the analogous activation mechanism is *subjective significance*. This is a relatively newly named mechanism based on verbalization and goal setting, compared by some to ego strength (Imbir, 2016, 2018b). It helps to undertake or continue an activity that involves effort and requires cognitive input, which is in line with the personal goals and aspirations and for some reason important to the individual (Imbir et al., 2017). Emotional processes are, in a sense, a cognitive metaprogram: they trigger and control other processes including, for example, directing attention to threatening stimuli or those with motivational significance

(Imbir, 2018a). Activation of system-specific emotions should increase the likelihood of using a particular processing system (System 1 or System 2; Imbir et al., 2017). There are different configurations of emotions and cognitive processes. These may be consistent with the system being activated. Examples might include the occurrence of automatic emotions and heuristic processing in a threatening situation or the emergence of reflective emotions that improve the rationality of thinking and its compliance with the rules of formal logic in the context of engaging in systemic thinking when solving a mathematical task. It also happens that we experience emotions that are not system-specific. An example is the occurrence of automatic emotions in a situation that requires the engagement of systematic processing. Emotions can then interfere with processing, reducing the resources required to complete the task (Blanchette & Richards, 2010), leading to a narrowing of the perceptual field (Imbir & Jarymowicz, 2013) and prioritizing the processing of information related to the source of the emotion (Tooby & Cosmides, 1990, 2008). The following situation is interesting in the context of the theory discussed above. When read by people without previous legal training, official letters may be perceived aversively and as a threat. Because of this, those letters may be associated with high levels of arousal and the occurrence of automatic emotions. Consequently, emotional reactions may affect the systematic cognitive processes necessary to understand a complex and difficult text. Thus, regarding the area under study – the processing of official letters – the phenomenon is complex. The texts should be formulated in such a way as to reduce the amount of automatic emotion in the recipient, being accessible to a diverse group of readers, at the same time they should submit to attentive reading by a certain level of cognitive challenge to the recipients (Groeben, 1982; Lutz, 2015), further increasing the chance of activating System 2 and eliminating superficial processing, associated with errors.

1.1.4. *Emotions and cognitive processes when reading official texts*

The study of cognitive processes and emotions when reading texts has long been of the interest of researchers (Bohn-Gettler & Kaakinen, 2022; Pekrun, 2022). There have been many studies in this field, pointing to the important role of affect on text comprehension, motivational processes and learning, sometimes presenting divergent findings regarding the influence of emotions on information processing (see Bohn-Gettler & Rapp, 2011; Ellis et al., 1997; Scrimin & Mason, 2015; Storbeck & Clore, 2005; Trevors & Kendeou, 2018). An important factor that can influence reader responses is the form and characteristics of the text (Bohn-Gettler & Kaakinen, 2022). Official letters are a specific type of applied communication, until recently considered the most difficult example of it (Poprawa, 2012). What further distinguishes these documents from other texts is that they directly shape the rights or impose obligations on the recipient. They are also differentiated by the inequality of the parties to the interaction: a strong hierarchization of contact, further compounded by the high level of difficulty of these texts. Interaction with them may involve an emotional reaction from the reader for a variety of reasons beyond the substantive content of the letter itself (Jankowska & Imbir, 2022). Researchers indicate that in addition to situational factors – for example, previous negative experiences in contact with offices (Poprawa, 2012); lack of sufficient competence to respond to the letter (Piekot & Maziarz, 2014); the very way the text is worded causes readers difficulties (Cieśla, 2021), which contribute to feeling emotions (Piekot

et al., 2015), which can affect their reception. In our study, we wanted to explore the studied phenomenon from a broader perspective, considering the complexity of these writings, thus verifying the relationship between the wording and the emotions experienced during reading and the reader's reception of the writings.

1.2. Aim of the study

Our research focused on empirically verifying selected internal and external factors influencing the process of reading and understanding official letters. The factors were chosen purposively, based on the most frequent answers of the respondents of a qualitative survey ($N = 130$) by Jankowska and Imbir (2022) and the results of corpus research using Sketch Engine (version 2.36.5) that sought reported differences between official writings and texts in ordinary language (see [Supplementary material S3](#)). Among so many variables that can shape the reception of a text, we decided to verify the influence of those that were indicated as having the greatest impact on the inaccessibility of the writing and the experienced emotions. Within the intra-textual causes, we manipulated factors from three different groups: (1) *structure* – the order of the content presented (i.e., the location of the legal basis; Cieśla, 2021; Piekot, 2021); (2) *grammatical forms* – how the writing is formulated (i.e., saturated with verbs or nominalizations (Mattiello, 2010; Matyjaszczyk-Łoboda, 2021; Piekot, 2021) and (3) *relationship* – both the way the recipient is addressed and the addressee is revealed (i.e., personal or impersonal (Andrzejewska, 2023; Cieśla, 2021; Piekot, 2021; Piekot et al., 2019).

In addition to factors related to text structure and its linguistic layers, we collected empirical data on external variables unrelated to the construction and content of the document. Among other things, we supplemented the measurements with the significant topic of the influence of emotions on processing such complex messages, which has not been addressed previously in the literature. In addition, we measured the level of arousal as well as the level of understanding of the document. We also supplemented these measurements with other variables that may be due to external factors suggested by researchers (Poprawa, 2012), such as trust in the sending office (Andrzejewska, 2023) and the frequency of receiving official letters. All the presented examples of official letters (used as a stimulus in this study) contained content required by the provisions of the law in force at the time of the study (letter topic: Tax Ordinance, Code of Administrative Procedure). Legal acts sometimes define obligatory elements of letters, such as citations of laws that drive particular rulings or the presentation of legal facts and arguments and so forth. However, legal acts do not always determine the order in which these contents should be presented or the language in which the letter should be formulated, and other factors leave officials with considerable flexibility in letter formulation (Piekot, 2021; Piekot et al., 2019; Terlikowska, 2017).

1.3. Hypotheses

We expected that, as declared by the respondents in Jankowska and Imbir's (2022) qualitative study, the inclusion of the legal basis for a decision within the text, starting from the first paragraph of a letter could negatively affect its reception – both in the

emotions experienced [H1a] and the level of understanding of the document, which may be lower in readers of a text containing a legal basis already at the beginning of the letter ([H1b]; Glapiak, 2017). Moreover, we assumed that a letter rich in nominalizations would be more challenging to read (Matyjaszczyk-Łoboda, 2021) what can lead to a lower level of text comprehension [H2a]. That can also create a higher level of reflective emotions due to the activation of System 2 [H2b]. In terms of the way of addressing the recipient and revealing the sender, we suspected that impersonally formulated writings would be perceived as threatening and would evoke higher levels of automatic emotions [H3a]. We assume that impersonally worded letters would contribute to the lower comprehension of a text [H3b], (Andrzejewska, 2023).

2. Method

2.1. Participants

There were 707 initial respondents in the present study. The responses of 685 participants aged 18–77 years ($M = 28.27$, $SD = 10.60$), including 579 females, were analysed. One fully blank response was removed ($n = 1$), answers of underage individuals were excluded from further analysis ($n = 3$), as well as responses with too short and too long page times (shorter than 3 s and longer than 200 s) were eliminated ($n = 18$). Respondents who declared their age equal to or higher than 70 years old were subjected to additional verification ($n = 3$). Participants reported various educational backgrounds. Among them were those declaring primary education ($n = 8$); secondary education ($n = 100$); being in college ($n = 259$) and completed higher education ($n = 318$). Respondents varied in their chosen field of education, with 181 indicating a humanities background; other respondents' fields included natural science ($n = 87$), social science ($n = 148$), an arts background ($n = 46$), a science ($n = 190$) and an 'other' background ($n = 122$).

All the procedures involving human participants were conducted under the ethical standards of the institutional research committee (opinion number: 3/03/2021) and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

2.2. Design

The study was designed with a mixed-methods scheme. The main dependent variable was the intensity of experienced emotions, changing due to the manipulation of the linguistic material. Each emotion measurement was also supplemented with affective dimensions such as valence and arousal survey using the Self-Assessment Manikin (SAM scale; Bradley & Lang, 1994) – see Section 2.3.2. Among other dependent variables were the level of reading comprehension, the subjective relevance of the text and its perceived comprehensibility, the level of trust towards the tax office, feeling of helplessness after reading the text as well as the mood experienced after the document's reading.

