

Cwynar, Andrzej; Cwynar, Wiktor; Kowerski, Mieczysław; Filipek, Kamil; Szuba, Przemysław

## Article

# Debt literacy and debt advice-seeking behaviour among Facebook users: The role of social networks

Baltic Journal of Economics

## Provided in Cooperation with:

Baltic International Centre for Economic Policy Studies (BICEPS), Riga

*Suggested Citation:* Cwynar, Andrzej; Cwynar, Wiktor; Kowerski, Mieczysław; Filipek, Kamil; Szuba, Przemysław (2020) : Debt literacy and debt advice-seeking behaviour among Facebook users: The role of social networks, Baltic Journal of Economics, ISSN 2334-4385, Taylor & Francis, London, Vol. 20, Iss. 1, pp. 1-33,  
<https://doi.org/10.1080/1406099X.2019.1693142>

This Version is available at:

<https://hdl.handle.net/10419/267575>

### Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

### Terms of use:

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by/4.0/>

## Debt literacy and debt advice-seeking behaviour among Facebook users: the role of social networks

Andrzej Cwynar, Wiktor Cwynar, Mieczysław Kowerski, Kamil Filipek & Przemysław Szuba

To cite this article: Andrzej Cwynar, Wiktor Cwynar, Mieczysław Kowerski, Kamil Filipek & Przemysław Szuba (2020) Debt literacy and debt advice-seeking behaviour among Facebook users: the role of social networks, *Baltic Journal of Economics*, 20:1, 1-33, DOI: [10.1080/1406099X.2019.1693142](https://doi.org/10.1080/1406099X.2019.1693142)

To link to this article: <https://doi.org/10.1080/1406099X.2019.1693142>



© 2019 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 20 Nov 2019.



[Submit your article to this journal](#)



Article views: 2244



[View related articles](#)








[View Crossmark data](#)



Citing articles: 5 [View citing articles](#)

# Debt literacy and debt advice-seeking behaviour among Facebook users: the role of social networks

Andrzej Cwynar <sup>a</sup>, Wiktor Cwynar <sup>a</sup>, Mieczysław Kowerski <sup>b</sup>, Kamil Filipek <sup>c</sup>  
and Przemysław Szuba <sup>d</sup>

<sup>a</sup>Institute of Public Administration, Business and Management, University of Economics and Innovation, Lublin, Poland; <sup>b</sup>Institute of Economics, The State School of Higher Education, Zamość, Poland; <sup>c</sup>Institute of Sociology, Maria Curie-Skłodowska University, Lublin, Poland; <sup>d</sup>Exacto Limited, Rzeszów, Poland

## ABSTRACT

Professional advice can be perceived as a means to tackle shortcomings in the objectively measured financial literacy of consumers. However, most studies suggest that less financially literate individuals are less likely to seek experts' financial advice. At the same time, it has been shown that financial confidence – or subjectively perceived financial literacy – is positively correlated with the propensity to request such professional advice. This study examines these puzzling effects in a sample of 1,055 Facebook users in Poland, and within an analytical framework that allows control of the potential endogeneity of financial literacy to professional advice. A series of regressions applied to the results of our survey showed that objective debt literacy – a little-studied aspect of financial literacy – was insignificant in explaining advice-seeking behaviour, although the decisions to ask for advice were positively dependent on subjective debt literacy. Such outcomes prove that subjective financial literacy should be treated as a separate construct which can predict financial behaviour above and beyond predictions based on objective financial literacy. Our findings also suggest a positive role for social networks in inducing desired financial actions. We found that respondents having access to greater resources embedded in their social networks are more inclined to seek professional debt advice.

## ARTICLE HISTORY

Received 29 August 2018  
Accepted 5 November 2019

## KEYWORDS



Debt literacy; financial literacy; financial confidence; advice-seeking; social networks; Facebook

## JEL CODES

D12; D14; G20; G53

## 1. Introduction

Ill-conceived borrowing decisions generate large but preventable costs, as exposed by the recent subprime crisis. The empirical evidence shows that low levels of financial literacy found worldwide contribute significantly to sub-optimal debt behaviours on the part of consumers (Disney & Gathergood, 2011; French & McKillop, 2014; Gerardi, Goette, & Meier, 2013; Klapper, Lusardi, & Panos, 2012; Lusardi & Tufano, 2015). Professional financial advice could at least partly compensate the shortcomings in consumers' financial literacy and, thus, ameliorate the related negative effects. Policy

**CONTACT** Andrzej Cwynar  [andrzej.cwynar@wsei.lublin.pl](mailto:andrzej.cwynar@wsei.lublin.pl); [cwynary@gmail.com](mailto:cwynary@gmail.com)  Institute of Public Administration, Business and Management, University of Economics and Innovation, Projektowa 4, Lublin 20-209, Poland

© 2019 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group  
This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

recommendations in this regard require, however, clear and univocal determination whether financial literacy and professional advice cooperates in equipping consumers with the information required to make desired decisions in financial markets, and if they do – how they are interlinked.

Research on the link between financial literacy and the demand for professional financial advice emerged only recently as a literature strand. The research is still inconclusive regarding even the most essential issues, such as the sign of the relationship between financial literacy and financial advice-seeking. Some studies show that the advice complements financial literacy, others report substitutability between these two variables; there are also studies that did not find a significant association between financial literacy and professional advice-seeking (see Stolper & Walter, 2017 for an overview and discussion).

Previous studies suggest that the sign and strength of the relationship between financial literacy and professional advice-seeking may depend on the theme of advice (Robb, Babiarz, & Woodyard, 2012). It seems, then, that fragmentary tests are needed – those that depart from aggregated variables (i.e. overall financial advice), and concentrate instead on constituent items of these aggregates. Given this, debt advice-seeking deserves particularly close attention for several reasons. First, although all financial decisions entail a risk, the risk arising from credit decisions is unique because of the tensions and potential distress it can create, including personal bankruptcy. This can increase (*ceteris paribus*) an individual's incentive to ask for advice just to avoid serious problems engendered by debt. Second, handling of debt, and especially problematic debt, is more difficult to influence through external (e.g. educational) interventions (Kaiser & Menkhoff, 2016; Miller, Reichelstein, Salas, & Zia, 2015). Third, in the debt-related domain, it seems especially warranted to distinguish seeking advice on post-contractual issues (i.e. mainly on debt-related problems experienced by those who are already indebted) from seeking advice on pre-contractual themes, motivated by the desire to make an optimum borrowing choice (e.g. both economic and legal terms of a loan or a mortgage). Such distinction has been applied in our study.

On the other hand, the quite short history of research on financial advice-seeking makes it very likely that some important variables have been omitted by previous studies. For instance, it is still unclear whether formal (professional) and informal financial advice supersedes or complements the other. The question is particularly vital given the proliferation of social media allowing for the fast and cost-free exchange of knowledge and experiences. For the above reasons, in this article we focused on debt literacy (instead of more general financial literacy) and debt advice-seeking (instead of more aggregate financial advice-seeking). Further, we examined the relationship between debt literacy and debt advice-seeking within a social relations setting. This allowed us to implement some novel variables that were not tested previously.

Given the gaps and mixed results found in the relevant literature, this article addresses two questions: (1) Does professional debt advice have a potential to compensate the shortcomings in consumers' debt literacy? (2) Do individual social networks substitute for the professional advice in a debt-related domain, or perhaps the networks nudge consumers to seek the expert advice? As a result, the article has two goals. The prime goal is to examine the signs, directions, and strengths of relations between debt literacy and professional debt advice-seeking behaviour. The other goal is to learn how this behaviour depends on some variables treated as proxies for social resources embedded in

respondents' social networks. To meet these goals, we exploited a novel survey dataset obtained from a purposive sample of Facebook users having various types of debt. Facebook was chosen because nowadays many people socialize via social media, mainly on Facebook, instead of in person.

To get a better view on key relationships examined in this article, we applied two distinct measures of debt literacy (that is, objective test and self-report) and two different measures of mobilisable resources made available in one's social network. Previous studies suggest that self-assessments of one's financial competences capture some aspects of financial literacy that are not covered by financial knowledge quizzes (Anderson, Baker, & Robinson, 2015; Parker, Bruine de Bruin, Yoong, & Willis, 2012). As a result, it is possible that subjective literacy is linked to advice-seeking behaviour differently from objective literacy. Similarly, we considered important to distinguish the maintenance behaviour derived from the response to an individual's actions shared on Facebook – as a measure related to social networks – from the resources available in the respondent's offline personal network. Although both constructs reflect a reservoir of an individual's social resources, they may convey different informational content when studying their effect on advice-seeking behaviour.

