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van den Heijkant, L.; van Selm, M.; Hellsten, I.; Vliegenthart, R.

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Empirical Article

Justice Matters. News Framing Effects on Opinions about Pension Reform

Linda van den Heijkant¹, Martine van Selm², Iina Hellsten¹, and Rens Vliegthart³

¹Amsterdam School of Communication Research (ASCoR), University of Amsterdam, Amsterdam, The Netherlands

²Erasmus Research Centre for Media, Communication and Culture (ERMeCC), Erasmus University Rotterdam, Rotterdam, The Netherlands

³Strategic Communication Group, Wageningen University & Research, Wageningen, The Netherlands

Corresponding author: l.vandenneijkant@uva.nl

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Abstract

As aging populations put pressure on pension systems worldwide, pension reforms have dominated the (political) agenda in many countries for years. The media are essential information providers on such hotly debated issues. By selecting and highlighting certain aspects of an issue and glossing over others, also known as framing, news media can propagate a particular interpretation of the issue to the public. This study therefore approaches pension reform from the perspective of the media by examining how news frames of pension reform (i.e., responsibility frame and justice frame) influence how citizens perceive and respond to pension reform. Findings of an online survey-embedded experiment ($N = 762$) show that citizens who encountered a news frame that emphasized individual or collective responsibility for pensions showed a stronger preference for this type of responsibility; however, this effect was only positive if news media also framed individual or collective responsibility for pensions as just. In fact, exposure to an unjust frame leads to more negative attitudes toward the specific form of responsibility. Regarding individual differences, lower-educated people are more strongly impacted by the responsibility frame than higher-educated people. The strength of framing effects did not differ among citizens of different ages or levels of solidarity, nor between citizens who received the frames via their primary mode of news use and the ones exposed to a less preferred mode of news use. This study shows the importance of news framing in shaping citizens' attitudes toward pension reforms, suggesting that media coverage matters in the public debate on pensions.

As aging populations put increasing pressure on the financial sustainability of pension systems, pension reform has been a persistent issue on the political agenda in Europe for years (Hershey et al., 2017; OECD, 2019; Van Groezen et al., 2009; Van Solinge & Henkens, 2017). However, implementing pension reforms can be a challenging task as it involves balancing the long-term sustainability and affordability of pension provision with the short-term negative consequences for (parts of) society, whose access to pension benefits may be reduced or postponed. These short-term negative consequences can lead to resistance from the affected individuals and groups, making it difficult to gain the public support that is crucial for the success of a reform measure. A well-informed electorate that understands the need and underlying considerations for reform is therefore essential.

The media take on this role of informing citizens about current events and policies (e.g., Chaffee & Kanihan, 1997; Eveland & Schmitt, 2015) and serve to convey social understanding and expectations (Gettings, 2018). How citizens view pension reforms and their level of support (or opposition) to them may therefore be shaped, at least in part, by how a reform measure is depicted in the media. By emphasizing certain aspects of an issue at the expense of others, also known as framing, the media provide a particular interpretation of

an issue, which in turn can influence how citizens view such (sociopolitical) issues (De Vreese, 2005; Entman, 1993). The information function of the media and the effect of framing on public opinion may be even more significant in the context of pension reform because of its complex, uncertain, and forward-looking nature, which makes it a difficult topic for many people to understand and a life stage too far away to actively think about. Media system dependency theory argues that precisely for such topics that go *beyond* people's direct knowledge or experiences, citizens are more dependent on and sensitive to media messages (Ball-Rokeach & DeFleur, 1976; Damstra & Boukes, 2018).

Therefore, the role of the media in the pension reform debate should not be underestimated. Nevertheless, although existing research has focused on explaining citizens' views on pension reforms (Boeri et al., 2002; Gelissen, 2001; Jaime-Castillo, 2013; Parlevliet, 2017), little is known about the influence of news media in this regard. The few studies that did focus on the media in their research on pension reforms mainly examined the *content* of media coverage (Hagelund & Grødem, 2017; Van den Heijkant et al., 2022). The current study adds to the existing literature by empirically examining the *consequences* of the media, and more specifically of news framing, on citizens' attitudes toward (reforming)

the pension system. To examine this, we conduct an online survey-embedded experiment in the Netherlands in which we expose participants ($N = 762$) to different news frames of pension reform before measuring their preferences and opinions on this topic.

The Netherlands provides an exemplary case as it resembles other (European) countries where, given the trend of an aging population, a sociopolitical debate is taking place about how to keep pension provision affordable. The discussion about possible solutions and how to move forward with pension systems cannot take place without considering justice between and within generations. Such a discussion touches on what pension claims citizens can rightfully make on society and the degree of solidarity with one another (Schokkaert & Van Parijs, 2003). In this light, the question of who should be responsible for providing an (adequate) retirement income is becoming increasingly important (Gelissen, 2001; Hagelund & Grødem, 2017; Van Dalen & Henkens, 2016). Many (proposed) pension reforms give rise to a reform of the balance of responsibility between government, employers, and individuals, emphasizing responsibility for one's own retirement savings and income (Hyde & Dixon, 2009). In view of this, we focus on two frames, presented in either traditional or social media to reflect today's news media landscape: A responsibility frame that advocates either individual or collective responsibility for pensions and a justice frame that emphasizes the particular form of responsibility as unjust or just. We examine whether exposure to these different frames leads to differences in attitudes and assess the extent to which these news framing effects are enhanced by relevant individual conditions, in particular age, education level, sense of solidarity, and exposure to a primary mode of news use.

The (Dutch) pension system in an aging context

In many (European) countries pension consists of three parts: a basic pension from the state, a supplementary pension through the employer, and the voluntary money people set aside (Hershey et al., 2010). The Dutch pension system is an example of such a three-pillar system. A well-functioning pension system ensures sufficient pension income for everyone, including generations to come. Although the pension system in the Netherlands has functioned well in this respect for many years, an aging population and a more flexible labor market pose a challenge to the financial sustainability and fair distribution of pension contributions and benefits, ultimately putting pressure on one of the core elements of the Dutch pension system—the solidarity principle. As other countries (e.g., Canada, Denmark, Sweden, Switzerland, UK) face similar problems in their pension landscape in light of prospective demographic trends, the Netherlands is not alone in the challenges we discuss (Arnold & Jijie, 2019; OECD, 2015, 2019; Ring et al., 2020; Sørensen et al., 2016).

In the first pillar of the basic state pension, the pressure on financial sustainability and solidarity is reflected in the pay-as-you-go funding. In such a system, the current working population *directly* pays the pension benefits for current retirees (Van Dalen & Henkens, 2005). As the population ages, fewer contributors will have to fund a growing number of older beneficiaries, making this system and the inherent

intergenerational contract financially unsustainable and unfair. A much-discussed reform measure introduced in this regard in the Netherlands and beyond is that of (gradually) raising the state pension age (OECD, 2015; Whitehouse et al., 2009).

The affordability and solidarity are also at stake in the second pillar, wherein pensions are accrued through employment. In the current Dutch setting, participants (younger and older employees and employers) jointly build the pension capital from which all pension benefits are subsequently paid. This *collective* approach makes it possible to share risks and reap benefits together, making (intergenerational) solidarity an essential component of this pillar, too (Goudswaard et al., 2010). But, as the population ages, this collective approach becomes too expensive and potentially unfair, as pension expenditures continue to rise while the contributions steadily decline. Another challenge comes from the fact that some elements of the pension system no longer fit neatly into today's dynamic and flexible labor market. This applies, for example, to the so-called "average premium" financing system, and the solidarity between young and old that is key to this system. In an average premium system, all participants pay the same contribution to the pension fund and receive the same pension accrual in return, regardless of individual differences such as age (Goudswaard et al., 2010). However, the premium of young participants is worth much more than that of older ones because it generates returns for much longer. When most people stayed with the same employer and thus with the same pension fund, it was no problem for younger participants to partially pay contributions for older workers, because eventually, they became the older ones who also benefited. But in today's labor market, where people change jobs more often or become self-employed, the fairness of this system is questioned in several ways, and the Dutch government ultimately decided to abolish it.

To sum up, the pension debate in the Netherlands, but also in other (European) countries, touches on questions about what pension claims citizens can make on society and each other, with much attention in the debate for the solidarity principle. The Dutch pension system is slowly moving away from (the expensive) collective character and its impaired solidarity to a system in which more risk is placed on the individual, and more personal freedom and flexibility are allowed (Van Dalen & Henkens, 2016). Taking this into account, we put the important aspects of responsibility and justice at the center of this article in which we examine how news frames influence citizens' perspectives on pension reforms.