As an independent variable, we distinguished the type of emotion: the emotional valence (positive and negative) and the origin of emotion (automatic and reflective). As other independent variables, we manipulated three linguistic elements: (1) structure, or the position of the legal basis at 2 levels: in the text of document,

starting from its beginning and at the end of the text in a footnote; (2) grammatical forms, or the way the text is formulated at two levels: verb forms and nominalizations and (3) the interpersonal relations aspect of the text, or how the recipient is addressed and how the sender is revealed at two levels: personal or impersonal. To capture the dynamics of emotional responses, measurements were taken twice – before beginning the study and after reading the text. As an independent variable (which we controlled, but did not manipulate), we also considered the frequency of receiving letters from the office by survey participants and the reading time.

2.3. Materials

2.3.1. Stimuli – official letter texts

The stimuli material used in this study were letters constructed based on qualitative and quantitative analyses of letters from the Tax Office in Poland. Based on the results of the analyses, we created a prototype letter, in the form of a notice to provide an overdue tax declaration. The prototype was built based on measures obtained in a corpus study in Sketch Engine, constructed to represent the average linguistic characteristics typical of an official letter from the tax office (see Supplementary material S3). Before including the text in the study, we asked people working in the offices ($n = 3$) whether the text resembled real letters sent by officials. The stimuli were then subjected to modifications in terms of linguistic parameters (verb tenses/nominalizations and personal/non-personal form) and the way the reference to legal regulations was placed (within the document, from the first paragraph of a letter versus in a footnote at the end of the text). The content of all letters was the same and their level of difficulty was close. The substantive content of all texts was identical, and changes were only due to the need to manipulate textual factors. All the letters were checked for language characteristics and difficulty class with Sketch Engine and Logios software applications (public versions), see [Supplementary materials S2 and S3](#).

2.3.2. Dependent variable operationalization

The intensity of emotions experienced by participants. This was measured using a scale prepared on the basis of a series of pilot studies from earlier empirical research (Jankowska & Imbir, 2022). At this stage, the pilot study had two parts – the preparation of a list of emotions characteristic of reading official letters ($n = 62$) and the evaluation of the origin of emotions by competent judges ($n = 7$). The final list consisted of eight emotions: calmness, excitement, frustration and irritation, satisfaction, self-contentment, discouragement and anxiety. Respondents marked the intensity of the emotions they felt using a slider (dimensions 0–100), where the extremes were marked as ‘to a low degree’ and ‘to a high degree’. Emotional intensity was measured twice – before reading the text and after that.

Affective dimensions. To complement the measurement of the intensity of experienced emotions, we made additional assessments using non-verbal measures. By SAM, we examined the level of arousal and dimensional valence before and after reading the text of the official letter (measurement moment). Both scales contained pictograms representing the intensity of a given factor. A description of the characteristics of the ‘extreme’ level of a given factor accompanied each scale to help participants respond according to their feelings. Respondents provided answers using a slider that they could place under each pictogram (1–5) ([Figure 1](#)).

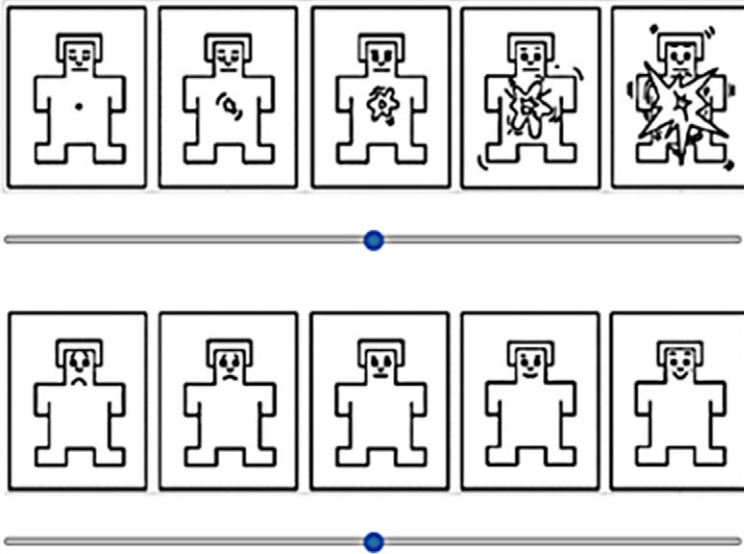


Figure 1. Measurement of arousal level and valence – Self-assessment manikin.

The level of reading comprehension. This was examined via four questions about the content of the writing. The difficulty of the questions was verified in a pilot study ($n = 16$) where we aimed to standardize the questions in terms of difficulty. The respondents evaluated the truthfulness of each statement by choosing between two options ('true' or 'false').

The perceived relevance of the stimuli. Participants were also asked to rate the text's perceived relevance. The subjective relevance of the writing was also indicated using a slider on a scale where 0 meant 'very irrelevant' and 100 meant 'very relevant'.

The level of trust towards the institution. Taking into consideration the influence of non-textual factors on the reception of the text, we wanted to examine the participants' attitudes towards the sender of the letter. To do this, we asked respondents about the level of trust they had in the sending office. To indicate this, respondents used a scale where 0 meant 'very low level of trust' and 100 meant 'very high level of trust'.

Feeling of helplessness after reading the text. Official letters can evoke various feelings, among them a feeling of helplessness. We asked respondents about their level of this affective state. They were asked to rate it using a slider on a scale marked as follows: 'not at all' (0) to 'to a high degree' (100).

Perceived comprehensibility of the text and its reasons. Besides examining the level of understanding of the writing by measuring the accuracy of responses, we wanted to find out how the study participants evaluated the letter. We asked them about the perceived comprehensibility of the text with a scale from 0 to 100, where 0 meant 'very difficult, incomprehensible' versus 100 for 'easy, understandable'. We were also interested to know the conscious reasons underlying the perceived difficulty of the text. Respondents could either rate the intensity of the listed potential factors on a scale of 0 to 100 (0 = 'to a small degree' vs. 100 = 'to a high degree') or select the 'other' option and formulate another, non-provided reason in their own words. Among those listed were as follows: (1) the language in which the writing was formulated,

(2) the amount of information in the text, (3) the location of the legal basis for the letter, (4) the context of communication with authorities (e.g., previous negative experience with authorities), (5) perceived emotions and (6) layout of the text.

Additional measurements included questions about the mood experienced after reading the text.

2.3.3. Independent variable operationalization

The independent variable was the type of emotion. Due to *valence*, we distinguished between positive and negative emotions. Referring to the *origin*, we divided emotions into automatic and reflective. Among automatic emotions, there were calmness, excitement, frustration and irritation. Reflective emotions included satisfaction, self-contentment, discouragement and anxiety. In addition, the independent variables we manipulated were the interpersonal relations (by personal or impersonal wording of the letter), grammatical forms (predominance of nominalizations or verbs) and structure – where the legal basis was indicated (in the main body of the letter or in footnotes at the end of the text).

Moreover, we also examined how often participants receive various letters from the office. We asked them to mark the frequency of getting official letters on a sliding scale (0–100), where 0 meant ‘very rarely’ and 100 meant ‘very often’. In addition, we also measured the amount of time that the respondents spent on reading the text – using an option in the Qualtrics software.

2.4. Procedure

This study was exploratory in nature. Due to the prevailing restrictions (COVID-19 pandemic) at the time, the study was conducted online using the Qualtrics platform. Information about the study was posted on forums and among groups of people living in different parts of Poland (e.g., announcement groups, neighbourhood forums). The information included the aim of the survey, the average time to complete it, the voluntary character of participation in the study, the anonymous nature of the survey, the group method of analysing the answers, and the possibility of receiving a prize for taking part in the survey via a raffle. Contact information was also provided to answer any questions regarding the study. The research announcement was not published on online blogs and pages for filling out questionnaires or survey assistance. Because the study aimed to examine how people with no legal backgrounds react to official letters, only participants without legal/administrative degrees or experience in working with such documents were invited to take part in the survey. That was indicated both in the announcement about the survey (posted on the forums) and in the information about the survey (after clicking on the survey link) and additionally verified in the question about the participant’s educational background.

Each respondent agreed to participate in the study by clicking on a survey link. At any time, it was possible to resign from the experiment without providing a reason. After clicking the link, the participant was once again presented with information about the study, and their reading time was measured. After this step, the respondent agreed to participate in the study by clicking. Participants were asked to disable other open browser tabs to ensure maximum focus on the task, which, due to the privacy concerns of the respondents, was not verifiable. Next, the level of emotion (determining the intensity of automatic and reflective emotions),

the arousal level and the valence of emotion (with the SAM scale) were examined. The study participant was then informed that the text of an official letter would be displayed on the screen: 'Imagine that the following letter has just come to you. Read it carefully. A few questions will be asked about it'. The text of the letter was displayed on the screen and the time spent on this page was measured (i.e., reading time).