We found that objectively measured debt literacy is insignificant in explaining debt advice-seeking behaviour of sampled respondents, while self-reported debt literacy is significantly and positively related to this behaviour. Our analyses also suggest a significant and positive role of mobilisable resources embedded in one's social network for the propensity to seek advice on debt-related matters. In this article we discuss possible explanations of these in some way surprising results. Specifically, we posit that social networks may improve consumers' metaknowledge – that is, their awareness of what they do not know, but also of 'who knows what' (Leonardi, 2015). The improved metaknowledge, coupled with high financial confidence (i.e. subjective debt literacy), may reduce reluctance to act and induce consumers to ask for professional advice. Our findings confirm recent claims of other researchers that subjectively perceived financial literacy may have an additional effect on financial behaviour compared to objectively measured literacy (Allgood & Walstad, 2016; Anderson et al., 2015; Parker et al., 2012).

Our contribution to the existing literature is threefold. First, to our best knowledge, this is the first study examining the correlation between measures related to social networks and professional debt advice-seeking with a novel dataset of Facebook users. Second, we split debt advice-seeking into four distinct constructs, allowing us to get a deeper insight into the relation between debt literacy and professional debt advice-seeking. Third, we paid particularly close attention to the rarely studied effect which debt literacy measurement (i.e. objectively measured through a test versus self-reported by sampled respondents) may have on the debt advice-seeking.

The hypotheses formulated in this article have been tested with association coefficients and latent categorical variable regression models. To account for the potential endogeneity of debt literacy to exposure to debt advice, we used a hybrid simultaneous two-equation model.

## 2. Literature review and hypotheses development

Financial advice-seeking can be considered a form of information search (Allgood & Walstad, 2016). In traditional economic theory, the information search is perceived as a

process driven by marginal benefits and marginal costs (Stigler, 1961). Individuals reach for the information only when the marginal benefit related to the search activity exceeds its marginal cost. Although it may serve as a general theoretical foundation and framework for empirical studies focused on the link between financial literacy and professional advice-seeking, for several reasons the usefulness of the theory is limited in this case. Firstly, this is because it is unclear who may benefit more (and who incurs more costs) due to the decision to demand the advice – more or less financially literate consumers. Second, the advice-seeking behaviour, as any other financial behaviour, may be prone to biases not covered by traditional theory built on the belief of consumers' rationality. Specifically, debt advice-seeking behaviour may be the subject to what individuals believe they know about credits, loans and debt management or, in other words – to their debt-related confidence. Research indicates significant deviations of such confidence from actual debt literacy on the part of considerably many consumers (Cwynar, Cwynar, & Wais, 2018; Porto & Xiao, 2016; Xia, Wang, & Li, 2014).

There are many arguments in favour of financial advice being more advantageous to low (rather than more) financially literate consumers. Advice, be it professional or not, can compensate for shortcomings in financial literacy and, as a result, be thought of as a substitute for literacy. Therefore, on the one hand, less literate consumers may be more likely to seek advice to avoid or reduce the costs of financial ignorance, including the costs of being unprotected from providers of predatory financial services. Financial unsophistication increases the costs of handling financial decisions unaided: financial advice may be more advantageous to low literate consumers than searching the information on their own, or compared to attaining a higher level of expert education (Stolper & Walter, 2017). Additionally, low literate consumers may be less aware of a frequent advisor's incentive structure in which the experts are motivated to recommend more costly transactions, making the advice counterproductive in some cases. Finally, financially illiterate consumers – as opposed to those who are financially savvy – do not have the sufficient grounds to question the alleged utility of the expert advice even if they are aware of the consumer unfriendly advisor's incentive structure (Debbich, 2015).

On the other hand, opposing arguments do exist. It is argued that financial ignorance may make individuals – unlike those who are more financially literate – incapable of properly realizing the benefits of financial advice and, as a result, reluctant to ask for advice (Allgood & Walstad, 2016; Robb et al., 2012; Stolper & Walter, 2017). Moreover, from a cognitive perspective highly literate consumers may be more likely to have the Socratic 'I know that I know nothing' reflection: the ignorant is unaware of their shortcomings and, as a result, will not strive to eliminate the deficiency. Finally, many previous studies have found strong positive links between financial literacy and income (or wealth) (Cwynar et al., 2018; Hung, Parker, & Yoong, 2009; Klapper, Lusardi, & van Oudheusden, 2015; Lusardi & Tufano, 2015), suggesting that more literate individuals may have stronger incentives to look for financial advice – as predicted by the theory of Jappelli and Padula (2013) – or may be more able to pay for advice (Collins, 2012).

Hence, an interesting question is whether the relation between financial literacy and financial advice-seeking is negative (as for substitutes) or positive (as for complements). A negative (positive) relation would mean that less literate individuals were more (less) likely to seek advice.

Previous studies suggest that the sign of the relation between financial literacy and professional advice-seeking may depend on the theme of the advice (Robb et al., 2012). This pertains particularly to debt advice-seeking. Among the many debt-related matters that individuals can be advised on, the advice sought when debt-related problems arise – and especially debt counselling – deserves separate treatment. By debt counselling we understand advice given to those individuals who face problems with repaying debt. Hence, unlike most other types of financial advice – including advice on other debt-related issues – debt counselling is aimed at solving financial crises of households. For this reason, Allgood and Walstad (2016) claim that ‘debt has to become a problem before people seek debt counseling’ (p. 691), whereas advice on a credit selection is a part of the normal acquisition of information and planning.

Previous researchers have investigated empirically not only the link between consumers’ financial literacy and their inclination to seek advice on a credit choice (a loan or a mortgage, i.e. the help sought *before* the decision to take out a credit), but also between financial literacy and debt counselling (i.e. the help sought *after* the decision to take out a credit, particularly when repayment problems arise). In line with the general findings on financial literacy and advice-seeking, it was found that more literate individuals are more likely to seek advice on a loan or a mortgage selection (Allgood & Walstad, 2016; Porto & Xiao, 2016; Robb et al., 2012). However, prior studies show a negative association between financial literacy and propensity to seek advice on debt counselling (Allgood & Walstad, 2016; Disney, Gathergood, & Weber, 2015; Robb et al., 2012), confirming the specificity of debt counselling. In the absence of conclusive results of former studies and due to the fact that this is the first research on many diverse forms of debt advice-seeking, we formulated the following general hypothesis:

H1. Objective debt literacy is significantly (at 0.05 level) associated with:

H1a: propensity to seek advice on a credit choice

H1b: propensity to seek debt counselling

H1c: propensity to seek advice on legal aspects of a credit contractual agreement

H1d: propensity to seek advice on exchanging existing credit for a new one

H1e: the number of different forms of debt advice the respondents asked for.

At the same time, we assumed that the direction of these associations would be determined in our empirical study based on the survey data that we gathered.

The literature cited in this article so far has dealt with financial literacy as measured by an objective test. Such operationalisation of literacy is referred to in the literature as actual, measured, tested or objective financial literacy. It reflects what respondents really know (or what skills they really have) in terms of personal finance. However, an emerging strand of research exists which posits that an individual’s self-assessment of her financial literacy may have an additional explanatory power in studies of consumers’ financial behaviour, including financial advice-seeking (Allgood & Walstad, 2016; Anderson et al., 2015; Parker et al., 2012). The additional explanatory power means that such self-assessments can predict financial behaviour above and beyond the predictions arising from the actual financial literacy. These self-assessments – referred to in the literature as perceived,

self-reported or subjective financial literacy – reflect what people *think they know* regarding personal finance, instead of what they *really know*. Some authors consider subjective literacy as equivalent to financial confidence, or confidence in financial knowledge (Hung et al., 2009; Parker et al., 2012; Robb et al., 2012).

Parker et al. (2012) argue that, surprisingly, confidence in financial knowledge may prompt desired financial behaviour, regardless of the degree to which it deviates from the person's actual knowledge. Similarly, Allgood and Walstad (2016) claim that as long as the confidence pertains to knowledge – as distinct from confidence in abilities – there is no *a priori* reason to anticipate that high financial confidence will lead to poor financial decisions. It is so because, despite the lack of adequate financial literacy, consumers can still draw on the belief about their own financial acumen, and this belief can induce the right course of action (Hung et al., 2009). Also, one cannot rule out that an individual's self-assessment of her financial literacy captures some aspects of literacy that are not covered by the test used to measure actual literacy – at least in surveys using single and general questions to elicit one's perception of her literacy (e.g. *How would you assess your overall financial knowledge?*) which is often used in the respective literature. As a result, a new stream of thinking in financial literacy scholarship seems to arise – a stream which posits that subjective financial literacy (or financial confidence) is something more than just a mere proxy for objective financial literacy and, as such, confidence can affect financial behaviour through channels different from those associated with objective literacy.