Framing effects

As a source of information, news media play a crucial role in such hotly debated topics as the one of pension reform. Importantly here is that they do not necessarily present a *neutral* perspective on these issues. Instead, news media can influence the public through the way issues are presented in news stories by selecting and emphasizing certain aspects over others, which is expressed in framing theory. According to Entman's (1993) classical definition, framing means "to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote

a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described” (p. 52). In this way, the media suggest a particular interpretation or judgment of the issue, providing a framework for how to make sense of an issue (De Vreese, 2005; Entman, 1993).

Over the years, scholars have provided solid evidence for the strong influence that framing can exert on public opinion (De Vreese et al., 2011; Shen & Edwards, 2005; Valkenburg et al., 1999). Framing effects can be ascribed to the idea that people use cognitive shortcuts when processing information. As a frame emphasizes certain aspects of an issue, this particular part of the issue will be cognitively accessible to an individual, at least temporarily, and in turn be used when evaluating the issue (Shen & Edwards, 2005).

Hence, we know from framing theory that not all angles of an issue, in our case the pension reform issue, can be given the same visibility in news media content. Instead, in telling a news story, certain aspects of the pension reform issue will be highlighted while others will be toned down (e.g., Hagelund & Grødem, 2017; Van den Heijikant et al., 2022). Such frames provide citizens with a framework that helps them make sense of the issue. Drawing on the empirical evidence for framing effects, we can assume that when news media highlight the aspect of responsibility by emphasizing either individual or collective responsibility for pensions, such a frame may sway people’s opinions in the direction of such responsibility as the foundation for a future pension system. More concretely, we expect people to be more favorable toward the form of responsibility promoted and framed in the news report as the way forward for future pensions. We therefore expect the following:

H1a. A news frame that emphasizes collective (vs. individual) responsibility as the basis for a future pension system positively affects citizens’ preferences for such a basis of a national pension system.

As discussed, justice is a particularly relevant component of pension systems, as well as of the welfare state in general (Schokkaert & Van Parijs, 2003). Justice is broadly defined as a fair distribution of entitlements and obligations, with all individuals receiving their rights (Caney, 2018). Literature refers to this phenomenon as distributive justice, which implies the fair allocation of resources across people in society (Hyde & Dixon, 2009). Pension provision is one such resource that should be distributed fairly among people, which is the essence of the social contract at the core of pension systems. This social contract embodies the principle that people pay contributions during their working lives and reap the benefits after retirement (Sabbagh & Vanhuyse, 2010). This works if every generation honors its obligations to and is in solidarity with preceding and succeeding generations, hereby balancing contributions and benefits (Hudson, 2010; Sabbagh & Vanhuyse, 2010). Population aging, however, disrupts this balance in pension systems because the working-age generation will have to provide for a growing number of retirees (Komp & Van Tilburg, 2010; Sabbagh & Vanhuyse, 2010). This pressure on the fairness of the social contract arises not only from *intergenerational* considerations, but also from *intragenerational* ones: justice between different people within the same generation, such as higher- versus

lower-educated individuals or workers with physically highly demanding versus less demanding jobs.

News media play a fundamental part in the conceptualization of justice. News media content may be framed in terms of justice, which potentially affects justice judgments or perceptions of individuals exposed to it (Besley & McComas, 2005). In turn, these perceptions of justice have proven to be an important predictor of public support for a policy measure, for example, in the field of environmental policy (Clayton, 2018). As public support for pension reform is hard-won but at the same time indispensable for its success, we analyze this mechanism in the current study. More specifically, we examine whether emphasizing a particular form of responsibility for pensions as either just or unjust will affect citizens’ attitudes toward (reforming) the pension system, leading to the following expectation:

H1b. A news frame that emphasizes a particular form of responsibility for pensions as unjust (vs. just) negatively affects citizens’ preferences for such a basis of a national pension system.

Individual-level moderators of framing effects

News media content does not affect all citizens to the same extent. Scholars have increasingly paid attention to the conditions under which framing effects are enhanced or limited (Lecheler et al., 2009). Therefore, in the current study, we examine whether individual conditions amplify framing effects in the context of pension reforms.

Age-based self-interest

Individual preferences and opinions toward the welfare state are largely determined by self-interest (Busemeyer & Lober, 2019). This implies that people are driven by one’s own needs and interests, maximizing their advantage and minimizing their disadvantage (Prinzen, 2014).

This idea of self-interest therefore seems to be a potential factor that may influence how people process news media content on pension reform and, more specifically, how receptive they are to a frame that promotes a particular form of responsibility as the basis for a future pension system.

Among the range of potential characteristics on which self-interest can be based, age is arguably an important one. Age-based self-interest is often discussed in the context of demographic aging and scarcity of resources in the welfare state (Prinzen, 2014), and especially relevant in the context of pensions (Busemeyer & Lober, 2019). The older an individual is, the closer he or she gets to the eligible retirement age. After contributing for years to the current pension system, older people may be skeptical toward pension reforms and may have a preference for keeping the system as it is (Svallfors, 2008; Van Groezen et al., 2009). Besides, they may be less concerned about the long-term financial sustainability of the pension system because they will start receiving pension benefits in the near future. Since this study is conducted in the Netherlands, where the current pension system is based on collective responsibility, we expect that older individuals are more strongly influenced by news media framing collective responsibility for pensions.

Compared to older people, younger individuals may have opposite interests in pensions. With years of contributing to the pension system ahead and being aware of increasing

pension costs, younger workers lose faith that they can still benefit from old age pensions when they reach the eligible age (Prinzen, 2014; Svallfors, 2008). Accordingly, they may be less willing to support the current collective pension system and more open to pension reforms (Parlevliet, 2017). In line with the process of individualization in society, younger people may be more willing to support a pension system with individual responsibility (Gelissen, 2001; Parlevliet, 2017). Hence, we expect that younger individuals are more strongly affected by a frame emphasizing individual responsibility for pensions. See Hypotheses 2a and 2b below.

Education-based self-interest

Age is not the only potential condition that could enhance framing effects on one's pension system preferences. Education level plays a role as well, which is closely related to the level of income and type of occupation. Gelissen (2001) showed that the more education people have received, the more likely they are to favor individual responsibility for pension provision. This may be explained by the fact that higher education usually coincides with a higher income and more confidence in one's own future career and prospects (Hershey et al., 2017; Parlevliet, 2017). This may increase higher-educated people's willingness to be responsible for their pension situation and interest in having freedom of choice. This interest and willingness may influence how higher-educated people process news media content that is positively framed toward a pension system based on individual responsibility, in the sense that we expect them to be more positively affected by such a frame.

In contrast, lower-educated people commonly hold more vulnerable occupational positions with less favorable working conditions (Hess, 2017), making them less prepared and with fewer resources to adapt to changes in the pension system or take responsibility for securing a sufficient income in retirement. Education is also known to positively correlate with knowledge about the pension system (Hess, 2017; Parlevliet, 2017). Due to limited knowledge and understanding of pension regulations in general, lower-educated individuals may be less aware of the rising pressure on the national pension system and how this may affect one's future pension income (Hershey et al., 2017; Hess, 2017; Parlevliet, 2017). Therefore, lower-educated individuals may be more supportive of the status quo. As the status quo in the Netherlands is a pension system based on collective responsibility, we expect that lower-educated individuals are more strongly influenced by a news frame stressing collective responsibility for pensions.

Sense of solidarity

Beyond mere self-interest, a sense of solidarity is arguably an essential determinant of individual attitudes toward pension systems. Solidarity refers to people's willingness to share risks with each other, for example, between younger and older workers, pension contributors and recipients, and men and women (Hoff, 2015). It therefore seems a highly relevant factor to consider in light of receptivity to a frame that advocates individual versus collective responsibility for pensions.

The principle of solidarity is an important foundation for pension systems based on collective responsibility. The solidarity within pension provision has been taken for granted for years; however, as a consequence of the individualization in society and the need for freedom of choice, it may no

longer be self-evident that people stand in solidarity with each other, across and within generations (Hoff, 2015). People's sense of solidarity may be relatively low, which, in turn, may make them more open to a potential move to a system that leans less (or not at all) on solidarity, such as a pension system based on individual responsibility. We expect that people with a weaker sense of solidarity are more strongly affected in their pension system preferences by a news frame promoting individual responsibility for pensions. In contrast, we expect that for people with a stronger sense of solidarity, the framing effect on their pension system preferences will be stronger in the case of emphasizing collective responsibility for pensions.