After reading the text, the respondent independently went 'to the next page,' followed by another measurement of the intensity of emotion and affective dimensions such as arousal, and valence (with SAM). After this part, there was a measurement of the level of understanding the letter. Additional measurements were then also taken. Respondents were asked to indicate the level of relevance of the letter, their trust in the sender, their mood after reading the text and their perceived helplessness when reading the document. Participants were also asked about the frequency of receiving official letters. They were invited to rate the perceived comprehensibility of the text and indicate the reasons for this. Demographic information (age, gender, degree, field of study) was then requested. Respondents were provided with information on how all the texts they read were produced and that they had a chance to win a raffle prize. An email address was also provided for contact and questions about the survey.

2.5. Statistical analysis

To verify the adopted research hypotheses, the following analyses were conducted using the SPSS programme (version 29). We examined the intensity of experienced emotions, as well as level of affective dimensions (arousal and valence with SAM scale) using a repeated-measures analysis of variance (ANOVA) in a mixed design: 2 (structure: position of legal basis – within the document or in the footnote) \times 2 (grammatical forms: nominalizations or verb forms) \times 2 (interpersonal relations: personal and impersonal forms) \times 2 (type of emotional valence – positive and negative) \times 2 (type of emotional origin – automatic and reflective) \times 2 (measurement moment – before and after reading the text).

Additional measurements analysed further by a multivariate ANOVA were the level of text comprehension, perceived difficulty of an official letter, subjective relevance of the writing, level of trust towards the sender and mood after reading the letter. We used post hoc tests with Bonferroni correction in the analyses.

Moreover, in addition to the analyses indicated, we also conducted analyses using linear regression (with the entry method). We checked which factors (the location of the legal basis for the decision, the way the letter is worded – the predominance of nominalizations/verbs; personal/impersonal mode) affect the dependent variables – the level of understanding of the text (answer accuracy) and the assessment of the difficulty of the letter (perceived comprehensibility) as well as the helplessness declared by a reader after reading the letter. The assumption of collinearity between the variables was tested. The VIF index did not show that one occurred. Finally, as a complement to the results obtained, we conducted pairwise correlation analyses. Because the variables studied did not meet the assumptions of normality of distribution, we used a non-parametric, rho Spearman correlation test.

Due to the results' complexity, the data will be reported sequentially for each of the independent variables, including structure (legal basis position), grammatical forms

(nominalizations) and interpersonal relations (personal forms). Other results will be discussed subsequently.

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The analysis code DOI: [10.6084/m9.figshare.25061738](https://doi.org/10.6084/m9.figshare.25061738).

3. Results

3.1. Structure: effects related to the position of the legal basis of the decision

3.1.1. The differences in the level of emotions experienced before and after reading the letter and the location of the legal basis (H1a)

The level of *experienced emotions* declared by respondents differed according to the position of the *legal basis*: $F(1,667) = 10.11$, $p = 0.002$, $\eta^2 = 0.015$, 95%CI [0.00, 0.04]. After reading the writings in which the legal basis was indicated within the document, participants declared a higher level of emotions ($M = 45.23$, $SD = 10.05$), compared to those who read texts where the reference to the legal provisions was indicated in a footnote, at the end of the document ($M = 43.36$, $SD = 11.20$), $t(683) = -2.29$, $p = 0.022$. These results are illustrated in [Figure 2](#).

3.1.2. The position of reference to the legal basis and answer accuracy (H1b)

Significant differences were also observed in the level of *reading comprehension* (measured by the accuracy of responses) depending on where the legal basis for the decision was cited: $F(1,677) = 10.063$, $p = 0.002$, $\eta^2 = 0.015$, 95%CI [0.00, 0.04]. In the group in which the reference to legal provisions was in the footnote of the letter, the participants performed significantly higher ($M = 3.27$, $SD = 0.91$) than in the group in which the letter began with an indication of the legal provisions ($M = 3.04$, $SD = 0.99$), $t(683) = 3.18$, $p = 0.002$. These results are presented in [Figure 3](#).

As can be seen in [Figure 4](#), from all conditions, only legal basis placement has a significant impact on the level of answer accuracy.

In addition to the ANOVA, we conducted a linear regression analysis using the enter method, which confirmed the above results. The detailed results of the analyses, along with the standardized and unstandardized regression factors, are presented in [Table 1](#).

The analysis showed that the model significantly predicts the level of text comprehension, $F(3;684) = 4.24$; $p = .006$; $R^2_{adj} = .014$. The model explains 1.4% of the variance in this variable.

As presented in [Table 1](#), only the location of the legal basis for the settlement turned out to be a significant predictor of the dependent variable. The values of the standardized regression coefficients *Beta* indicate that the level of comprehension of the text is greater the further in the text the legal basis (quoted in the footnotes) appears. However, the size of the standardized effect allows us to conclude that this relationship is weak.

3.1.3. The differences in experienced helplessness and the position of indicating the legal basis for the decision

Analyses also revealed significant differences in *perceived helplessness* depending on where the legal basis for the decision was located: $F(1,677) = 9.24$, $p = 0.002$, $\eta^2 = 0.013$, 95%CI [0.00, 0.04]. In the group where legal provisions were cited within

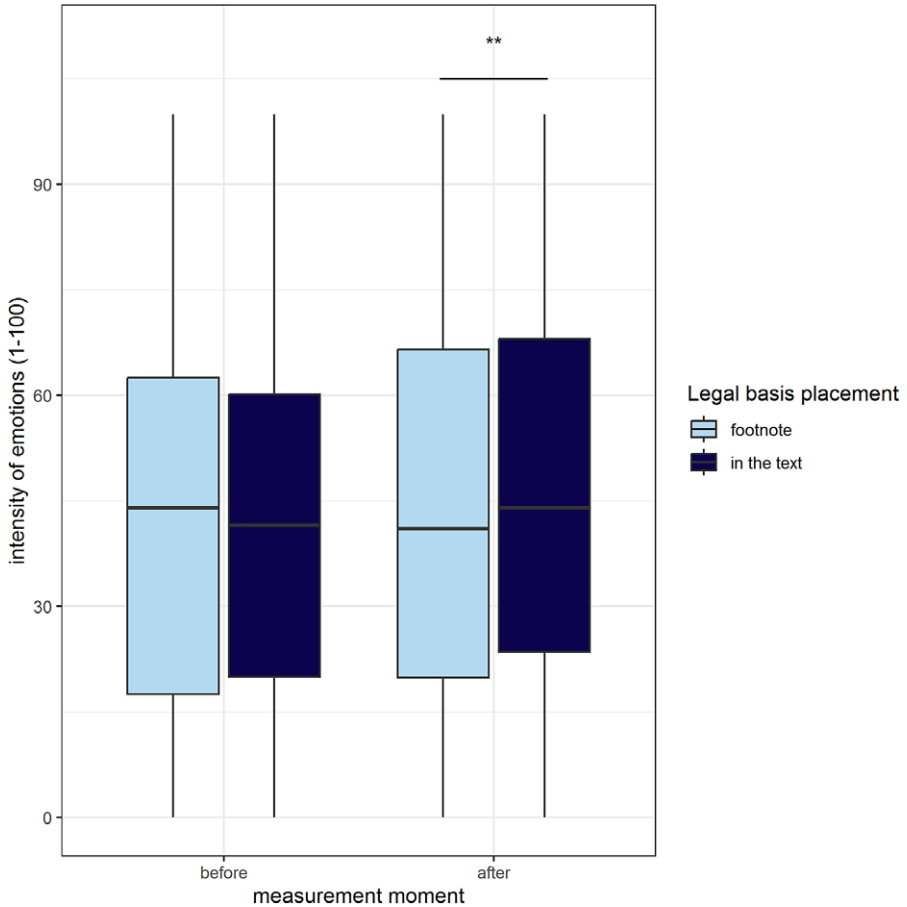


Figure 2. Position of the legal basis of the decision and the intensity of the emotions experienced.
 Note: Lines with asterisks show statistical significance: ** $p < .005$, * $p < .05$.

the document, from the first paragraph of the letter, the level of perceived helplessness was significantly higher ($M = 56.06$, $SD = 29.34$), compared to the group of participants who read the writing with the legal basis indicated in a footnote ($M = 49.21$, $SD = 29.43$), $t(683) = -3.035$, $p = 0.002$. The above findings are summarized in Figure 5.