Such a rationale was first empirically confirmed by Parker et al. (2012), who showed that more financially confident individuals were more likely to plan for retirement and to minimize fees when making investments. In other words, being confident was of greater importance for these specific financial behaviours than being properly calibrated in terms of confidence (i.e. having subjective financial knowledge at the same level as the objective knowledge). In a later study, Allgood and Walstad (2016) confirmed that subjective financial literacy could be as valuable as objective financial literacy in explaining a broad range of financial behaviours. Using a sample composed exclusively of LinkedIn users, Anderson et al. (2015) found that self-perceived financial literacy was related to precautionary savings and retirement planning more strongly than actual literacy. A number of studies focusing on the identification of variables explaining demand for financial advice confirmed that financial confidence – referred to by various terms – was a significant predictor of the demand, regardless of the level of objective financial literacy (e.g. Collins, 2012; Debbich, 2015; Robb et al., 2012). Specifically, it was found that confidence behaves in the same way as the objectively measured financial literacy when tested as the predictor of professional debt advice: the confidence relates positively to seeking advice on a loan or a mortgage choice, and negatively to seeking debt counselling (Allgood & Walstad, 2016; Robb et al., 2012). The related literature explains these findings by a reference to the same arguments as those used to justify the expected (and empirically confirmed) positive (negative) link between objectively measured literacy and the demand for advice on a loan or a mortgage choice (debt counselling). For instance, Allgood and Walstad (2016, p. 677) state: 'A financially confident adult, for example, may be willing to shop for the best loans whereas a less financially confident adult may simply take the first loan offered'. Similarly, the expected negative effect of debt-related confidence on the propensity to seek debt counselling is justified by the belief that individuals get inclined to seek advice when a crisis or a problem arises. However, for the same



reasons as those underlying our H1, we proposed the following hypothesis regarding the association between subjective debt literacy and debt advice-seeking:

H2. Subjective debt literacy is significantly (at 0.05 level) associated with:

H2a: propensity to seek advice on a credit choice

H2b: propensity to seek debt counselling

H2c: propensity to seek advice on legal aspects of a credit contractual agreement

H2d: propensity to seek advice on exchanging existing credit for a new one

H2e: the number of different forms of debt advice the respondents asked for.

As in the case of H1, we assumed that the directions of these associations would be determined in our empirical investigation.

The hypotheses H1 and H2 point to significant associations between debt literacy – both objective and subjective – and debt advice-seeking measures. However, they do not refer to the direction of these associations. Being interested in causes of debt advice-seeking behaviour, we had to assume that the propensity to seek advice is the dependent variable, while debt literacy is the independent variable. However, we cannot rule out the possibility that the causality relation can go from advice-seeking to debt literacy. This is plausible, because in our study debt literacy – both objectively measured and self-reported – was observed at the time of the survey and, hence, we had to take account of the possibility that the literacy could arise due to professional advice received previously. In other words, those respondents who sought advice may have learnt due to the exposure to the advice. Therefore, we hypothesised that:

H3. Debt literacy – both objective and subjective – and debt advice-seeking behaviour are subject to simultaneity phenomenon.

Financial literacy may arise as a product of a broader process of consumer socialisation, i.e. a process through which individuals acquire knowledge, skills, attitudes and values that relate to their roles in the marketplace, while being influenced by so called ‘socialisation agents’: family, peers, school, work, or even the media (Moschis, 1987). Sohn, Joo, Grable, Lee, and Minjeung (2012) discuss and empirically examine a theoretical framework in which the financial behaviour of consumers – and the way they acquire financial knowledge – is co-determined by socialisation agents. Duflo and Saez (2003) showed that word-of-mouth learning and observational learning or, more broadly, social interaction-based learning can have significant impact on households’ financial behaviour. Their findings were confirmed later by Hong, Kubik, and Stein (2004) as well as by Cole and Shastry (2009).

In recent years, particularly the literature on consumer socialisation through peer communication using social media – a new form of socialisation – has been gaining audience very rapidly. This comes as no surprise given the increasing proliferation of online social media platforms in the last decade. Peer communication using social media gives consumers a cost-free and immediate access to product information that facilitates their purchase decisions. Moreover, using social media, the borrowers who experienced a debt-related problem may receive a support from those who are in a similar position. For instance, in Poland there are Facebook groups like ‘Pro Futuris’, ‘Pomoc Frankowiczom’

(Help for Swiss-franc debt holders), or 'BankoweBezprawie.pl' (BankingLawlessness.pl), where users share credit-related resources and experiences (e.g. sample lawsuits, complaints, legal acts, etc.).

These two closely intertwined literature strands suggest that social resources that are mobilised online in the form of knowledge or skills shared by other media users, as well as exchanged through in-person relations with other individuals, may significantly increase an individual's financial literacy and, hence, reduce the need to seek professional advice. Chang (2005) reports that in the lowest income cohort of respondents, social networks are the most frequently used source of saving and investment information. In a similar vein, Karaa and Kuğu (2016) found that social media usage explains the advanced financial literacy among students in Turkey. However, on the other hand, one may argue that more abundant social networks increase the likelihood of seeking professional financial advice because of the far-reaching professionalisation of the financial domain. In spite of the experiences collected by other members of a social network, there is still a significant gap between the competence of the social network and the competence of financial experts. The 'shared knowledge and skills' of a social network may push individuals to ask for the professional advice (because the experience of a network's members persuades them to do so) rather than to discourage them from seeking the advice. Given the highly specialised debt domain and the extraordinarily adverse effects debt can potentially have on the household situation, we assumed that the latter is more probable and, therefore, we put forward the following hypothesis:

H4: Individuals with greater amount of social resources embedded in their networks are more likely to seek professional advice on all debt-related themes.

Finally, it must be noted that in this article we focus exclusively on *seeking* advice on debt-related issues. This is important, because the existing literature approaches the financial advice problem in several distinct ways. First, there are studies probing factors underlying the decision to demand a professional advice – as we did in our study (see also, for instance, Allgood & Walstad, 2016; Gentile, Linciano, & Soccorso, 2016; Robb et al., 2012). Second, some researchers examine respondents who *received* advice, while others go even further in their studies and check whether the respondents *followed* the advice or improved their financial behaviour in response to advice (Bucher-Koenen & Bucher, 2015; Hung & Yoong, 2010). In our study, we asked our survey participants whether they *asked for* any advice from a professional, while putting aside whether they received or followed the advice. Hence, the issue of the potential benefits of financial advice is beyond the scope of this article. We assume that the advice is beneficial – although there are studies indicating that this is not necessarily the case (see Stolper & Walter for an overview and discussion). In short, we divert from the advice supply-side issues regarding debt advice and concentrate exclusively on the demand-side.

### 3. Method

#### 3.1. Data collection and participants

We conducted the questionnaire-based survey during the period from 28 May 2017 through 6 June 2017. The data were collected through Computer-Assisted Web

Interviewing (CAWI), with a purposive sample of 1,055 active Facebook users having personal experience with any formal loan not more than five years previously. The response rate reached 14%. We assumed that five years is a limit beyond which many people may not remember some borrowing details, or may not be informed about the rapid changes taking place on the financial market. Due to problems with the information sources needed for the sampling frame of credit holders from Poland active on Facebook, we were constrained to the non-probabilistic selection of respondents to our research. As a consequence, results cannot be generalized to the whole population of credit holders in Poland. The goal was to gather specific, credit-related information for a better understanding of debt literacy and debt advice-seeking behaviour among social media users. We reached our respondents on a commercial online panel managed by Pollster Research Institute, a research agency operating in Poland. There are more than 89,000 panellists enrolled on this platform. The Institute adjusted the structure of respondents in order to mirror the distributions of major demographic variables characterizing Polish society (i.e. gender, age, place of residence, education). More sample-related details could be found in Table 1 in which we compared our sample to the random sample of adult Poles and to the sample of Facebook users in Poland. This comparison allows for rough assessment of potential biases our sample suffers from (which, in terms of gender and place of residence, are not considerable, though).