To summarize, we therefore formulated the following hypotheses regarding the individual-level moderators of framing effects:

H2a. The positive effect of framing collective responsibility as the basis for a future pension system on citizens' preferences for such a collective national pension system will be stronger (I) the older a citizen is, (II) the less educated a citizen is, and (III) the stronger a citizen's sense of solidarity is.

H2b. The positive effect of framing individual responsibility as the basis for a future pension system on citizens' preferences for such an individual national pension system will be stronger (I) the younger a citizen is, (II) the higher educated a citizen is, and (III) the weaker a citizen's sense of solidarity is.

Primary mode of news use

According to media dependency theory, the specific news medium through which an individual receives a frame may also strengthen the effects of framing in the context of pension reform coverage. Originally, media dependency theory was focused on news media in general, stating that the more an individual relies on news media for information, the more influence news media can exert on an individual (Ball-Rokeach & DeFleur, 1976). The underlying explanation is that the more individuals want to fulfill their information needs, the stronger the motivation is to seek information in news media; hence the higher the dependency on news media and, as such, the more susceptible these particular persons are to media effects (Ruggiero, 2009).

However, nowadays, various forms of news media dominate the evolving media landscape. Next to traditional news media, social media have vastly expanded the news environment (Nielsen & Schröder, 2014). People probably differ in their preference for news media since they actively choose media based on their motives, needs, and expectations, as explained in the uses and gratifications theory (Ruggiero, 2009; Strömbäck et al., 2018). For instance, older citizens more frequently rely on traditional news media for (political) information, while younger people often use social media as their primary mode of news use (Holt et al., 2013). Miller and Reese (1982) suggested that the general hypothesis of media dependency also holds for specific media. This implies that dependency on a specific news medium strengthens the opportunity for that medium to have effects (Miller & Reese, 1982; Moy et al., 2005). In this sense, framing effects may be dependent upon citizens' primary mode of news use. Following this logic, we expect that if newspapers are an individual's

Table 1. Overview and descriptive statistics of experimental conditions and control group.

Group	News media type	Responsibility frame	Justice frame	Preference for collective pension system	
				M	SE
1 (<i>n</i> = 88)	Newspaper	Individual	Just	3.80	1.52
2 (<i>n</i> = 92)	Newspaper	Individual	Unjust	4.61	1.49
3 (<i>n</i> = 86)	Newspaper	Collective	Just	4.92	1.43
4 (<i>n</i> = 99)	Newspaper	Collective	Unjust	3.93	1.87
5 (<i>n</i> = 70)	Facebook	Individual	Just	3.96	1.56
6 (<i>n</i> = 76)	Facebook	Individual	Unjust	4.47	1.84
7 (<i>n</i> = 80)	Facebook	Collective	Just	4.49	1.72
8 (<i>n</i> = 74)	Facebook	Collective	Unjust	4.15	1.80
9 (<i>n</i> = 97)	Online article	Control	Control	4.46	1.59

primary mode of news use, framing effects will be stronger through exposure to newspapers. We expect the same mechanism for social media.

H3. The effects of both news frames on citizens' pension preferences will be stronger when citizens are exposed to their primary mode of news use (vs. a less preferred mode of news use).

Method

Study design

We conducted an online survey-embedded experiment with a 2 (news item in *traditional vs. social media*) × 2 (news frame stressing *collective vs. individual responsibility* as the basis for a future pension system) × 2 (news frame stressing the respective form of responsibility as *unjust vs. just*) between-subjects factorial design with a control group. The experiment was preregistered at the Open Science Foundation (OSF).¹

Participants

A sample of Dutch citizens was recruited from a panel provided by I&O Research (*N* = 832). We only included participants in the analyses who had taken at least five seconds to absorb the news item, resulting in a final sample of 762 participants. Five seconds were deemed sufficient exposure time, as the manipulation is already immediately evident in the headline and summary lead in the case of newspaper articles and in the headline and images in the case of social media posts. Participants were between 19 and 64 years old (*M* = 50.90, *SD* = 11.14, *Mdn* = 54), and females represented

45.54% of the sample. Regarding the highest completed education level, 43.18% were lower educated, and 56.82% were higher educated. Participants were rewarded with credits for the I&O Research savings program.

Independent variables and stimulus material

Participants were invited by email to take part in the online survey-embedded experiment. After giving explicit informed consent, participants read a short introduction stating that population aging is challenging the financial sustainability of the Dutch pension system, to ensure some familiarity with the issue. Participants were then randomly assigned to one of the eight experimental conditions or control group and exposed to the stimulus material (see Table 1 for an overview of the conditions).

We based the stimuli on recent newspaper articles about the pension debate published in *de Volkskrant* and *NRC Handelsblad* (i.e., widely read Dutch quality newspapers). The stimulus material was also inspired by a content analysis of Dutch newspaper articles and posts on social media about raising the retirement age in the timespan 2009–2016, as this study provided valuable insights and knowledge of previous media coverage of pension reforms in the Netherlands (Van den Heijkant et al., 2022). In this way, content characteristics of day-to-day Dutch news coverage on the ongoing pension debate were combined and manipulated, herewith increasing the external validity of the experiment (Vliegenthart, 2012).

A different version of the news item was created and manipulated on the independent variables for each of the eight experimental conditions. A pilot test among a convenience sample (*n* = 89) showed that the manipulations were successful. We manipulated the type of news media to which participants were exposed by creating four newspaper articles and four Facebook posts. The content of the news items was kept virtually the same across both news media types but reflected the differences in features (e.g., the presence or absence of an image, emoticons, headline, or summary lead). The news items were framed in different ways. Regarding the responsibility frame, half of the newspaper articles and Facebook posts contained a frame stressing *individual responsibility* as the basis for a future pension system, according to a fictional committee established by the Ministry (the individual responsibility condition). The other four news items included a frame stressing *collective*

¹Our preregistration can be found following this link: https://osf.io/r4ead/?view_only=fb55654be2f64284a56505fd44ba1777. We have deviated slightly from the preregistration plan. We tested all hypotheses with the originally preregistered dependent variable evaluations of the current national pension system and found virtually no significant effects. In an attempt to explain the insignificant results, we ran into two questions: Do people actually have enough knowledge of the current Dutch pension system? And in case they do, is it perhaps an attitude that is difficult to change? On reflection, we believe that preference for a collective or individual pension system is a more compatible dependent variable for our preregistered hypotheses and research design. The variable was included in the preregistration and measures what type of national pension system people prefer.

responsibility as the basis for a future pension system, according to the same fictional committee (the collective responsibility condition). In terms of the justice frame, half of the news items stressed the respective form of responsibility (that is either collective or individual responsibility) as unjust, according to employers and trade unions (the unjust condition). In the other half of the news items, the respective form of responsibility was framed as just, according to the same voices (the just condition). In the control condition, participants read a neutral online news article that was supposedly published on the popular online news platform *NU.nl*. A complete overview of the stimuli can be found in [Supplementary Appendix A](#).

After exposure to the news item, participants answered questions regarding manipulation checks, dependent and moderating variables. Sociodemographic characteristics were also measured. At the end of the questionnaire, participants were fully debriefed about the study's purpose and the fact that the news item was fictional. All regulations regarding ethical procedures were closely followed.

Manipulation checks

Participants spent on average 106.05 s reading the news item ($Mdn = 50$, $SD = 605.02$). Regarding the responsibility frame, Fisher's exact test revealed a significant difference between the conditions, $p < .001$. Most participants in the individual responsibility condition (96.9%) indicated that the news item promoted individual responsibility for pensions, while almost all participants in the collective responsibility condition (99.1%) pointed out collective responsibility. For the justice frame, Fisher's exact test showed again a statistical difference between the conditions, $p < .001$. Most participants in the just condition (95.7%) responded that the form of responsibility was described as just, while the majority of participants in the unjust condition (74.2%) indicated it to be unjust. These results confirm the soundness of the manipulations, allowing us to attribute differences between conditions to the experimental manipulations.