Furthermore, we conducted linear regression analysis again for this dependent variable – perceived helplessness, $F(3;684) = 3.10$; $p = .026$; $R^2_{adj.} = 0.009$. The model explains solely around 1% of the variance in this variable. Again, the only variable that significantly predicts the level of helplessness was the location of the legal basis for the decision: $B = 6.81$, $SE = 2.25$, $Beta = .12$, $t = 3.03$, $p = .003$. According to the results of the analysis, it is assumed that as the independent variable increases, the measure of the dependent variable grows – when the legal basis is located in the body of text, the helplessness rises.

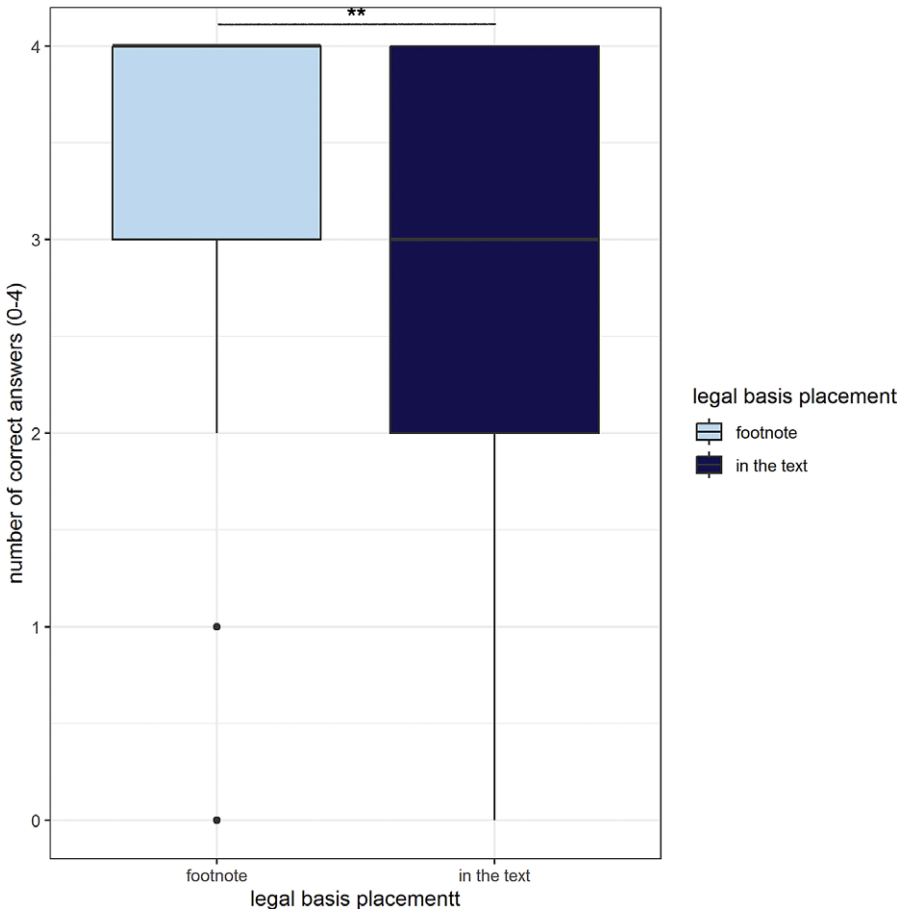


Figure 3. The way of presenting the legal basis and the level of understanding of the letter.
 Note: Lines with asterisks show statistical significance: ** $p < .005$, * $p < .05$.

3.1.4. The position of legal basis and the perceived comprehensibility of the letter

Another effect related to the location of the legal basis was the subjective evaluation of the difficulty of the writing (*perceived comprehensibility*): $F(1,677) = 53.42$, $p < 0.001$, $\eta^2 = 0.074$, 95%CI [0.04, 0.11]. Participants who read writings in which the reference to the legal basis was in the first sentence rated it as less accessible and comprehensible ($M = 35.89$, $SD = 24.60$) than those respondents who read texts with the indication of the legal basis in a footnote ($M = 50.06$, $SD = 25.91$), $t(683) = 7.31$, $p < 0.001$. The results are illustrated in Figure 6. Analyses also revealed an interaction effect of intensity of emotions (in terms of *emotional origin* and *emotional valence*), *measurement moment* and position of indicating *legal basis*: $F(1,667) = 10.09$, $p = 0.002$, $\eta^2 = 0.015$, 95%CI [0.00, 0.04].

Note: Lines with asterisks show statistical significance: ** $p < .005$, * $p < .05$.

Again, only legal basis placement had an impact on perceived comprehensibility, as illustrated in Figure 7.

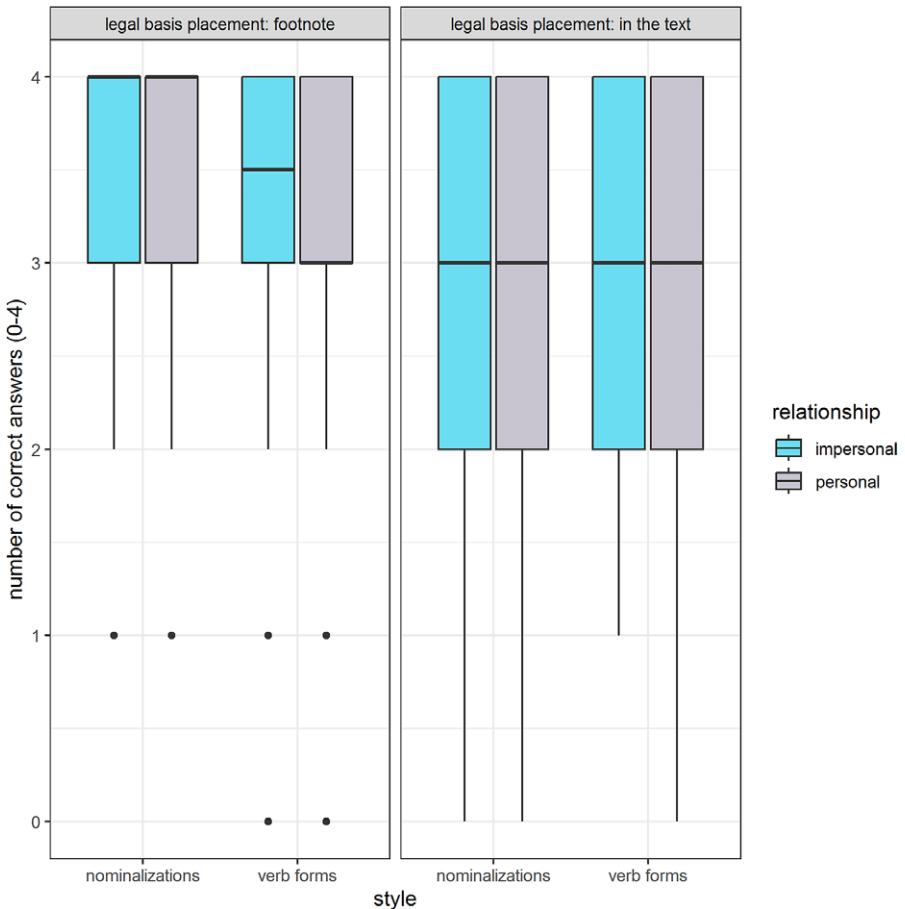


Figure 4. The level of understanding the letter – a comparison of the results of the answer correctness depending on the condition.

Table 1. Regression model predicting reading comprehension growth (answer accuracy) based on legal basis placement, nominalization/verbs, and the personal/non-personal form of the text

	<i>B</i>	<i>SE</i>	<i>Beta</i>	<i>t</i>	<i>p</i>
(Constant)	3.34	.72		46.26	<0.001
Legal basis placement	-.23	.072	-.12	-3.17	.002
Nominalizations vs. verbs	-.12	.072	-.06	-1.61	.108
Impersonal vs. personal forms	.01	.072	-.01	-.13	.899

Note: *B*, non – standardized regression coefficient; *SE*, standard error; *Beta* – standardized regression coefficient; *t* – result of Student’s *t* test; *F*, variance analysis result; *R*²*adj.*, adjusted *R*-square. Dependent variable: Level of understanding of writing (answer accuracy).

That was also confirmed by linear regression results. The analysis showed that the model significantly predicts the level of the rated comprehensibility by independent variables, $F(3;684) = 17.85$; $p = 0.001$; $R^2_{adj.} = 0.069$. The model explains 6.9% of the variance in this variable.