There is a lively debate in the literature focused on the pros and cons of probability and non-probability sampling in social research. A charge often raised by critics of non-

**Table 1.** Sample composition in terms of main sociodemographic variables.

	Polish population**		FB users in Poland*		Sample used in this study	
	%	N (mln)	%	N (mln)	%	N
<i>Gender</i>						
Male	48	18.6	49	9.9	48	511
Female	52	19.8	51	10.2	52	544
All	100	38.4	100	20.1	100	1,055
<i>Place of residence</i>						
Village	40	15.3	38	7.6	35	368
Town up to 20,000	13	5	13	2.6	9	98
City 20,001–50,000	11	4.3	11	2.2	10	104
City 50,001–100,000	8	3	9	1.8	11	114
City 100,001–200,000	8	3.2	8	1.6	8	88
City 200,001–500,000	20 <sup>^</sup>	7.6 <sup>^</sup>	8	1.6	11	114
City 500,001 or more			12	2.7	16	169
All	100	38.4	99	20.1	100	1,055
<i>Educational attainment</i>						
Primary school	13	4.9	3	0.6	0.7	7
Junior high school	5	1.5	4	0.8	0.7	7
Basic vocational school	18	7	18	3.6	9	96
Secondary (uncompleted)	–	–	7	1.4	3	33
Secondary	28	10.7	26	5.2	28	292
Post-secondary school	–	–	4	0.8	11	112
Bachelor's degree	–	–	7	1.4	7	76
Master's degree (uncompleted)	–	–	5	1	2	25
Master's degree	23	8.8	18	3.6	37.8	399
PhD or higher	–	–	–	–	0.8	8
All	87****	32.9****	92***	17.6***	100	1,055

Note: <sup>^</sup>Data available for cities 200,001 or more; \*Source: Megapanel PBI/Gemius (2015). Internet users aged 7+; \*\*Source: Statistics Poland (2018); \*\*\*Our sample contains users 18+, while Megapanel PBI/Gemius (2015) includes users 7+; \*\*\*\*Only citizens completed primary school at least.

probability methods is that they are less time- and cost-effective (Feild, Pruchno, Bewley, Lemay, & Levinsky, 2006) and that they decrease the overall accuracy of samples (Yeager et al., 2011). On the other hand, there is research suggesting that non-probability online samples are not less accurate than probability-based online panels (Martinsson, Dahlberg, & Lundmark, 2013). Probability samples usually suffer from low recruitment rate and the problem of having a known sampling frame (Rivers, 2006). Hays, Liu, and Kapteyn (2015) reviewed both approaches and concluded that, despite differences in representativeness, probability and non-probability sampling produce similar errors of estimates. Accordingly, Rivers (2006) found that in the 2006 U.S. Congressional elections non-random methods of sampling outperformed random sampling in terms of estimates. Thus, we are aware of the limitations imposed by non-probability sampling, but it does not automatically mean that our results are not representative for the larger population of debt holders in Poland. Overall, the distribution of key sociodemographic traits in our sample did not deviate (or did not deviate significantly) from the distributions in representative samples of Polish society (Cwynar, Cwynar, Wais, & Parda, 2017; Czapiński & Panek, 2015).

Our questionnaire consisted of 40 questions and was divided into 7 sections: (i) respondents' characteristics (9 questions), (ii) social media usage (6 questions), (iii) debt literacy (4 questions), (iv) current debt position (5 questions), (v) debt behaviour and experiences, including advice-seeking (4 questions), (vi) social networks (3 questions) and (vii) psychosocial variables (9 questions). The study presented in this article used only selected data collected during the survey. The survey instrument is available upon request from the authors.

## **3.2. Measures**

### **3.2.1. Debt advice-seeking measures**

Table 2 reports key characteristics of all variables used in our study. To measure the debt advice-seeking behaviour of the sampled respondents, we used the following question:

In the last 5 years, have you asked for any advice from a professional about any of the following: (a) a credit choice, (b) legal aspects of a contractual credit agreement, (c) debt counselling, or (d) exchanging existing credit for a new one?

For each of these four specific behaviours, a binary variable indicator is created that equals 1 if the respondent provides a positive response, and 0 otherwise. The responses were further used as four distinct measures of debt advice-seeking and serving as separate dependent variables in our regression models. We used the following abbreviated names for these four measures: DCHOICE, DLEGAL, DCOUNSEL, and DCHANGE. These four advice themes can be easily aggregated into two broader categories: (i) pre-contractual advice (consisting of the advice on a credit choice as well as on legal aspects of a credit contract), and (ii) post-contractual advice (consisting of debt counselling and advice on the exchange of the existing credit for a new one). By post-contractual advice we mean an advice given after signing a credit contract. To a degree, such division may also be interpreted as a way to separate information-seeking from help-seeking. The aggregation was not applied when running regression, however, we refer to this issue in the discussion section.

**Table 2.** Definitions and descriptive statistics of the variables used in this study.

Abbreviation	Variable	Method of calculation	Min	Max	Median	Mode
DCHOICE	Seeking advice on a loan or a mortgage choice	Nominal variable equals 1 if the respondent provides a positive response, and 0 otherwise	0	1	x	0.462*
DCOUNSEL	Seeking debt counselling	Nominal variable equals 1 if the respondent provides a positive response, and 0 otherwise	0	1	x	0.153*
DLEGAL	Seeking advice on legal aspects of a credit contractual agreement	Nominal variable equals 1 if the respondent provides a positive response, and 0 otherwise	0	1	x	0.168*
DCHANGE	Seeking advice on exchanging existing credit for a new one	Nominal variable equals 1 if the respondent provides a positive response, and 0 otherwise	0	1	x	0.223*
DAS	The number of advice forms the respondents sought	Ordinal variable takes the natural numbers values from 0 (no any forms advises) to 4 (4 forms of advises)	0	4	1	0
ODL	Objective debt literacy	Ordinal variable estimated on 3-question single-choice test	0	3	1	0
SDL	Subjective debt literacy	Ordinal variable estimated on 7-point Likert scale where 1 means very low and 7 means very high	1	7	5	5
SOCAP	Individual social capital resources	Ordinal variable estimated on 7-question single-choice test asked separately in relation to family(1), friends(2) and acquaintances(3)	0	27	9	0
FBSOCAP	Relationship maintenance behaviour	Ordinal variable estimated on 3-question single-choice test asked separately in relation to family(1), friends(2) and acquaintances(3)	0	9	9	9
REPROB	Repayment problems	Ordinal variable estimated on 3-question single-choice test	0	3	0	0
RISKAT	Attitude towards risk	Ordinal variable estimated on 3-question test with respondents' self-assessments on a 5-point Likert scale (where 1 meant 'Decidedly disagree' and 5 meant 'Decidedly agree')	3	15	7	9
TRUST	Trust in lending institutions	Ordinal variable estimated on 1-question test with respondents' self-assessments on a 5-point Likert scale (where 1 meant 'Decidedly disagree' and 5 meant 'Decidedly agree')	1	5	3	3
FINSTAT	Financial situation of the respondent's household	Ordinal variable estimated on 5-question single-choice test	1	5	3	3
AGE	Age	Interval variable	18	79	39	37
EDUCAT	Educational attainment	Ordinal variable: (1 = uncompleted primary school; =2 for primary school; =3 for junior high school; =4 for basic vocational school; =5 for secondary uncompleted school; =6 for secondary school; =7 for post-secondary school; =8 for bachelor's degree; =9 for master's uncompleted degree; =10 for master's degree; =11 for PhD or higher)	2	11	7	10
RESIDENCE	Place of residence	Ordinal variable: (=1 for village; =2 for town up to 20,000; =3 for city 20,001-50,000; =4 for city 50,001-100,000; =5 for city 100,001-200,000; =6 for city 200,001-500,000; =7 for city more than 500,000 residents)	1	7	3	1
GENDER	Gender	Nominal variable equals 1 if respondent is male, 0 if female	0	1	x	0.484**

Note: \*Share of positive answers (equals 1); \*\*Share of male respondents (equals 1).