Measures

Dependent variable

Before asking participants about their pension system preferences, we have provided them with the following information about the (current) pension system in the Netherlands: *In addition to the basic state pension (AOW), most Dutch people save for supplementary pension through their employer. This is now done in a collective pension scheme, as participants accumulate the assets jointly.*

National pension system preferences

We measured pension system preferences by asking participants the question "What type of pension system would you prefer in the Netherlands?" on a 7-point scale (1 = completely individual pension system, 7 = completely collective pension system). A higher score indicated a greater preference for a pension system based on collective responsibility ($M = 4.31$, $SD = 1.68$). Dependent upon the responsibility frame, we were either interested in the preference for a collective pension system or the preference for an individual pension system. Therefore, we created another variable in which a higher score indicated a greater

preference for a pension system based on individual responsibility by reversing the answers to the question ($M = 3.69$, $SD = 1.68$).

Moderating variables

Age and education level

Age was measured in years ($M = 50.90$, $SD = 11.14$). Education level was measured by asking participants to indicate their highest level of education on a 7-point scale, ranging from (1) no education or only primary education to (7) a Master's or Doctoral degree ($M = 4.99$, $SD = 1.36$).

Sense of solidarity

²To examine feelings of solidarity toward different groups, we asked participants to position themselves on six statements about their willingness to contribute to pensions of others (items are included in [Supplementary Appendix B](#)), adapted from [Berden and Kok \(2013\)](#) and [Hoff \(2015\)](#). These items were measured on a 7-point scale from strongly disagree to strongly agree, with a higher score indicating a stronger sense of solidarity ($M = 4.41$, $SD = 1.15$, $\alpha = .83$).

Primary mode of news use

Participants were asked to indicate how many days in a typical week they use certain media to follow the news on an 8-point scale ranging from 0 to 7 days per week, adapted from [Boomgaarden et al. \(2011\)](#). Drawing from participants' reports about their use of printed newspapers ($M = 3.10$, $SD = 2.61$) and social media ($M = 3.81$, $SD = 2.98$), participants' primary mode of news use was calculated by subtracting the score of social media use from the score of newspaper use. A value above 1 indicated that printed newspapers are a citizen's primary mode of news use ($n = 187$). A value more negative than -1 indicated social media as a citizen's primary media for news ($n = 278$). We omitted participants with a value of 0, 1, or -1 ($n = 297$), as they did not have a (clear) primary mode of news use.

Control variables

Sociodemographics

Several sociodemographic characteristics were used as controls to provide a conservative test, namely gender, income, age, and education level, as previous research has shown that these variables may affect pension-related outcomes (e.g., [Gelissen, 2001](#); [Parlevliet, 2017](#)). In some analyses, age and education level were included as moderators (instead of controls, see description above). Income was measured by asking participants the question "In which category does the total gross annual income of your household fall?" on a 5-point scale (1 = minimum and below-average/up to €26,500, 5 = twice the middle income or more/€66,000 or more). Participants also had a "no answer" option, but this category was not included in the analyses ($n = 106$). A higher score indicated a higher income ($M = 3.54$, $SD = 1.26$).

²A one-way ANOVA revealed no significant mean differences between conditions in terms of sense of solidarity ($F(8,753) = 1.50$, $p = .154$). This indicates that it is unlikely that it was affected by exposure to the stimuli.

Political orientation

Political orientation was measured using the question “Some people talk about left and right to describe political parties and politicians. With this in mind, where would you place yourself on a scale ranging from (1) left to (10) right?.” A higher score indicated a right-leaning political orientation ($M = 5.32$, $SD = 2.09$).

Analysis

Table 1 shows descriptive statistics regarding the differences in participants’ pension system preferences across conditions. To assess the hypotheses, regression models were performed with dummy variables representing control and experimental conditions, one of which served as a reference category depending on the hypothesis in question. Simultaneously, we control for gender, age, education level, income (excluding the “no answer” category, $n = 106$), and political orientation.

In H1a, we test expectations about the responsibility frame, while H1b addresses expectations about the justice frame. To test the effect of one frame exclusively without interference from the other, we specified different regression models for each hypothesis. For H1a, this means that we specify two regression models in which we remove the potential effect of the justice frame by holding it constant, thereby attributing any effect on pension system preferences solely to the difference between collective versus individual responsibility framing for pensions (and the control condition). To put it concretely, in Model 1, we restrict our analyses to the just context (Groups 1, 3, 5, 7 + control group; $n = 361$) and for Model 2 to the unjust context (Groups 2, 4, 6, 8 + control group; $n = 374$), to examine whether framing collective versus individual responsibility as the basis for a future pension system is associated with a preference for such a pension system. In the same way, we test the effect of the justice frame as described in H1b by restricting it in Model 3 to the collective responsibility context (Groups 3, 4, 7, 8 + control group; $n = 370$) and to the individual responsibility context in Model 4 (Groups 1, 2, 5, 6 + control group; $n = 365$), to examine whether framing a particular element of a pension system as unjust versus just is associated with less preference for such a pension system.

Next, we test the hypotheses regarding the individual-level moderators using the same analysis strategy but adding the specific interaction term for each hypothesis. For example, H2a₁ extends H1a with an expectation about the moderating effect of age; hence, we ran the same regression models, but this time with an interaction term added between the responsibility frame and age. The same strategy applies to testing the remaining hypotheses. To test H3, we created a dichotomous variable that reflected the (in)congruence between the participants’ primary mode of news consumption and the media to which they were exposed in the experiment. For example, a value of 0 (incongruent; $n = 213$) would be assigned to a participant who was shown a Facebook post in the experiment but has (printed) newspapers as their primary mode of news use in everyday life (or vice versa). A value of 1 (congruent; $n = 197$) would, for example, be assigned to someone who was exposed to a Facebook post in the experiment and uses social media in everyday life as their primary mode of news consumption.

RESULTS

Framing effects

We start by assessing the main framing effects. We predicted that a news frame emphasizing collective rather than individual responsibility as the basis for a future pension system would positively affect citizens’ preferences for such a national pension system (H1a). Table 2 displays the results of two regression models predicting participants’ pension system preferences. Model 1 captures the results for the just condition. These results imply that, compared to the reference category of framing *individual responsibility* for pensions, exposure to a news frame stressing *collective responsibility* for pensions significantly and positively affected participants’ preferences for such a *collective* basis of a national pension system, $b = .789$, $p < .001$ (see Model 1 in Table 2). This finding is in line with H1a. The results for the unjust condition are shown in Model 2, and here the opposite direction is true: Exposure to a news frame stressing *collective responsibility* for pensions significantly and negatively affected participants’ preferences for such a *collective* national pension system compared to the reference category of framing *individual responsibility* for pensions, $b = -.705$, $p < .001$ (see Model 2 in Table 2). We therefore partially accepted H1a: Framing individual or collective responsibility for pensions positively affected the preference for such a basis of a national pension system in cases where the respective form of responsibility was also framed as just.

In H1b, we predicted that a news frame stressing a particular form of responsibility as unjust (vs. just) would negatively affect citizens’ preferences for such a basis of a national pension system. Results from two regression models, one for participants in the collective responsibility condition and one for those in the individual responsibility condition, support our expectation (see Model 3 and Model 4 in Table 2). Compared to the reference category of framing collective responsibility for pensions as *just*, exposure to a news frame stressing collective responsibility for pensions as *unjust* significantly and negatively affected participants’ preferences for such a collective national pension system, $b = -.717$, $p < .001$. In the same way, compared to the reference category of framing individual responsibility for pensions as *just*, exposure to a news frame stressing individual responsibility for pensions as *unjust* significantly and negatively affected participants’ preferences for such an individual national pension system, $b = -.728$, $p < .001$. Both results demonstrated that people have a lower preference for collective or individual responsibility for pension provision if such a system is framed as unjust rather than just, confirming H1b.

To check the robustness of the main framing effects, additional analyses were conducted with two scales alternating as dependent variables, that is, *support for collective responsibility* (example item: “collective pension saving is a good thing because I do not know where my life takes me and then I am protected against financial risks”) and *support for individual responsibility* (example item: “individual pension saving is a good thing because I can achieve a better return if I save for my pension myself”; see Supplementary Appendix B for the full measurement description). Although a few effects were not significant, results of the robustness checks were generally in line with the (direction of) framing effects found in the main analyses, adding some robustness to our findings.

Table 2. Main framing effects on pension system preferences.