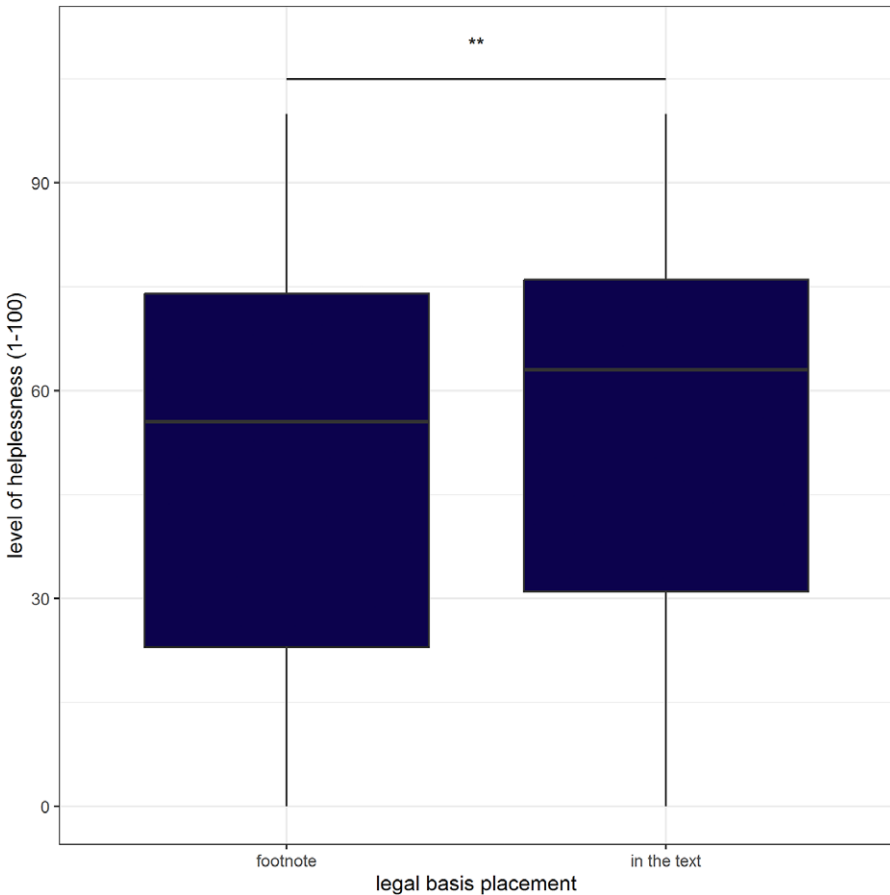


Figure 5. A sense of helplessness depending on where the legislation was indicated.
 Note: Lines with asterisks show statistical significance: ** $p < .005$, * $p < .05$.

Again, only the location of the legal basis for the settlement turned out to be a significant predictor of the dependent variable. The values of the standardized regression coefficients *Beta* indicate that the level perceived comprehensibility of the text is greater the further in the text the legal basis (quoted in the footnotes) appears (see Table 2).

3.2. Grammatical forms: effects related to the language of the text: verb forms versus nominalizations

3.2.1. The intensity of automatic and reflective emotions before and after reading an official letter and the saturation of the text with nominalizations (H2b)

Significant intergroup differences were also observed in the intensity of reflective emotions (origin) after reading the text (measurement) depending on the saturation of letters with verbs or nominalizations (*nominalizations*): $F(1,667) = 5.13$, $p = 0.024$,

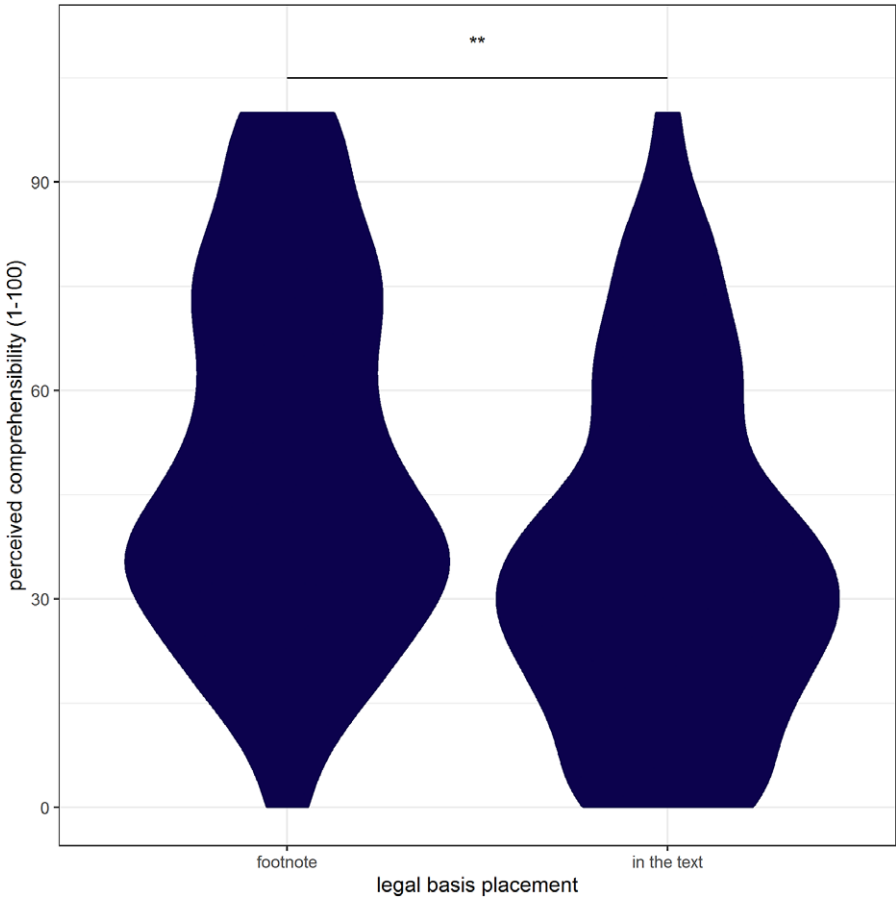


Figure 6. The impact on the position of the legal basis on the perceived comprehensibility of the document.

$\eta^2 = 0.007$, 95%CI [0.00, 0.03]. The level of experienced reflective emotions after reading the text was significantly higher in the group of respondents who read letters rich in nominalizations ($M = 46.24$, $SD = 11.20$), compared to those participants who read writings with a predominance of verbs ($M = 43.75$, $SD = 12.80$), $t(683) = 2.72$, $p = 0.007$ (Figure 8).

3.2.2. Structure and grammatical forms: position of the legal basis and nominalizations – interaction effects

The intensity of the emotions experienced depended on the way the legal basis for the decision was indicated and the saturation of the official letter with nominalizations. The analyses also revealed significant differences in the level of experienced emotions due to the place the legal basis appeared and the saturation of the letter with nominalizations: $F(1,667) = 7.12$, $p = 0.008$, $\eta^2 = 0.10$, 95%CI [0.00, 0.03]. Respondents who read letters with the legal basis cited at the beginning of the text and with nominalizations ($M = 44.60$, $SD = 8.73$) declared significantly higher levels of

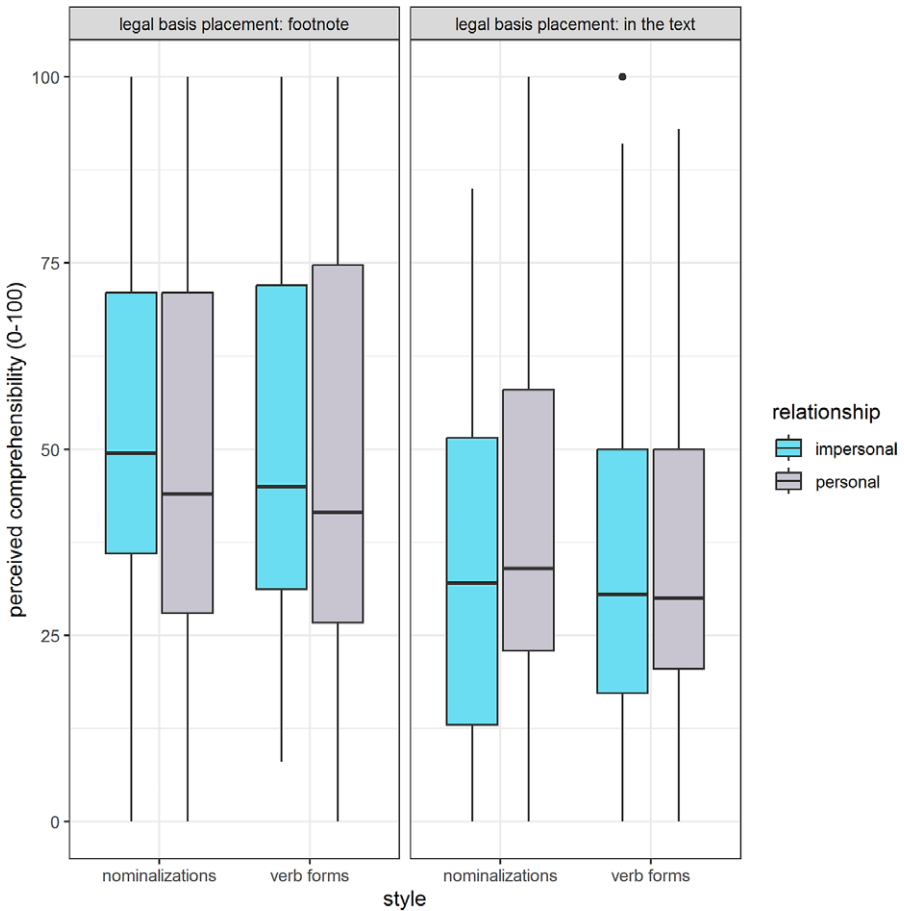


Figure 7. The level of perceived comprehensibility of a text rated by study participants – a comparison of the results depending on the condition.