Based on the same question that was used to measure the occurrence of advice on four specific themes indicated above, we also estimated a composite variable intended to measure the number of different advice themes a respondent has sought in the last five years. Given that each of these four separated measures of debt advice was generated as a binary variable equal to 1, should respondents report that they sought the advice on a particular theme (0 otherwise), the values of this additional composite measure – with the abbreviated name of DAS – ranged between 0 and 4. Compared to four variables measuring the propensity to seek advice on a specific theme, the composite measure conveys different informational content. The composite measure allows the filtering out of respondents particularly inclined to seek debt advice (i.e. on each stage of the borrowing process) and learn the factors responsible for the inclination.

### 3.2.2. Debt literacy measures

We measured actual debt literacy (labelled as ODL – objective debt literacy – hereafter) with the instrument designed by Lusardi and Tufano (2015) which is a three-question, single-choice test (see Appendix to review these questions). Correct answers were coded as 1 while all remaining options (incorrect answers, ‘Don’t know’ responses and ‘Prefer not to answer’ responses) were coded as 0. Hence, the debt literacy index ranged between 0 and 3 in value.

Respondents’ self-assessments of debt literacy (labelled as SDL – subjective debt literacy), used as a proxy for confidence in debt-related knowledge, were measured with a 7-point Likert scale. SDL came from the survey item that asked: *On a scale of 1–7, where 1 means very low and 7 means very high, how would you assess your debt knowledge?* This question preceded the objective diagnosis of debt literacy based on the aforementioned three-question test.

### 3.2.3. Measures related to social networks

The main novelty of our study lies in the inclusion of variables that can be considered as proxies for social capital (or – more precisely – resources made available in one’s social networks). We used two such variables: a composite index of individual social capital resources potentially mobilisable as a help, a support or a form of assistance that can be received from family, friends or acquaintances (SOCAP, hereafter), and relationship maintenance behaviour derived from the response to respondents’ actions shared on Facebook (FBSOCAP). The SOCAP variable is made of resources from the respondents’ ego network that could be linked to specific ties: family, friends, acquaintances. Such conceptualisation follows the theory of social resources proposed and developed by Lin (1999, 2001). Consequently, we used the Resource Generator questionnaire designed to measure social capital embedded in personal networks (Gaag & Snijders, 2005). SOCAP was estimated with the following ‘Yes/No’ question:

If you were in need, would there be someone you could turn to for help on the following matters: (a) Borrowing several thousand PLN? (b) Escaping the vicious circle (spiral) of debt? (c) Temporary sharing a flat or a house? (d) Contacting a financial/credit advisor? (e) Recommending a credit product? (f) Recommending how to invest funds? (g) Help in evaluation of credit contractual agreements? (h) Help in reducing the indebtedness? (i) Bringing a claim against a lending institution?

The question was asked separately in relation to family, friends and acquaintances. As a result, SOCAP ranged from 0 to 27 in value (Yes = 1, No = 0).

Unlike resources covered by SOCAP – having diverse character (material, financial, advisory, etc.) – the online practices reflected in FBSOCAP could manifest themselves as responses to shared information on Facebook. This variable has been built upon the Facebook Relationship Maintenance Behaviour Scale proposed by Ellison, Vitak, Gray, and Lampe (2014) and adjusted to a Polish Facebook context. FBSOCAP was estimated with the following ‘Yes/No’ question: *Do other people from your Facebook network behave in the following way: (a) They answer when I share good news, (b) They answer when I share bad news, (c) They answer when I ask a question?* Again, this question was asked separately in relation to family, friends and acquaintances. As a result, FBSOCAP ranged from 0 to 9 in value (Yes = 1, No = 0). Thus, while SOCAP indicates the volume of resources available in the respondent’s personal network (including resources significant for debt-related choices), FBSOCAP captures the users’ likelihood to engage in Facebook communication that may enable access to diverse social resources. Given the different nature of these two measures related to social networks, our intuitive expectation was that FBSOCAP may be more important when seeking advice on pre-contractual issues, while SOCAP may be more useful when post-contractual debt-related problems arise.

#### 3.2.4. Control variables

Although our study was focused on the link between debt literacy and asking for professional debt advice, we augmented the analysis with a broad set of control variables, both suggested by the existing literature on financial literacy and newly introduced by us. Thus, the REPROB variable (repayment problems) was measured by asking the respondents the following battery of questions: (1) *Have you ever found yourself not repaying any debt?* (2) *Have you ever been subject to an eviction (vindication) process?* (3) *Have you ever renegotiated any credit contract with your lender?* The respondents would choose among three responses to each of these questions: (a) ‘Yes’ – coded as 1, (b) ‘No’ – coded as 0, (c) ‘Refuse to answer’ – coded as 0. Hence, REPROB had a theoretical range of 0–3. This variable, though measured differently, was previously examined in a debt advice-seeking study by Collins (2012) and also in one by Disney et al. (2015).

Attitude towards risk (labelled RISKAT in this study) was measured through respondents’ self-assessments on a 5-point Likert scale (where 1 meant ‘Decidedly disagree’ and 5 meant ‘Decidedly agree’) when faced with the following three statements: (1) *Life without risk is boring;* (2) *I often exceed permitted speed;* (3) *I visit dangerous places and countries.* RISKAT was estimated as a composite index with a range of 3–15 in value. This variable – although measured differently – was previously tested by Robb et al. (2012) as a factor potentially explaining financial advice-seeking.

Respondents were also asked to self-report their trust in lending institutions (marked as TRUST) on a 5-point Likert scale (where 1 meant ‘Decidedly disagree’ and 5 meant ‘Decidedly agree’) when presented with the following statement: *I have no confidence in lending institutions.* Formerly, this variable was tested in financial advice-seeking studies by Calcagno and Monticone (2015), Porto and Xiao (2016) and Gentile et al. (2016).

Finally, we used standard sociodemographic and economic features in our regressions: sex (GENDER), place of residence (RESID), where we distinguished seven classes (from

village to city above 500,000 residents) and values of 1–7 attached to them, age (AGE), education (EDUCAT), where we distinguished eleven levels of educational attainment (from uncompleted primary school to PhD or higher) and values of 1–11 attached to them, and financial situation of respondents' households (FINSTAT) which is a discrete variable with a range of 1–5 in value. The variable was measured by asking the respondents the following single-choice question:

Indicate financial situation of your household: (a) Often we do not have enough funds to cover the most essential expenses (rent, energy, etc.); (b) From time-to-time we do not have enough funds to cover the most essential expenses (rent, energy, etc.); (c) We have enough funds to cover current expenses; (d) From time-to-time we can afford some extra expenses out of those on the most essential ones; (e) Each month we can afford some extra expenses out of those on the most essential ones.

### 3.3. Analytical strategy and models

We started the analyses with checking the strength and direction of associations between our debt advice-seeking measures (DCHOICE, DLEGAL, DCOUNSEL, DCHANGE, and DAS) and: (i) two measures of debt literacy (ODL and SDL), (ii) two measures related to social networks (SOCAP and FBSOCAP), and (iii) control variables. Since DAS and all variables other than DCHOICE, DLEGAL, DCOUNSEL, and DCHANGE are ordinal and the distances between the consecutive categories are not known, we used asymmetric Somers' D to investigate the associations. Because DCHOICE, DLEGAL, DCOUNSEL, and DCHANGE are nominal variables, in these cases we used Goodman-Kruskal  $\tau$  instead. The analysis of these associations allows for a preliminary verification of assumed hypotheses.

Respondents' *propensity* to seek advice is unobservable. It pertains to respondents' inclination to make a decision, yet we can observe only the *decision*, i.e. whether the respondent sought an advice and what types of advice have been sought. In other words, the propensity to seek advice is latent variable. Each respondent is characterised by a propensity to seek advice, however she will ask for the advice only when the need to be advised is strong enough to exceed a threshold level. Clearly, the propensity depends on many factors, including those indicated by previous literature (debt literacy and social networks being among them), as well as on random component. Therefore, to study the relations between propensity to seek advice and selected independent variables, we used latent categorical variable regression models. These relations can be specified in the following way (we refer to DCHOICE in the specification below; however, the specification applies equally to DLEGAL, DCOUNSEL, and DCHANGE):

$$\text{DCHOICE}_i^* = \mathbf{X}_i^T \boldsymbol{\alpha} + \varepsilon_i \quad (1)$$

where  $\text{DCHOICE}_i^*$  – unobservable propensity to seek advice on a credit choice of  $i$ -th respondent;  $\mathbf{X}_i$  – observations vector of independent variables including ODL, SDL, SOCAP, FBSOCAP and control variables for  $i$ -th respondent;  $\boldsymbol{\alpha}$  – a vector of structural parameters of the model;  $\varepsilon_i$  – random disturbance.