	Preferences for collective pension system						Pension system preferences					
	Model 1 Just		Model 2 Unjust		Model 3 Collective		Model 4 Individual		Model 3 Collective		Model 4 Individual	
	<i>b</i>	SE	<i>p</i>	<i>b</i>	SE	<i>p</i>	<i>b</i>	SE	<i>p</i>	<i>b</i>	SE	<i>p</i>
Constant	3.578	.618	.000	4.683	.684	.000	4.435	.623	.000	4.138	.668	.000
Responsibility frame [0 = Individual]												
Collective	.789	.185	.000	-.705	.194	.000	—	—	—	—	—	—
Control	.397	.215	.065	-.383	.229	.095	—	—	—	—	—	—
Justice frame [0 = Just]												
Unjust	—	—	—	—	—	—	-.717	.191	.000	-.728	.190	.000
Control	—	—	—	—	—	—	-.406	.224	.071	-.389	.219	.077
Female [0 = Male]	-.346	.171	.044	-.385	.185	.039	-.329	.179	.067	.387	.176	.029
Age	.022	.007	.004	.031	.008	.000	.029	.008	.000	-.024	.008	.002
Education level	-.007	.066	.920	-.062	.072	.390	-.000	.065	.995	.066	.073	.365
Income	.005	.072	.943	-.053	.077	.496	-.020	.075	.791	.031	.074	.674
Political orientation	-.112	.040	.005	-.171	.043	.000	-.182	.040	.000	.098	.043	.022
		$R^2 = .110$			$R^2 = .129$			$R^2 = .140$			$R^2 = .099$	
		$F(7,353) = 6.24$			$F(7,366) = 7.71$			$F(7,362) = 8.44$			$F(7,357) = 5.62$	
		$p < .001$			$p < .001$			$p < .001$			$p < .001$	
		$n = 361$			$n = 374$			$n = 370$			$n = 365$	

Note. *b* represents unstandardized coefficients.

Individual-level moderators of framing effects

Self-interest and solidarity

Next, we assessed whether the effect of the responsibility frame on citizens' pension system preferences was moderated by age, education level, and sense of solidarity. In terms of *age*, we posed that the older a citizen is, the stronger the positive effect of framing *collective responsibility* for pensions would be on one's preference for such a collective national pension system (H2a_I). Second, we predicted that the younger a citizen is, the stronger the positive effect of framing *individual responsibility* for pensions would be on one's preference for such an individual national pension system (H2b_I). Results of two regression models, one in the context of the just frame and one in the context of the unjust frame, demonstrated non-significant interaction terms between the responsibility frame and age (see Model 5 and 6 in Table 3). This implies that age did not enhance the effect of the responsibility frame as we expected in this context, and therefore we rejected H2a_I and H2b_I.

Additionally, we predicted that the effect of the responsibility frame on citizens' pension system preferences would be affected by their *education level*; in the sense that the lower educated a citizen is, the stronger their pension system preferences would be influenced by framing *collective responsibility* as the basis for a future pension system (H2a_{II}), and we predicted that higher educated citizens would be more strongly influenced in their pension preferences by framing *individual responsibility* for pensions (H2b_{II}). Table 4 shows the results of two regression models: One for the just condition (Model 7) and one for the unjust condition (Model 8). In both regression models, we found significant interaction terms between the responsibility frame and education level. To facilitate interpretation, the interaction

effects are visualized in Figure 1a and b. For the just condition, Figure 1a shows that the lower a participant is educated, the stronger the positive effect of framing *collective responsibility* for pensions on one's preference for a *collective* national pension system was. As with H1a, for participants in the unjust condition, the effect of framing *collective responsibility* for pensions on participants' preference for a *collective* national pension system turned out to be negative, which is contrary to our expectation of a positive effect. Figure 1b shows, nonetheless, that the moderating influence of education level was in the expected direction, indicating the same mechanism as in the just condition: The lower a citizen was educated, the larger, in this case, the negative effect was. These results offer (partial) support for H2a_{II}. The effect of the collective responsibility frame was indeed more pronounced the lower a citizen was educated. However, we need to stress that the framing effect was negative (rather than positive) in the unjust condition. Based on the results presented above, we have to reject H2b_{II} because the effect of the responsibility frame did not become stronger as the education level of people increased (but rather as the education level decreased).

Subsequently, we examined the potential moderating function of a sense of solidarity. We predicted that the stronger a citizen's sense of solidarity, the stronger the positive effect of framing *collective responsibility* for pensions would be on a person's preference for such a collective national pension system (H2a_{III}). Second, we posed that citizens with a weaker sense of solidarity would be more strongly swayed in the direction of individual responsibility as the foundation for a future pension system when presented with an *individual responsibility* frame (H2b_{III}). Regression results showed that the interaction terms between the responsibility frame and sense of solidarity were not significant (see

Table 3. Interaction effects of the responsibility frame and age.

	Preference for collective pension system					
	Model 5 Just			Model 6 Unjust		
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
Constant	3.867	.766	.000	4.389	.880	.000
Responsibility frame [0 = Individual]						
Collective	-.103	.848	.904	-.759	.936	.418
Control	.317	.918	.730	.588	.982	.550
Age	.015	.012	.204	.036	.013	.004
Responsibility frame × age						
Collective × age	.018	.016	.282	.001	.018	.959
Control × age	.002	.018	.925	-.019	.019	.310
Female [0 = Male]	-.338	.172	.050	-.396	.186	.034
Education level	-.003	.066	.960	-.055	.072	.446
Income	.009	.073	.905	-.054	.077	.482
Political orientation	-.109	.040	.006	-.169	.043	.000
		$R^2 = .114$			$R^2 = .132$	
		$F(9,351) = 5.00$			$F(9,364) = 6.14$	
		$p < .001$			$p < .001$	
		$n = 361$			$n = 374$	

Note. *b* represents unstandardized coefficients.

Table 4. Interaction effects of the responsibility frame and education level.

	Preference for collective pension system					
	Model 7 Just			Model 8 Unjust		
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
Constant	2.280	.763	.003	6.361	.845	.000
Responsibility frame [0 = Individual]						
Collective	2.473	.687	.000	-3.410	.730	.000
Control	2.278	.835	.007	-1.367	.890	.125
Education level	.225	.104	.032	-.346	.112	.002
Responsibility frame × education						
Collective × education	-.337	.133	.012	.542	.141	.000
Control × education	-.376	.162	.021	.187	.172	.277
Female [0 = Male]	-.307	.170	.073	-.399	.182	.029
Age	.024	.007	.002	.027	.008	.001
Income	-.002	.072	.979	-.047	.076	.536
Political orientation	-.102	.039	.010	-.179	.043	.000
		$R^2 = .130$			$R^2 = .164$	
		$F(9,351) = 5.84$			$F(9,364) = 7.93$	
		$p < .001$			$p < .001$	
		$n = 361$			$n = 374$	

Note. *b* represents unstandardized coefficients.

Model 9 and Model 10 in Table 5). This implies that, contrary to our expectations, feelings of solidarity did not play a significant role in strengthening framing effects in the context of pension reforms. Therefore, we rejected H2a_{III} and H2b_{III}.

Primary mode of news use

Finally, we examined the moderating role of exposure to citizens' primary mode of news consumption. In H3, we posed that the effects of both frames on citizens' pension preferences would be stronger when citizens are exposed to their primary mode of news use (vs. a less preferred mode of news use). We assessed this hypothesis by considering the (in)congruence between participants' primary news media and the type of news media to which they were exposed in the experiment. Results of regression analyses demonstrated non-significant interaction terms between the frames and exposure to participants' primary mode of news use (see Model 11 to 14 in Table 6). This means that the strength of the framing effects on citizens' preferences for a respective national pension system was not dependent upon exposure to one's primary news media, or more precisely, while being exposed to a newspaper article, framing effects did not differ for citizens who prefer to follow news via newspapers in everyday life versus people who prefer to follow news via social media (or vice versa). Therefore, we rejected H3.

Discussion

This article moves beyond extant research by providing empirical evidence for the theoretical notion of framing in the context of pension reform, or to put it more concretely, by demonstrating that news frames of pension reform contribute

to how citizens view and respond to a (potential) pension system. Our findings showed that citizens who were exposed to a news frame stressing collective or individual responsibility for pensions showed a greater preference for such a basis for a future pension system; however, this effect was only positive if the relevant form of responsibility was also framed as *just*. Framing collective or individual responsibility for pensions as *unjust* evoked a negative effect on citizens' preferences for such a pension system, meaning that people showed a lower preference for the respective form of responsibility for pensions when it was framed as unjust. These results stress that the direction of the effect of the responsibility frame was dependent on the justice frame, meaning that regardless of framing some form of responsibility for pensions as the recommended basis for a future pension system, if that same responsibility was framed as unjust, participants showed less preference for such a system. This can perhaps be explained by previous research suggesting that not all frames have the same impact and that the *valence* of a frame is important (De Vreese et al., 2011). Valence framing involves depicting an issue in clearly positive or negative terms. The valenced frame of justice inherently contains more positive or negative connotations than the more substantive frame of responsibility, and this stronger valence could explain why citizens seemed most driven by this frame in the news report. More specifically, the negative connotation of the *unjust* frame steered people in their pension preferences away from the respective form of responsibility. This finding represents another confirmation of the negativity effect, which holds that people are more strongly impacted by negative information than by positive information (Damstra & Boukes, 2018; Soroka, 2006). Hence, this study adds to existing research on valence framing, and future research could further unravel the impact of frames with a substantive versus emotional nature in the context of pension reforms.