Table 2. Regression model predicting an increase in the perceived comprehensibility of the writing based on legal basis placement, nominalization/verbs, and the personal/non-personal form of the text

	<i>B</i>	<i>SE</i>	<i>Beta</i>	<i>t</i>	<i>p</i>
(Constant)	50.64	1.93		26.29	<0.001
Legal basis placement	-14.11	1.93	-.27	-7.30	<0.001
Nominalizations vs. verbs	-.99	1.94	-.02	-.51	.609
Impersonal vs. personal forms	-.14	1.94	-.00	-.07	.94

Note: *B*, non – standardized regression coefficient; *SE*, standard error; *Beta* – standardized regression coefficient; *t* – result of Student’s *t* test; *F*, variance analysis result; *R*²_{adj.}, adjusted *R*-square. Dependent variable: Level of perceive comprehensibility of the text.

emotions, compared to those who read letters in which (also) the legal basis was indicated at the beginning, but the text was dominated by verbs ($M = 41.37, SD = 9.22$). Figure 9 illustrates these findings.

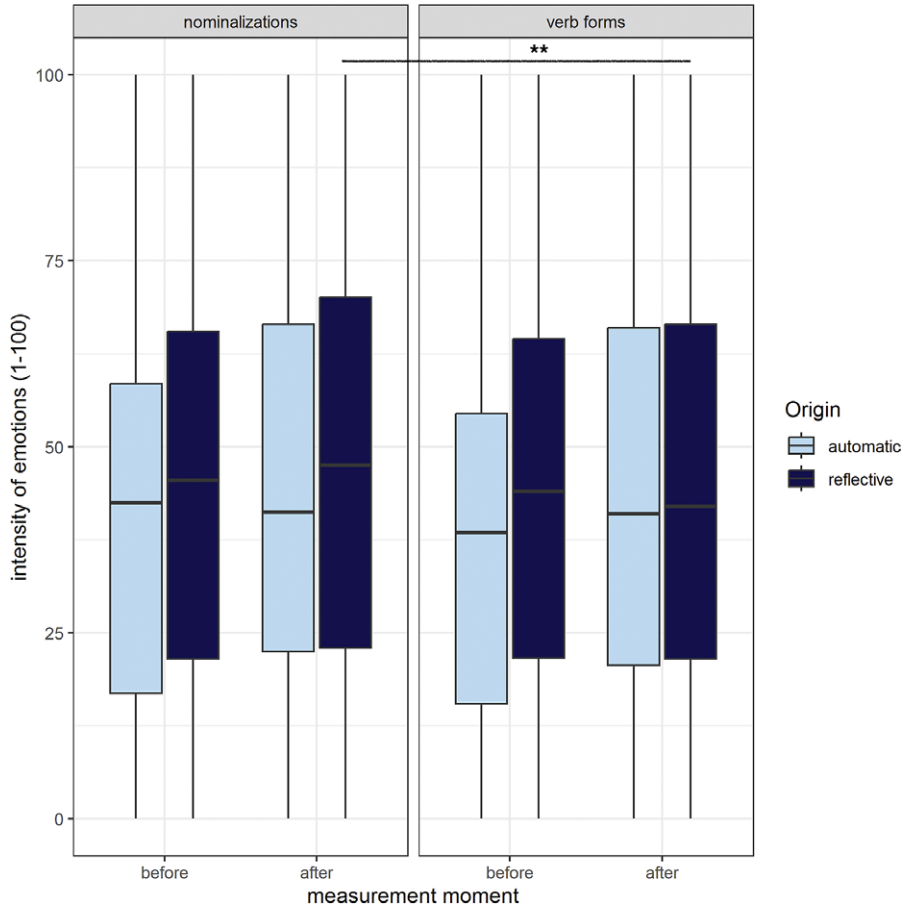


Figure 8. Differences in experienced emotions (automatic and reflective) versus text saturation with verb forms or nominalizations before and after reading the text.
 Note: Lines with asterisks show statistical significance: ** $p < .005$, * $p < .05$.

Differences were also observed in the level of arousal (SAM) before and after exposure to the writing (measurement), depending on the saturation of the writing with nominalizations (vs. verbs) and where the legislation was cited (structure): $F(1,677) = 4.70, p = 0.30, \eta^2 = 0.007, 95\%CI [0.00, 0.02]$.

3.3. The relational aspect – effects related to the way of addressing the recipient and revealing the sender (personal and impersonal forms)

Contrary to our assumptions (H3b), we did not observe significant effects related to the impact of personal or impersonal wording on lower text comprehension (answer accuracy) and the level of automatic and reflective emotions experienced (H3a).

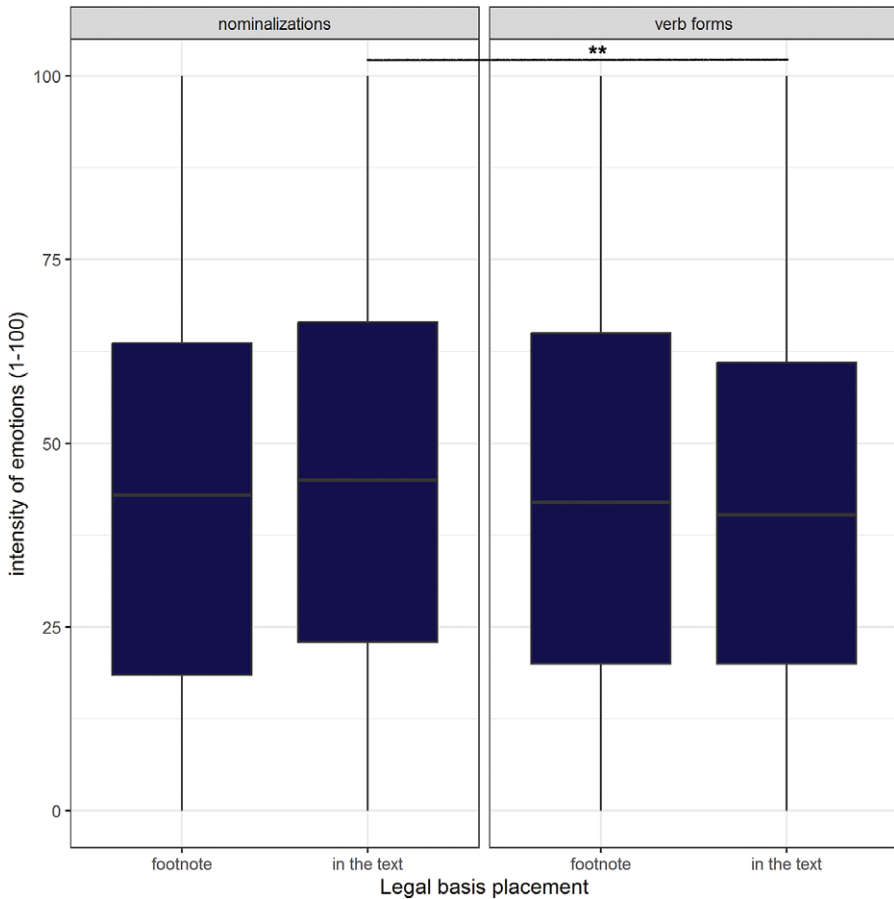


Figure 9. The influence of the position of the legal basis and the nominalizations on the level of emotions experienced.

Note: Lines with asterisks show statistical significance: ** $p < .005$, * $p < .05$.