DCHOICE is observable nominal variable for which we can assume that if  $\text{DCHOICE}^*$  exceeds a threshold, the respondent will ask for the advice (she will not otherwise)



(Maddala, 2006, pp. 371–372):

$$DCHOICE_i = \begin{cases} 1, & \text{when } DCHOICE_i^* \geq 0 \\ 0, & \text{when } DCHOICE_i^* < 0 \end{cases} \quad (2)$$

Hence, to test the relations between DCHOICE and the set of selected independent variables, we used binomial logistic regression model having the following specification:

$$DCHOICE_i = \mathbf{X}_i^T \boldsymbol{\alpha} + \varepsilon_i \quad (3)$$

where  $DCHOICE_i$  – variable assuming the values of: 1 if  $i$ -th respondent sought the advice about a credit choice in the last 5 years; 0 otherwise;  $\varepsilon_i$  – random disturbance with standard logistic distribution. Estimated logistic model allows for the calculation of probability of seeking advice on a credit choice, which can be used as a measure of the propensity to seek the advice by  $i$ -th respondent:

$$p_i = \frac{\exp(FDCHOICE_i)}{1 + \exp(FDCHOICE_i)} \quad (4)$$

where  $p_i$  – probability of  $i$ -th respondent to seek advice on a credit choice;  $FDCHOICE_i$  – fitted (predicted) value of logit for  $i$ -th respondent.

To take account of different shares of respondents seeking and not seeking advice in total sample, when estimating  $FDCHOICE_i$  we applied Anderson-Maddala adjustment (Maddala, 2006, p. 376) aimed at decreasing the value of constant by  $(\ln u_1 - \ln u_0)$ , where:  $u_1$  – the share of respondents seeking advice;  $u_0$  – share of respondents not seeking advice.

In our study, debt literacy – both objectively measured (ODL) and self-reported (SDL) – was observed at the time of the survey and, hence, we had to address the possibility that the literacy could arise due to the professional advice received previously. In other words, such research design as the one applied in our study may create a reverse causality in our data: as opposed to what we have assumed earlier, the causality relation can go from advice-seeking to debt literacy. Those respondents who sought advice, may have learnt due to the exposure to the advice. Therefore, to address the potential endogeneity problem (or, more precisely, simultaneity phenomenon), we applied the following model (Greene, 2003, p. 378; the same models have been estimated for DLEGAL, DCOUNSEL, and DCHANGE)<sup>1</sup>:

$$\begin{cases} DCHOICE_i = f((SDL_i, \mathbf{X}_{1i})^T \boldsymbol{\alpha}_1 + \varepsilon_{1i}) \\ SDL_i = f((DCHOICE_i, \mathbf{X}_{2i})^T \boldsymbol{\alpha}_2 + \varepsilon_{2i}) \end{cases} \quad (5)$$

where DCHOICE, SDL- endogenous variables or jointly dependent variables;  $\mathbf{X}_1, \mathbf{X}_2$  – vectors of exogenous variables in the first and the second equation, respectively;  $\boldsymbol{\alpha}_1, \boldsymbol{\alpha}_2$  – vectors of structural parameters in the first and the second equation, respectively;  $\varepsilon_1, \varepsilon_2$  – random disturbances in the first and the second equation, respectively.

SDL is an ordinal variable which takes values ranked from the lowest (1) to the highest (7), being the respondents' subjective assessments of their debt literacy levels, and the differences between consecutive ranks are unknown. In such a situation, the most appropriate approach to explain the variation of the dependent (endogenous) variable is the use



The second stage is the estimation of DCHOICE and SDL on FDCHOICE and FSDL and exogenous variables, respectively:

$$\begin{cases} \text{DCHOICE}_i = f((\text{FSDL}_i, \mathbf{X}_{1i})^T \boldsymbol{\alpha}_1 + \varepsilon_{1i}) \\ \text{SDL}_i = f((\text{FDCHOICE}_i, \mathbf{X}_{2i})^T \boldsymbol{\alpha}_2 + \varepsilon_{2i}) \end{cases} \quad (12)$$

DCHOICE and SDL are interdependent when the estimated parameters at each of these two variables are statistically significant at the assumed significance level. Otherwise, we can assume that SDL is exogenous to DCHOICE and, therefore we can use binomial logistic regression model to find factors determining the propensity to seek advice on a credit choice.

The model specified above allows us to test H3, namely the hypothesis which states that our measures of debt literacy– both objective and subjective – and debt advice-seeking measures are subject to the simultaneity phenomenon.

We also estimated the regressions for DAS as the ordered dependent variable, i.e. for the number of different advice themes the sampled respondents sought. These models had the following specification:

$$\text{DAS}_i = \mathbf{X}_i^T \boldsymbol{\delta} + \varepsilon_i \quad (13)$$

where  $\text{DAS}_i$ – ordinal variable assuming the integer values from 0 to 4 which reflects the number of different advice themes sought by an  $i$ –  $th$  respondent;  $\boldsymbol{\delta}$ – vector of structural parameters.

To select independent (exogenous) variables to all models estimated in our study, we applied ‘from general to specific’ approach. The approach assumes that in the first step the model is estimated with all ten potential independent variables selected based on the literature review and own knowledge (see Table 1). Then, the variable having the highest value of  $p$ -parameter (and, at the same time, value above 0.05) is identified. In the next step such variable is eliminated from the model, and the model is re-estimated. This procedure is carried forward until all parameters in the model are significant at 0.05 level. The variables selected in this way have been regarded as exogenous in the hybrid two-equation simultaneous model as well. Starting with the initial model estimated with the ‘from general to specific’ selection method, we further estimated a series of additional models which brought a significant amount of new information.

To test the model fit, for binomial logistic models we used  $R^2$  Nagelkerke and Count  $R^2$ , which measures the percent of proper indications of the model. Cramer rule (1999) was used when running the computations. The rule assumes that the threshold value is the share of respondents with the value of the variable at 1 in total sample (i.e. the share of respondents who sought the advice) instead of 0.5 as in the standard rule. Such approach is particularly suitable for unbalanced samples (e.g. in terms of DCOUNSEL, DLEGAL and DCHANGE distribution in our case).

Additionally, the model fit has been assessed using the likelihood ratio (LR) test. Collinearity was controlled by the variance inflation factors (VIF).

## 4. Results

### 4.1. The analysis of associations

55.9% of participants reported using some type of professional debt advice within five-year period of time preceding our survey. Slightly more than half of them (28.5%) sought more than one type of the advice (advice about two different debt themes – 18.1%; advice about three different debt themes – 4.8%; advice about four different debt themes – 5.6%). The most popular type of advice was a credit choice (46.2%), while the least popular was debt counselling (15.3%). 22.3% of sampled respondents sought advice on exchanging the existing credit for a new one, and 16.8% reported that they sought advice on the legal aspects of a credit contractual agreement.

Table 3 summarises results of the analysis of associations.  $\tau$  Goodman-Kruskal asymmetric coefficients between all advice-seeking measures and objective debt literacy turned out to be insignificant. Hence, our data does not support H1a, H1b, H1c, H1d. However, our debt advice-seeking measures – except debt counselling – are significantly associated with subjective debt literacy. This confirms H2a, H2c, and H2d.

The same  $\tau$  Goodman–Kruskal asymmetric coefficients have been used to check the association between our debt advice-seeking measures and the individual social capital (SOCAP) as well as the relationship maintenance behaviour (FBSOCAP). The results bring partial confirmation of H4: all applied advice measures are significantly associated with SOCAP, however the associations with FBSOCAP are insignificant. The conclusions on the directions of these associations are further drawn on the basis of regression results (subsection 3.2).