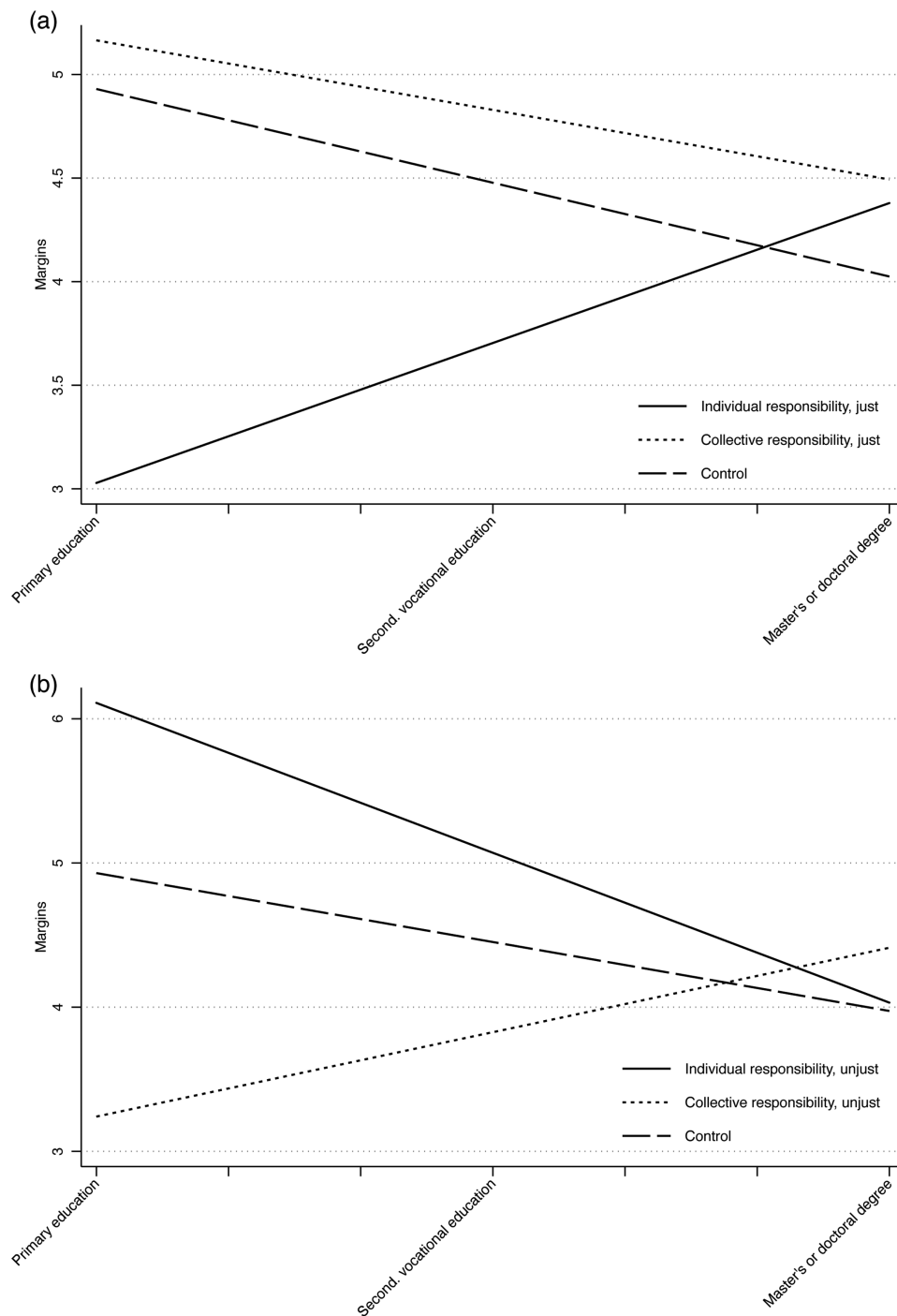


Figure 1. a: Marginal effect plot for the interaction between the responsibility frame and education level (just condition). b: Marginal effect plot for the interaction between the responsibility frame and education level (unjust condition).

Additionally, this paper contributed by examining the relevant conditions that could potentially strengthen framing effects in the context of pension reforms. We demonstrated that the effect of the responsibility frame was more pronounced the lower a citizen was educated. Since this may stem from lower knowledge of pension systems (Hess, 2017), it can be considered problematic that this group of people is particularly susceptible to news media content as they may blindly adopt the perspective presented by the media without critical reflection. Contrary to our expectations, citizens' age and sense of solidarity did not appear

to enhance or limit the effect of the responsibility frame. Rather than influencing how people process news media content that is positively framed toward collective responsibility for pensions, a sense of solidarity turned out to be a direct (positive) predictor of the preference for a (collective) national pension system. This makes sense as solidarity is inherently related to collective responsibility. Age also appeared to have partially significant direct effects on citizens' pension system preferences rather than that it influenced how they processed information from news media.

Table 5. Interaction effects of the responsibility frame and sense of solidarity.

	Preference for collective pension system					
	Model 9 Just			Model 10 Unjust		
	<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
Constant	.754	.745	.312	1.605	.813	.049
Responsibility frame [0 = Individual]						
Collective	-.191	.674	.777	-1.003	.706	.157
Control	.606	.767	.430	.410	.819	.617
Solidarity	.574	.109	.000	.646	.113	.000
Responsibility frame × solidarity						
Collective × solidarity	.229	.144	.113	.113	.157	.474
Control × solidarity	-.013	.166	.939	-.155	.180	.391
Female [0 = Male]	-.132	.153	.391	-.282	.168	.093
Age	.011	.007	.087	.023	.007	.002
Education level	-.054	.059	.365	-.091	.065	.165
Income	.088	.065	.177	.009	.070	.896
Political orientation	-.003	.037	.927	-.085	.040	.035
		$R^2 = .306$			$R^2 = .296$	
		$F(10,350) = 15.45$			$F(10,363) = 15.28$	
		$p < .001$			$p < .001$	
		$n = 361$			$n = 374$	

Note. *b* represents unstandardized coefficients.

Furthermore, this paper contributed to the literature by distinguishing between traditional and social media while examining news framing effects. Drawing from participants' primary mode of news use, we were able to test whether exposure to a primary news mode enhanced framing effects. Strikingly, our findings demonstrated that people with different news media preferences were not affected differently by their primary mode of news use than their less preferred one. This unanticipated finding may be explained by the idea that people in their everyday life do not rely on only one news media and are used to (incidentally) being exposed to different types of news media. When it comes to the moderating function of the primary mode of news use, it may depend upon which role a particular news source, for instance Facebook, takes within a personal news repertoire (Strömbäck et al., 2018), which could be an important direction for future research.

Limitations

Alternative explanations can also be found in the limitations of our study. When testing the moderation of citizens' primary news medium, our measurement indicated participants' preference for social media in general, while we exposed them to a Facebook post. People with a preference for social media in their daily life may prefer to follow news via, for example, Twitter rather than Facebook, meaning that Facebook may not have represented their primary news media. However, we do know that among the different social media platforms, Facebook is used the most for news in many countries, including the Netherlands, where around 28% of the Dutch population use Facebook regularly for news (Newman et al., 2019). Furthermore, we acknowledge that one framing

experiment can only explain a small part of how news frames affect citizens' attitudes.