3.3.1. The level of arousal and the way of indicating the addressee and recipient (personal and impersonal forms) versus the legal basis location – interaction effects

However, analyses revealed the differences in arousal levels depending on the personal mode of the text and how the legal basis was indicated. Differences in the intensity of arousal were observed in recipients of impersonally worded letters depending on where the legal basis was cited: $F(1, 677) = 6.07$, $p = 0.014$, $\eta^2 = 0.009$, 95%CI [0.00, 0.03]. Higher levels of experienced arousal were noted in those reading an impersonally phrased letter with the legal basis indicated in the main text ($M = 3.08$, $SD = 0.80$) than in the group where the legal basis was indicated in a footnote ($M = 2.87$, $SD = 0.85$), $t(340) = -2.21$, $p = 0.028$ (Figure 10).

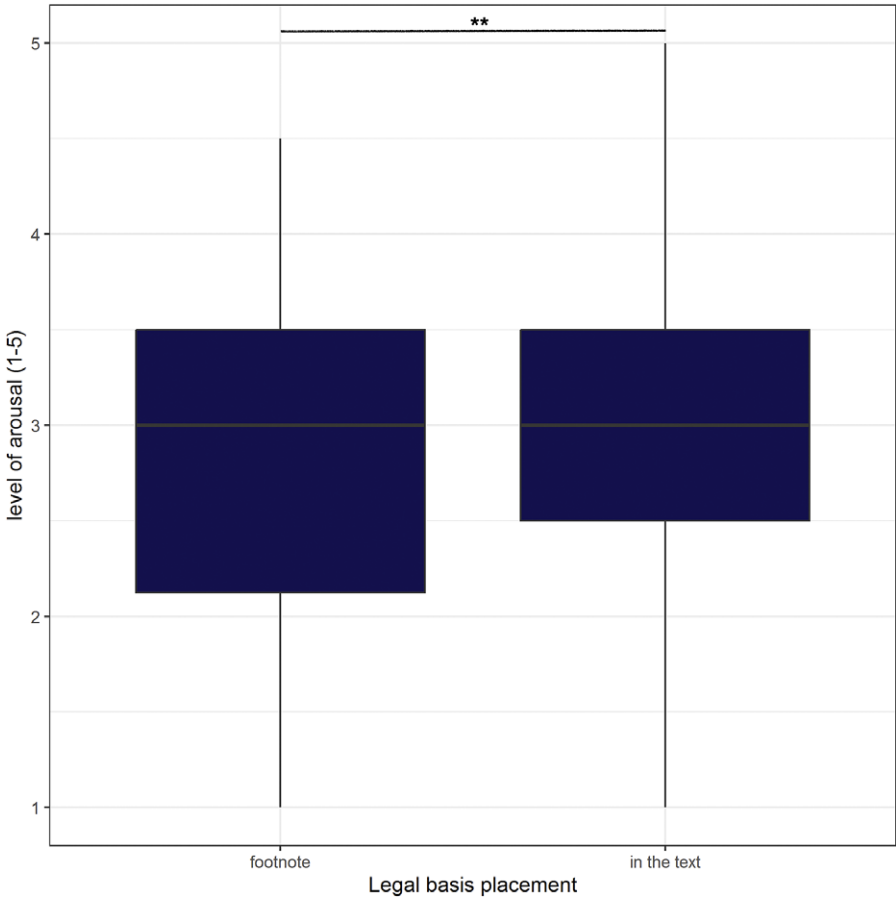


Figure 10. The impact of legal basis position on the level of arousal among participants reading impersonally worded letters.

Note: Lines with asterisks show statistical significance: ** $p < .005$, * $p < .05$.

3.4. Other results

3.4.1. Differences in the intensity of experienced emotions across measurement stages

Other differences were observed in the intensity of declared emotions before and after exposure to the writings (measurement): $F(1,667) = 50.16$, $p < 0.001$, $\eta^2 = 0.069$, 95% CI [0.03, 0.10]. After reading official letters, participants reported higher levels of experienced emotions ($M = 44.29$, $SD = 10.68$) than before the study ($M = 41.26$, $SD = 11.20$), $t(684) = -7.04$, $p < 0.001$.

3.4.2. The intensity of positive and negative emotions before and after reading the letter

The analyses also indicated significant differences in the intensity of positive and negative emotions (emotional valence) at both measurement moments: $F(1,667) = 736.48$, $p < 0.001$, $\eta^2 = 0.521$, 95% CI [0.48, 0.57]. In terms of negative

emotions, an increase was observed after contact with the official letter ($M = 61.13$, $SD = 21.72$), compared to the declared intensity of these emotions before the study ($M = 34.19$, $SD = 25.35$). As for positive emotions, the opposite shape of the results was observed – their level decreased after reading the letter ($M = 27.44$, $SD = 17.42$), before the study was $M = 48.33$, $SD = 19.41$. Negative emotions before the study were significantly lower than positive emotions at that measurement moment, while after contact with the writing, negative emotions significantly outweighed positive ones ($p < 0.001$).

3.4.3. Changes in the intensity of experienced automatic and reflective emotions before and after reading a letter

Differences in automatic and reflective emotions (origin) were observed before and after reading the text of the official letter (measurement): $F(1,667) = 40.495$, $p < 0.001$, $\eta^2 = 0.056$, 95%CI [0.03, 0.09]. Analyses showed an increase in automatic emotions after reading the letter ($M = 43.54$, $SD = 12.70$) in relation to their intensity before reading the text ($M = 38.42$, $SD = 13.04$). The level of automatic emotions (before and after familiarization with the document) was also significantly lower than that of reflective ones (at both moments of their measurement), including before reading the writing ($M = 44.09$, $SD = 13.57$) and after ($M = 45.03$, $SD = 12.06$). No significant differences were observed in the reflective emotion group.

3.4.4. The difference in the dimensional valence (SAM) before and after reading the text

The above-reported findings also confirmed the results of measuring the valence level using the SAM scale. Analyses also revealed an emotional valence effect: $F(1,677) = 379.778$, $p < 0.001$, $\eta^2 = 0.354$, 95%CI [0.31, 0.41]. A significant decrease in averages (towards the negative valence) was observed after contact with the writing (measurement) ($M = 2.50$, $SD = 0.92$), compared to the level declared before the study ($M = 3.31$, $SD = 0.92$), $t(684) = 19.36$, $p < 0.001$.

3.4.5. Differences in arousal levels before and after reading the official letter

In terms of the level of arousal, as measured with the SAM scale, significant differences were also observed depending on the moment of measurement: $F(1, 677) = 311.29$, $p < 0.001$, $\eta^2 = 0.315$, 95%CI [0.26, 0.37]. Participants reported higher levels of arousal after reading the letter ($M = 3.66$, $SD = 0.99$) than before ($M = 2.66$, $SD = 0.94$), $t(684) = -17.52$, $p < 0.001$.

3.4.6. Effects of correlation analysis

As a complement to the previous reports, we also conducted a correlation analysis. We found among other things, that the correctness of answers correlated positively with perceived text comprehension scores, $\rho = .094$, $p = .014$. This was a weak but statistically significant effect. We also observed that the relevance of the letter to the respondent positively correlated with the correctness of the answer, $\rho = .156$, $p = .001$.

We also found interesting results connected to the correlation of frequency of receipt of official letters and mood after reading the stimulus text $\rho = .142$, $p = .001$ indicating that frequent reading of similar documents was co-related with better emotional well-being after reading the text during the study. This effect, although weak, is complemented by a negative correlation of the frequency of receiving official

letters with helplessness after reading the letter $\rho = -.086, p = .024$, confirming the above result.

It is also worth pointing out the moderate but significant results regarding trust in the tax office. This variable correlated positively with the letter's perceived comprehensibility rating $\rho = .309, p = .001$, relevance of the text to the respondent $\rho = .201, p = 0.001$, feeling good after reading the document $\rho = .186, p = .001$ and negatively with helplessness $\rho = -.292, p = .001$.

The other results are reported in [Supplementary material S1](#).

4. Discussion

4.1. Structure: location of the legal basis

The results supported most of the hypotheses established. Above all, regarding the first hypothesis (H1a), our expectations were fully confirmed. A change in way of presenting legal basis for the settlement (in the body of the document, starting from the beginning of the letter vs. in the footnotes at the end of the text) greatly influenced its reception. We observed significant differences in the level of emotions experienced between the groups. In the group where the legal basis appeared in the body of the text, respondents reported significantly higher levels of experienced emotion. The same respondents also indicated a higher level of perceived helplessness. This condition also lowered the level of understanding – those respondents who read the letter with the legal basis quoted at the very beginning of the document achieved significantly lower accuracy in the reading comprehension tasks (H1b). Moreover, according to regression analysis, the placement of the legal basis was the only significant predictor of perceived helplessness, answer accuracy and perceived comprehensibility.