Among control variables, debt repayment problems (REPROB) are significantly associated with all debt advice-seeking measures. Risk attitude (RISKAT) and financial situation (FINSTAT) are significantly associated with three of the applied advice measures (the only exception is seeking advice on exchanging the existing credit for a new one in the case of RISKAT, and seeking advice on a credit choice in the case of FINSTAT). We also found three additional significant (at 0.05 level) associations between control variables and debt

**Table 3.** Association coefficients between debt advice-seeking measures and other variables.

Variable	Somers' D Association with DAS	$\tau$ Goodman-Kruskal Association with			
		DCHOICE	DCOUNSEL	DCHANGE	DLEGAL
ODL	−0.017	0.002	0.003	0.003	0.003
SDL	0.088***	0.026***	0.007	0.014**	0.013**
SOCAP	0.128***	0.056***	0.060***	0.048***	0.096***
FBSOCAP	0.018	0.012	0.007	0.007	0.009
REPROB	0.369***	0.017***	0.361***	0.081***	0.075***
RISKAT	0.060***	0.025***	0.022***	0.016	0.029***
TRUST	−0.004	0.004	0.005	0.002	0.001
FINSTAT	−0.123***	0.007	0.152***	0.040***	0.037***
AGE	−0.001	0.063	0.053	0.081*	0.075**
EDUCAT	−0.005	0.009	0.016***	0.006	0.007
RESIDENCE	0.025	0.016***	0.002	0.006	0.009
GENDER	−0.021	0.001	0.0004	0.0001	0.002

Note: This table presents the association coefficients calculated on the sample of  $N = 1,055$  observations. Detailed definitions of the variables are summarised in Table 2.

\*Statistically significant at  $p < 0.1$ .

\*\*Statistically significant at  $p < 0.05$ .

\*\*\*Statistically significant at  $p < 0.01$ .

advice-seeking measures (between age and seeking advice on legal aspects of a credit agreement, between education and debt counselling, and between residence and seeking advice on a credit choice).

On the other hand, we found significant positive association between objective and subjective debt literacy (symmetric Somers'  $D = 0.130$  ( $p < 0.001$ )). Similarly, the relationship maintenance behaviour (FBSOCAP) was significantly linked to individual social capital (SOCAP) (symmetric Somers'  $D = 0.113$  ( $p < 0.001$ )).

The sign and the strength of relations between the number of different advice themes the sampled respondents sought (DAS) and other variables were measured by asymmetric Somers'  $D$  in our study. We found DAS significantly linked (at 0.01 level) to subjective debt literacy (SDL), individual social capital (SOCAP), repayment problems (REPROB) and risk attitude (RISKAT). Somers'  $D$  values show that the relation between the objective debt literacy and the number of different advice themes the sampled respondents sought (DAS), is insignificant. Hence, H1e must be rejected. Nevertheless, we found that DAS is significantly associated with the subjective debt literacy, which confirms H2e.

#### 4.2. Regression analysis

We estimated the parameters of the following four hybrid simultaneous two-equation models: DCHOICE and SDL, DCOUNSEL and SDL, DCHANGE and SDL, DLEGAL and SDL (see Table 4 for details). The application of 'from general to specific' variable selection procedure resulted in the following exogenous variables included in three models: SOCAP, REPROB, ODL, FINSTAT, RISKAT, TRUST, and AGE. The fourth model included EDUCAT as additional exogenous variable. All these models consist of the exactly identified or over-identified equations which was verified by appropriate computational procedures (Greene, 2003, pp. 390–394). This means that they can be estimated by the method analogous to 2SLS. In the estimated models the parameters on fitted endogenous variables (FSDL, FDCHOIC, FDCOUNSEL, FDLEGAL and FDCHANGE) are insignificant (except the parameter at FDLEGAL in Model 3). This means that the reversed causality does not exist in our data in terms of the following pairs of variables: SDL and DCHOICE, SDL and DCOUNSEL, SDL and DCHANGE. On the other hand, DLEGAL affects SDL, but not the other way round.<sup>2</sup> Such results do not confirm our H3.

Hence, SDL is an exogenous variable to all four debt advice-seeking variables. As a consequence, the appropriate approach to find factors determining variability of DCHOICE, DCOUNSEL, DLEGAL and DCHANGE are binomial logistic models.

Table 5 summarises the parameter estimates for logistic regression models of these four measures of debt advice-seeking. The logistic regression model with DCHOICE as the dependent variable, estimated using 'from general to specific' selection method (Model 5, henceforth), comprises three independent variables: SDL, SOCAP and REPROB.  $R^2$  Nagelkerke was 0.068, while Count  $R^2 = 59.1\%$ .

In light of our results, the propensity to seek advice about a credit choice is higher for respondents displaying higher level of subjective debt literacy (SDL), having greater individual social capital resources embedded in their networks (SOCAP), and reporting more repayment problems (REPROB). The probability of seeking advice on a credit choice, estimated on the basis of Model 5 for respondent with the lowest possible value of SDL (=1), minimum SOCAP (=0), and free of repayment problems (REPROB = 0) was 0.2718. On the

**Table 4.** Parameter estimates for hybrid simultaneous two-equation models.

Variable	Model 1		Model 2		Model 3		Model 4	
	DCHOICE	SDL	DCOUNSEL	SDL	DLEGAL	SDL	DCHANGE	SDL
FDCHOICE		1.340						
FDOUNSEL				0.444				
FDLEGAL						1.579***		
FDCHANGE								0.792
FSDL	0.008		-0.445		-0.026		0.409	
SOCAP	0.042***	0.035**	0.079***	0.047***	0.072***	0.033***	0.011	0.045***
REPROB	0.243***		1.347***		0.568***		0.483***	
ODL		0.312***		0.305***		0.313***		0.295***
FINSTAT		0.284***	-0.571***	0.305***	-0.315**	0.362***	-0.406***	0.310***
RISKAT		0.042*		0.046**		0.036		0.041*
TRUST		0.141**		0.159***		0.161***	0.094	0.138**
AGE		0.009*		0.010**		0.010**		0.009*
EDUCAT					0.097**			
Constant	-0.768**		-0.977*		-2.567***		-1.863***	-1.065**
$\gamma_1$		-0.781		-1.011**		-0.838*		0.590
$\gamma_2$		0.875		0.645		0.819*		1.896***
$\gamma_3$		2.180***		1.951***		2.126***		2.481***
$\gamma_4$		2.765***		2.537***		2.714***		3.871***
$\gamma_5$		4.155***		3.927***		4.111***		5.299***
$\gamma_6$		5.583***		5.355***		5.541***		
Pseudo R <sup>2</sup>	0.0316		0.3775		0.1288		0.0831	
Likelihood ratio test: Chi-square (number of variables)	46.1***	436.1***	340.3***	436.8***	122.9***	441.3***	93.0***	436.4***
Max VIF	2.294	4.415	3.571	1.542	3.721	2.404	<b>4.687</b>	1.982

Note: This table presents the parameter estimates for four hybrid simultaneous two-equation models. In all models, one endogenous variable is subjective debt literacy (SDL) and the second is propensity to seek advice on one of the four themes: DCHOICE, DCOUNSEL, DLEGAL and DCHANGE, respectively. FSDL, FDCHOICE, FDOUNSEL, FDLEGAL and FDCHANGE are fitted values of the endogenous variables. The other exogenous variables have been selected using 'from general to specific' method. In each model, the first equation is binominal logistic regression which shows the propensity to seek advice on one of the four debt-related themes (DCHOICE, DCOUNSEL, DLEGAL AND DCHANGE, respectively), while the second equation is ordered dependent variable logistic regression model which shows subjective debt literacy (SDL).

All models were estimated with maximum likelihood method and with robust standard errors (QML) on the sample of  $N = 1,055$  observations. Detailed definitions of the variables are summarised in Table 2.

$\gamma_k$  – estimated values of thresholds. If estimated for an  $i$ -th respondent the value of  $FSDL_i \leq \gamma_1$ , then subjective debt literacy of this respondent takes 1 in 7-point Likert scale, which means the lowest value; if  $\gamma_1 < FSDL_i \leq \gamma_2$ , then subjective debt literacy of this respondent takes 2, and so on.

VIF – variance inflation factors.

\*Statistically significant at  $p < 0.1$ .

\*\*Statistically significant at  $p < 0.05$ .

\*\*\*Statistically significant at  $p < 0.01$ .

**Table 5.** Parameter estimates for binominal logistic regression models of four measures of debt advice-seeking.

Variable	DCHOICE		DCOUNSEL		DLEGAL		DCHANGE
	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
SDL	0.124***	0.165***		0.136*		0.122*	0.120**
SOCAP	0.037***		0.056***		0.071***	0.066***	0.027***
FBSOCAP		0.050*		0.114**			
REPROB	0.248***	0.258***	1.311***	1.313***	0.565***	0.562***	0.514***
FINSTAT			-0.703***	-0.662***	-0.323**	-0.344***	-0.307***
TRUST							0.141**
EDUCAT					0.096**	0.089**	
Constant	-1.268***	-1.467***	-1.529***	-2.565***	-2.600***	-2.985***	-1.898***
R <sup>2</sup> Nagelkerke	0.068	0.044	0.478	0.467	0.185	0.190	0.132
Count R <sup>2</sup> (%)	59.1	57.7	85.4	84.1	69.5	68.7	70.6
Likelihood ratio test: Chi-square (number of variables)	54.4***	35.4***	338.6***	329.5***	122.9***	126.8***	95.6***
Max VIF	1.066	1.005	1.151	1.148	1.186	1.202	1.171

Note: This table presents the parameter estimates for binominal logistic regression models of four measures of debt advice-seeking on exogenous variables selected using 'from general to specific' method (models 5, 7, 9, and 11), and additional models (i.e. models 6, 8, and 10) which, despite worse properties (lower Chi-square statistic) extend the knowledge of the investigated phenomenon.