Implications

Nonetheless, this study was one of the first to provide empirical evidence for the occurrence of framing effects in light of citizens' attitudes toward pension reforms. Since pension reforms often trigger emotional reactions and persistent opposition among citizens (Scheubel et al., 2013), we contributed by uncovering the essential role that news media content plays in how people think about pensions and proposed pension reforms. Since there is a low level of knowledge among the public regarding pensions and pension reform (Chan & Stevens, 2008; Finseraas et al., 2017; Prast & Van Soest, 2016), our research suggests the potential of news media to actively inform people about the necessity and considerations of pension reforms and raise the level of knowledge among citizens, which is especially important because pension reforms often require more active planning and preparation for retirement. However, this can also pose a danger, especially for the less educated, as a lack of knowledge or interest prevents them from thinking critically and leads to blindly adopting the perspective of the media, which, as we argue, is not a neutral perspective. Hence, media coverage matters in the public debate on pensions; it can have far-reaching implications for the level of support (or opposition) for reform measures and ultimately for the success of reform.

The findings and implications of this study may go beyond the Dutch case and be generalizable to other European or OECD countries. This will particularly be the case for countries with similar pension programs and similar challenges regarding the affordability of pay-as-you-go funding in basic

Table 6. Interaction effects of frames and congruence between exposed and primary mode of news use.

	Model 11			Model 12			Model 13			Model 14		
	Just			Unjust			Collective			Individual		
	<i>b</i>	SE	<i>p</i>	<i>b</i>	SE	<i>p</i>	<i>b</i>	SE	<i>p</i>	<i>b</i>	SE	<i>p</i>
Constant	2.937	.936	.002	4.259	1.047	.000	3.753	.934	.000	3.999	1.002	.000
Responsibility frame [0 = Individual]												
Collective	1.097	.321	.001	-.679	.349	.053	—	—	—	—	—	—
Justice frame [0 = Just]												
Unjust	—	—	—	—	—	—	-.837	.329	.012	.846	.341	.014
News media congruence [0 = Incongruent]												
Congruent	.552	.313	.080	.006	.360	.987	-.196	.353	.579	.532	.324	.102
Responsibility frame × news media congruence	-.726	.456	.114	.379	.494	.443	—	—	—	—	—	—
Justice frame × news media congruence	—	—	—	—	—	—	.590	.482	.223	-.450	.468	.337
Female [0 = Male]	-.054	.243	.825	-.347	.265	.192	-.147	.253	.560	-.227	.249	.364
Age	.029	.011	.010	.041	.012	.001	.042	.012	.001	.026	.011	.025
Education level	-.011	.092	.909	-.081	.102	.426	.028	.088	.748	-.174	.108	.107
Income	.053	.097	.586	.011	.112	.921	.010	.102	.922	.072	.106	.498
Political orientation	-.150	.056	.008	-.214	.064	.001	-.220	.060	.000	-.150	.059	.012
	$R^2 = .155$			$R^2 = .191$			$R^2 = .214$			$R^2 = .139$		
	$F(8, 163) = 3.75$			$F(8, 165) = 4.88$			$F(8, 164) = 5.59$			$F(8, 164) = 3.32$		
	$p < .001$			$p < .001$			$p < .001$			$p < .01$		
	$n = 172$			$n = 174$			$n = 173$			$n = 173$		

Note. *b* represents unstandardized coefficients.

state pensions and the integrity of collective occupational pension programs (Hershey et al., 2010). With pension reforms high on the policy agenda, the topic has also received prominent media coverage in these countries for years, meaning that the (news) framing effects on perceptions of pension reforms demonstrated in this study may also be useful and applicable in other countries. Moreover, the findings and implications may also be useful in understanding other (public) debates and perceptions toward policy issues with similar characteristics. The pension debate revolves around future anticipation, and in that light, it has parallels with, for instance, environmental issues in which concerns also exist about what the future will bring; a parallel that is also reflected in the use of the environmental term “sustainability” within the pension debate (Caney, 2018; Ervik, 2005).

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References

- Arnold, S., & Jijie, A. (2019). Generational transfers within the occupational pension system in Switzerland. *European Actuarial Journal*, 9(1), 109–138. <https://doi.org/10.1007/s13385-018-0188-0>
- Ball-Rokeach, S. J., & DeFleur, M. L. (1976). A dependency model of mass-media effects. *Communication Research*, 3(1), 3–21. <https://doi.org/10.1177/009365027600300101>
- Berden, C., & Kok, L. (2013). *Solidair of solitair: Resultaten van een onderzoek onder werkenden [Solidarity or solitariness: Results of a survey among workers]*. SEO Economisch Onderzoek.
- Besley, J. C., & McComas, K. A. (2005). Framing justice: Using the concept of procedural justice to advance political communication research. *Communication Theory*, 15(4), 414–436. <https://doi.org/10.1093/ct/15.4.414>
- Boeri, T., Börsch-Supan, A., & Tabellini, G. (2002). Pension reforms and the opinions of European citizens. *American Economic Review*, 92(2), 396–401.
- Boomgaarden, H. G., Van Spanje, J., Vliegthart, R., & De Vreese, C. H. (2011). Covering the crisis: Media coverage of the economic crisis and citizens' economic expectations. *Acta Politica*, 46(4), 353–379. <https://doi.org/10.1057/ap.2011.18>
- Busemeyer, M. R., & Lober, D. (2019). Between solidarity and self-interest: The elderly and support for public education revisited. *Journal of Social Policy*, 49(2), 425–444. <https://doi.org/10.1017/S0047279419000382>
- Caney, S. (2018). Justice and future generations. *Annual Review of Political Science*, 21(1), 475–493. <https://doi.org/10.1146/annurev-polisci-052715-111749>
- Chaffee, S. H., & Kanihan, S. F. (1997). Learning about politics from the mass media. *Political Communication*, 14(4), 421–430. <https://doi.org/10.1080/105846097199218>
- Chan, S., & Stevens, A. H. (2008). What you don't know can't help you: Pension knowledge and retirement decision-making. *Review of Economics and Statistics*, 90(2), 253–266. <https://doi.org/10.1162/rest.90.2.253>
- Clayton, S. (2018). The role of perceived justice, political ideology, and individual or collective framing in support for environmental policies. *Social Justice Research*, 31(3), 219–237. <https://doi.org/10.1007/s11211-018-0303-z>
- Damstra, A., & Boukes, M. (2018). The economy, the news, and the public: A longitudinal study of the impact of economic news on economic evaluations and expectations. *Communication Research*. <https://doi.org/10.1177/0093650217750971>
- De Vreese, C. H. (2005). News framing: Theory and typology. *Information Design Journal + Document Design*, 13(1), 51–62. <https://doi.org/10.1075/idjdd.13.1.06vre>
- De Vreese, C. H., Boomgaarden, H. G., & Semetko, H. A. (2011). (In)direct framing effects: The effects of news media framing on public support for Turkish membership in the European Union. *Communication Research*, 38(2), 179–205. <https://doi.org/10.1177/0093650210384934>
- Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43(4), 51–58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
- Ervik, R. (2005). The battle of future pensions: Global accounting tools, international organizations and pension reforms. *Global Social Policy*, 5(1), 29–54. <https://doi.org/10.1177/1468018105050119>
- Eveland, W. P., & Schmitt, J. B. (2015). Communication content and knowledge content matters: Integrating manipulation and observation in studying news and discussion learning effects. *Journal of Communication*, 65(1), 170–191. <https://doi.org/10.1111/jcom.12138>
- Finseraas, H., Jakobsson, N., & Svensson, M. (2017). Do knowledge gains from public information campaigns persist over time? Results from a survey experiment on the Norwegian pension reform. *Journal of Pension Economics and Finance*, 16(1), 108–117. <https://doi.org/10.1017/S1474747215000098>
- Gelissen, J. (2001). Old-age pensions: Individual or collective responsibility? An investigation of public opinion across European welfare states. *European Societies*, 3(4), 495–523. <https://doi.org/10.1080/14616690120112235>
- Gettings, P. E. (2018). Discourses of retirement in the United States. *Work, Aging and Retirement*, 4(4), 315–329. <https://doi.org/10.1093/workar/way008>
- Goudswaard, K. P., Beetsma, R. M. W. J., Nijman, T. E., & Schnabel, P. (2010). *Een sterke tweede pijler: Naar een toekomstbestendige stelsel van aanvullende pensioenen [A strong second pillar: Towards a future-proof system of supplementary pensions]*. Ministerie van Sociale Zaken en Werkgelegenheid.
- Hagelund, A., & Grødem, A. S. (2017). Build your own pension: Framing pension reform and choice in newspapers. *Journal of Aging and Social Policy*, 29(3), 218–234. <https://doi.org/10.1080/08959420.2016.1242108>
- Hershey, D. A., Henkens, K., & Van Dalen, H. P. (2010). What drives retirement income worries in Europe? A multilevel analysis. *European Journal of Ageing*, 7(4), 301–311. <https://doi.org/10.1007/s10433-010-0167-z>
- Hershey, D. A., Van Dalen, H. P., Conen, W., & Henkens, K. (2017). Are “voluntary” self-employed better prepared for retirement than “forced” self-employed?. *Work, Aging and Retirement*, 3(3), 243–256. <https://doi.org/10.1093/workar/wax008>
- Hess, M. (2017). Rising preferred retirement age in Europe: Are Europe's future pensioners adapting to pension system reforms? *Journal of Aging and Social Policy*, 29(3), 245–261. <https://doi.org/10.1080/08959420.2016.1255082>
- Hoff, S. (2015). *Pensioenen: Solidariteit en keuzevrijheid. Opvattingen van werkenden over aanvullende pensioenen [Pensions: Solidarity and freedom of choice. Workers' views on supplementary pensions]*. Sociaal en Cultureel Planbureau.
- Holt, K., Shehata, A., Strömbäck, J., & Ljungberg, E. (2013). Age and the effects of news media attention and social media use on political interest and participation: Do social media function as leveller? *European Journal of Communication*, 28(1), 19–34. <https://doi.org/10.1177/0267323112465369>
- Hudson, R. B. (2010). *The new politics of old age policy*. The Johns Hopkins University Press.
- Hyde, M., & Dixon, J. (2009). A just retirement pension system: Beyond neoliberalism. *Poverty & Public Policy*, 1(1), 1–25. <https://doi.org/10.2202/1944-2858.1000>
- Jaime-Castillo, A. M. (2013). Public opinion and the reform of the pension systems in Europe: The influence of solidarity principles. *Journal of European Social Policy*, 23(4), 390–405. <https://doi.org/10.1177/0958928713507468>