These results show that it is possible to achieve greater effectiveness in a letter without abandoning its obligatory elements, as reflected by the Code of Administrative Procedure letter used in this study. Moreover, the modification of the order in which the content is presented itself has an impact on perceived helplessness and the intensity of emotions associated with reading the text. In addition, respondents in the group where the legal basis appeared first rated the writing as more difficult. These results confirm the suggestions made by respondents in the qualitative study (Jankowska & Imbir, 2022) and by linguists (Cieśła, 2021; Piekot, 2021). The order of presented content should be based on the principle of the so-called *inverted pyramid*. Due to this rule, the most important information for the reader should be cited at the beginning of a text (Glapiak, 2017). Of course, in many documents, the citation of the legal basis is mandatory, but by far more important for the reader is the content of the decision. Hiding it in a mass of regulations increases the helplessness of the user (Cieśła, 2021) who may sometimes even feel intimidated (Glapiak, 2017). As far as the regulations allow, it is therefore recommended to move the legal basis from the beginning of an official letter to elsewhere (cf. Piekot, 2021). This result confirms earlier reports indicating structure as one of the most influential factors in the perception of writing (Groeben, 1982).

4.2. Language: saturation with verbs or nominalizations

In terms of the following hypothesis, some of our assumptions about the influence of verbs/nominalizations on the reception of writing proved to be correct. Texts that

were rich in nominalizations evoked significantly higher levels of reflective emotions in the group reading these texts, compared to respondents reading writings in which verbs were more common (H2b). Moreover, this effect was also confirmed when interacting with another factor – the place of citation of the legal basis for the decision discussed above. Respondents reading letters characterized by nominalizations with the legal basis placed within the document reported significantly higher levels of emotion than those reading letters in which legal provisions were cited in the body of the text, but verbs were present. However, the analyses did not show a significant influence of this variable on answer accuracy and the perceived comprehensibility of the text (H2a). Thus, this effect does not explain the actual impact of the occurrence of nominalization on the difficulty of writing and the trouble in its reception.

4.3. Relationship: the form of addressing the recipient of the letter

The results on the effects related to personal and impersonal mode of the letter are somewhat surprising. Analyses revealed no effect of the isolated relationship variable on the level of experienced automatic and reflective emotions in the study participants (H3a). However, we observed interesting results of this variable in interaction with the legal basis placement. Impersonal texts with the legal regulations cited in the body of the text, starting from the beginning of the document were associated with higher levels of arousal than impersonal letters with the legal basis cited in a footnote, at the end of the letter. Perhaps, as argued by Matyjaszczyk-Łoboda (2021), addressable, personal forms focus the attention of the recipient and are more engaging, which may also lead to this shape of emotional response. Moreover, the interaction effect between the legal basis and impersonality may in turn confirm that this combination of factors is perceived as more threatening. In the context of what has been discussed so far, it is worth noting that the previously mentioned factors considered to impede the message often co-occur with each other – among others, with impersonality often comes the passive form or nominalizations (Charrow et al., 2015; Charrow & Charrow, 1979; Czerwińska, 2016). However, our assumptions regarding the influence of personality on the emotions experienced (H3a) and the answer accuracy (H3b) were not confirmed. Interestingly, impersonal forms also did not affect the level of trust in institutions (Andrzejewska, 2023). In the future research, it would make sense to examine this variable at more than two levels, which can reveal these relationships in a broader light.

4.4. Other results

In terms of emotional origin, higher levels of experienced reflective versus automatic emotions were observed after reading the letter. This is the expected shape of the results – official letters are complex stimuli, requiring the involvement of systematic processing when reading and understanding them, for which these affective reactions are characteristic (Imbir, 2016). In terms of emotional valence – negative emotions dominated when in contact with the letter, while the level of positive emotions decreased. The overall level of emotion increased after contact with the letter. These data suggest that official letters are perceived aversively. This is also confirmed by the gradual increase in automatic emotions after contact with this stimulus, which also confirms previous findings (Jankowska & Imbir, 2022).

These results were also confirmed in the dimensional measure (the SAM scale) with which we also observed a shift towards negative emotions in dimensional valence. As for the level of arousal, we noted a significant increase in this factor after reading the document. In this context, it is interesting to note the dominance of reflective emotions cited earlier, those specific to the analytical processing system as opposed to arousal, which is an activator of the heuristic system. This shows just how complex and ambivalent stimuli official letters can be.

In addition to the results discussed, it is also worth referring to the effects observed in the correlation analyses. Although the effects took low values, they were statistically significant and may provide directions for further research. The analyses showed a low correlation value of correctness of answers and perceived comprehensibility of writing. Along with the participants' high rating of the writing difficulty, the high correctness of the answers co-occurred. It is difficult to clearly indicate what was the cause of this effect. Perhaps the evaluation of the text as difficult fostered its careful reading, leading to a higher level of understanding of it. At the same time, the overestimation of the level of difficulty of the writing may have been due to the emotions experienced during its reading. Based on the data obtained, it is not possible to explain this effect directly. It indicates a limitation of the study and is worth exploring in future studies.

Another interesting effect was the correlation between the relevance of the text to the respondent and the correctness of the answer. This result may be related to the mechanism that activates deeper processing characteristic of System 2 which is subjective significance (Imbir et al., 2017). On the other hand, the frequency of receiving official letters was associated with better mood after reading the letter and negatively related to helplessness. Perhaps, more frequent familiarization with the text reduced the level of discomfort associated with reading the letter. Finally, it is worth referring to the effects related to trust in the tax office. We observed significant positive correlations between perceived comprehensibility of the letter and the relevance of the text to the reader, as well as a negative relationship with helplessness after reading the document. This weak but significant effect may provide scope for further research, confirming the researchers' hypotheses regarding the connection between the sender's image in the eyes of the reader and perception of the text (Andrzejewska, 2023).

4.5. Limitations

The survey has its limitations. Due to the ongoing COVID-19 pandemic in Poland, it was conducted online. We tried to take care of the quality of the data – the results were thoroughly analysed: observations that were incomplete or completed below the minimum time were removed. Despite the existing limitations, we were also interested in reaching a diverse and representative sample of people living in all parts of the country, with different educational and academic degrees, and of different ages. However, women with higher education predominated among the survey participants. In future surveys – especially given the area of interest – it would be crucial to examine a more diverse group, including people with lower levels of education and conduct the survey under conditions that allow control over other activities of the respondent during the study.

Another major limitation was the construction of the emotion scales we used in the study. Despite several stages of preparing the subscales, grounded in theory, a

pilot study and competent judges, not all subscales correlated with each other. In future research, it would be important to take care of the proper selection of items for the scales.

The study was exploratory in nature. In future studies, it would be worthwhile to increase the number of levels of independent variables, among other things, to study them at more than two levels, which would perhaps show the phenomenon more fully.

5. Conclusion

In their conventional form, official letters are difficult to process by a recipient without expert knowledge and, as such, do not fulfil their function. According to Czerwińska (2016), they are even a *message a rebours*: Instead of informing, they introduce confusion, a sense of powerlessness and uninformativeness. Adapting them to their audience is the responsibility of organizations that respect basic individual freedoms. Inaccessible texts limit the civil and consumer rights of those with the weakest reading skills (Glapiak, 2017), including foreigners who, paradoxically, are often forced to undertake various official activities upon arrival in the country (Cieśla, 2021). This is also an important factor affecting the success and efficiency of official services (Cieśla, 2021; Piekot et al., 2019). The results of the cited studies indicate a significant impact of editorial changes in the perception of these incentives, which may consequently improve their effectiveness. Given the link between emotional and cognitive processes, simplifying these documents at the level of structure, language and relational dimensions may also contribute to better processing. Considering the recipient's reactions should be a starting point in the design of subsequent reforms (Cieśla, 2021). However, these changes cannot go too far – writings should be friendlier and clearer regardless of the recipient's education, but stimulate the reader to engage cognitive processes and process more deeply (Groeben, 1982; Lutz, 2015). It is also worth mentioning that, according to research, simplifying a text does not always translate into increased accessibility – as Bailin and Grafstein (2016) point out, difficulty does not always affect comprehension. That is why it is so important to consider both factors – the way the text is formulated and its processing and verify the researchers' findings in empirical studies.

Supplementary material. The supplementary material for this article can be found at <http://doi.org/10.1017/langcog.2024.14>.

Data availability statement. The anonymized data on which all statistical analyses discussed in this article were based and the analysis code are publicly available.

Competing interest. The authors declare none.

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