- Komp, K., & Van Tilburg, T. (2010). Ageing societies and the welfare state: Where the inter-generational contract is not breached. *International Journal of Ageing and Later Life*, 5(1), 7–11. <https://doi.org/10.3384/ijal.1652-8670.10517>
- Lecheler, S., De Vreese, C. H., & Slothuus, R. (2009). Issue importance as a moderator of framing effects. *Communication Research*, 36(3), 400–425. <https://doi.org/10.1177/0093650209333028>
- Miller, M. M., & Reese, S. D. (1982). Media dependency as interaction. Effects of exposure and reliance on political activity and efficacy. *Communication Research*, 9(2), 227–248. <https://doi.org/10.1177/009365082009002003>
- Moy, P., Torres, M., Tanaka, K., & McCluskey, M. R. (2005). Knowledge or trust? Investigating linkages between media reliance and participation. *Communication Research*, 32(1), 59–86. <https://doi.org/10.1177/0093650204271399>
- Newman, N., Fletcher, R., Kalogeropoulos, A., & Nielsen, R. K. (2019). *Reuters Institute digital news report 2019*. Reuters Institute for the Study of Journalism.
- Nielsen, R. K., & Schröder, K. C. (2014). The relative importance of social media for accessing, finding, and engaging with news: An eight-country cross-media comparison. *Digital Journalism*, 2(4), 472–489. <https://doi.org/10.1080/21670811.2013.872420>
- OECD. (2015). *Pensions at a glance 2015: OECD and G20 indicators*. OECD Publishing.
- OECD. (2019). *Pensions at a glance 2019: OECD and G20 indicators*. OECD Publishing.
- Parlevliet, J. (2017). What drives public acceptance of reforms? Longitudinal evidence from a Dutch pension reform. *Public Choice*, 173(1/2), 1–23. <https://doi.org/10.1007/s11127-017-0447-7>
- Prast, H., & Van Soest, A. (2016). Financial literacy and preparation for retirement. *Intereconomics*, 51(3), 113–118. <https://doi.org/10.1007/s10272-016-0588-9>
- Prinzen, K. (2014). Intergenerational ambivalence: New perspectives on intergenerational relationships in the German welfare state. *Ageing and Society*, 34(3), 428–451. <https://doi.org/10.1017/S0144686X12001080>
- Ring, P., Ervik, R., & Lindén, T. S. (2020). Justifying pension reforms: Comparing policy discourses in Norway and the UK. *European Journal of Social Security*, 22(3), 306–326. <https://doi.org/10.1177/1388262720950736>
- Ruggiero, T. E. (2009). Uses and gratifications theory in the 21st Century. *Mass Communication and Society*, 3(1), 3–37. <https://doi.org/10.1207/S15327825MCS0301>
- Sabbagh, C., & Vanhuyse, P. (2010). Intergenerational justice perceptions and the role of welfare regimes: A comparative analysis of university students. *Administration & Society*, 42(6), 638–667. <https://doi.org/10.1177/0095399710377440>
- Scheubel, B., Schunk, D., & Winter, J. (2013). Strategic responses: A survey experiment on opposition to pension reforms. *Scandinavian Journal of Economics*, 115(2), 549–574. <https://doi.org/10.1111/sjoe.12009>
- Schokkaert, E., & Van Parijs, P. (2003). Debate on social justice and pension reform: Social justice and the reform of Europe's pension systems. *Journal of European Social Policy*, 13(3), 245–263. <https://doi.org/10.1177/09589287030133003>
- Shen, F., & Edwards, H. H. (2005). Economic individualism, humanitarianism, and welfare reform: A value-based account of framing effects. *Journal of Communication*, 55(4), 795–809. <https://doi.org/10.1093/joc/55.4.795>
- Sørensen, O. B., Billig, A., Lever, M., Menard, J. C., & Settergren, O. (2016). The interaction of pillars in multi-pillar pension systems: A comparison of Canada, Denmark, Netherlands and Sweden. *International Social Security Review*, 69(2), 53–84. <https://doi.org/10.1111/issr.12101>
- Soroka, S. N. (2006). Good news and bad news: Asymmetric responses to economic information. *Journal of Politics*, 68(2), 372–385. <https://doi.org/10.1111/j.1468-2508.2006.00413.x>
- Strömbäck, J., Falasca, K., & Kruikemeier, S. (2018). The mix of media use matters: Investigating the effects of individual news repertoires on offline and online political participation. *Political Communication*, 35(3), 413–432. <https://doi.org/10.1080/10584609.2017.1385549>
- Svallfors, S. (2008). The generational contract in Sweden: Age-specific attitudes to age-related policies. *Policy and Politics*, 36(3), 381–396. <https://doi.org/10.1332/030557308X307720>
- Valkenburg, P. M., Semetko, H. A., & De Vreese, C. H. (1999). The effects of news frames on readers' thoughts and recall. *Communication Research*, 26(5), 550–569. <https://doi.org/10.1177/009365099026005002>
- Van Dalen, H. P., & Henkens, K. (2005). The double standard in attitudes toward retirement: The case of the Netherlands. *Geneva Papers on Risk and Insurance: Issues and Practice*, 30, 693–710. <https://doi.org/10.1057/palgrave.gpp.2510045>
- Van Dalen, H. P., & Henkens, K. (2016). *Willen we ons pensioen nog wel samen doen? Over keuzevrijheid en solidariteit in aanvullend pensioen [Do we still want to arrange our pension together? About freedom of choice and solidarity in supplementary pension]*. Network for Studies on Pensions, Aging and Retirement.
- Van den Heijkant, L., Van Selm, M., Hellsten, I. R., & Vliegthart, R. (2022). Framing pension reform in the news: Traditional versus social media. *Communications*. <https://doi.org/10.1515/commun-2021-0058>
- Van Groezen, B., Kiiver, H., & Unger, B. (2009). Explaining Europeans' preferences for pension provision. *European Journal of Political Economy*, 25(2), 237–246. <https://doi.org/10.1016/j.ejpoleco.2008.10.003>
- Van Solinge, H., & Henkens, K. (2017). Older workers' emotional reactions to rising retirement age: The case of the Netherlands. *Work, Aging and Retirement*, 3(3), 273–283. <https://doi.org/10.1093/workar/wax010>
- Vliegthart, R. (2012). Framing in mass communication research: An overview and assessment. *Sociology Compass*, 6(12), 937–948. <https://doi.org/10.1111/soc4.12003>
- Whitehouse, E., D'Addio, A., Chomik, R., & Reilly, A. (2009). Two decades of pension reform: What has been achieved and what remains to be done. *Geneva Papers on Risk and Insurance: Issues and Practice*, 34(4), 515–535. <https://doi.org/10.1057/gpp.2009.30>