All models were estimated with maximum likelihood method and with robust standard errors (QML) on the sample of N = 1,055 observations. Detailed definitions of the variables are summarised in Table 2.

VIF – variance inflation factors.

\*Statistically significant at  $p < 0.1$ .

\*\*Statistically significant at  $p < 0.05$ .

\*\*\*Statistically significant at  $p < 0.01$ .

other hand, the probability estimated for respondent with the highest possible value of SDL (=7), maximum SOCAP (=27), and highest index of repayment problems (REPROB = 3) was 0.8195.

Model 5, obtained using 'from general to specific' selection method was further exploited to estimate a series of other models. Considering significant relation between individual social capital (SOCAP) and the relationship maintenance behaviour (FBSOCAP) – presumably responsible for the lack of FBSOCAP in Model 5 – we estimated another model (Model 6, henceforward) in which we substituted FBSOCAP for SOCAP. Model 6 had lower quality as compared to Model 5 and the parameter at FBSOCAP was significant at 0.1 level. Nevertheless, one can assume that the increase in the value of FBSOCAP leads to increase in the probability of seeking the advice on a credit choice. Similarly, we substituted objective debt literacy (ODL) for subjective debt literacy (SDL), however, the parameter at ODL turned out to be insignificant which confirms the finding brought earlier by Goodman-Kruskal  $\tau$  and suggesting that the objective debt literacy is not significantly related to seeking advice about a credit choice. Likewise, the introduction of control variables did not improve the model quality. This pertains also to risk attitude and place of residence which had significant  $\tau$  Goodman-Kruskal association coefficients with seeking advice about a credit choice. Presumably, this results from strong ties between risk attitude – and residence as well – and other independent variables having significant parameters. To sum up, the regression models with seeking advice on a credit choice (DCHOICE) as the dependent variable do not support H1a, however they support H2a and H4.

The logistic regression model with debt counselling as the dependent variable, estimated using 'from general to specific' selection method (Model 7, henceforth), comprised

the following three independent variables: individual social capital, repayment problems and financial situation. Both,  $R^2$  Nagelkerke and Count  $R^2$ , were much higher than in Model 5 (that is, the starting model with seeking advice about a credit choice as the dependent variable), and reached 0.478 and Count  $R^2 = 85.4\%$ , respectively.

In light of our results, the propensity to seek debt counselling is higher for respondents having greater social capital resources embedded in personal networks (SOCAP), reporting more repayment problems (REPROB), and worse financial situation in their households (FINSTAT). The probability of seeking debt counselling, estimated on the basis of Model 7 for respondents with minimum SOCAP (=0), free of repayment problems (REPROB = 0), and the best possible financial situation (FINSTAT = 5) was a mere 0.0349. On the other hand, the probability estimated for respondents with maximum SOCAP (=27), the highest index of repayment problems (REPROB = 3) and the worst possible financial situation (FINSTAT = 1) was 0.9927.

Interestingly, neither of the two measures of debt literacy – ODL and SDL – was among independent variables significantly related to debt counselling in Model 7. Therefore, in another step this starting model was augmented with subjective debt literacy (SDL) and the relationship maintenance behaviour (FBSOCAP) was substituted for individual social capital (Model 8). The parameters at each of these two additional variables turned out to be significant on the 0.1 level for SDL and 0.05 for FBSOCAP suggesting that debt literacy and the relationship maintenance behaviour have been significantly and positively linked to debt counselling. Similarly as in the case of seeking advice about a credit choice, debt counselling models showed that standard sociodemographic characteristics (age, education, residence, and gender) were insignificant in explaining the propensity to seek debt advice. Such results confirm the conclusion – formulated preliminary on the basis of the analysis of associations (subsection 3.1) – that H1b and H2b must be rejected. On the other hand, the results bring support for H4.

The propensity to seek advice on legal aspects of a credit contractual agreement (DLEGAL – Models 9 and 10) is higher for respondents having greater social capital resources embedded in personal networks (SOCAP), reporting more repayment problems (REPROB), and worse financial situation in their households (FINSTAT), reporting higher educational attainment (EDUCAT), and displaying higher level of subjective debt literacy (SDL; though the parameter at SDL turned out to be significant at 0.1 level and, hence, the role of this variable is less considerable). This confirms what was found in the analysis of associations, namely that our data support H2c and, partly, H4 (partly, because only in terms of the individual social capital that can be mobilised). On the other hand, H1c is not supported by the empirical results.

Subjective debt literacy (SDL), social capital resources embedded in personal networks (SOCAP), repayment problems (REPROB) and trust in lending institutions (TRUST) have positive effect on the propensity to seek advice on exchanging the existing credit for a new one (DCHANGE – Model 11). Financial situation in respondents' households (FINSTAT) influences the propensity negatively. In the light of these findings, H1d must be rejected, while H2d is confirmed. H4 gained partial confirmation, namely exclusively in terms of the individual social capital that can be mobilised from personal networks.

Interestingly, the estimated ordered dependent variable logistic regression models indicate also large number of factors determining the variability of subjective debt literacy. Ten out of eleven exogenous variables examined in the models (that is, in Model 12 and



Model 13) have positive and significant (at least at 0.1 level) impact on the variability of subjective debt literacy (Table 6).

We also estimated the models predicting about how many themes a respondent sought advice (see Table 7 for details). This construct was measured in our study with the variable DAS having the theoretical range of values from 0 (respondent sought no advice) to 4 (respondent sought advice on all four themes indicated in the questionnaire – about a credit choice, about legal aspects of a credit agreement, about repayment problems, and about changing the existing credit for another one). Model 14 with DAS as the dependent variable, estimated using ‘from general to specific’ approach, composed of four independent variables – subjective debt literacy, individual social capital, repayment problems and financial situation – significantly related to DAS. The results of Model 14 imply that more financially confident individuals, having greater social capital resources that are mobilisable, greater repayment problems and worse financial situation are more inclined to seek any debt advice. Nagelkerke  $R^2$  of Model 14 was 0.478.

As in the analyses regarding four isolated debt advice themes, the starting model with DAS as the dependent variable (Model 14) was further modified to obtain models with other compositions of independent variables. The relationship maintenance behaviour (FBSOCAP) (with parameter significant at 0.1) was introduced to Model 15 instead of individual social capital (SOCAP). Among other independent variables tested in these

**Table 6.** Parameter estimates for ordered dependent variable logistic regression models of subjective debt literacy (SDL).

Variable	Model 12	Model 13
SOCAP	0.049***	
FSOCAP		0.063**
REPROB		0.125**
ODL	0.294***	0.279***
FINSTAT	0.222***	0.292***
RISKAT	0.045**	0.064***
TRUST	0.158***	0.165***
AGE	0.010**	
EDUCAT	0.047*	0.074***
GENDER		0.333***
$\gamma_1$	-1.006**	-0.561
$\gamma_2$	0.650	1.091***
$\gamma_3$	1.954***	2.387***
$\gamma_4$	2.539***	2.966***
$\gamma_5$	3.931***	4.331***
$\gamma_6$	5.361***	5.735***
Likelihood ratio test: Chi-square (number of variables)	437.93***	407.49***
Max VIF	1.116	1.137

Note: This table presents the parameter estimates for ordered dependent variable logistic regression models of subjective debt literacy (SDL). The exogenous variables used in Model 12 were selected using ‘from general to specific’ method. Model 13, with slightly worse properties compared to Model 12 (lower Chi-square statistic), extends the knowledge of the investigated phenomenon.

All models were estimated with maximum likelihood method and with robust standard errors (QML) on the sample of  $N = 1,055$  observations. Detailed definitions of the variables are summarised in Table 2.

$\gamma_k$  – estimated values of thresholds. If estimated for an  $i$ -th respondent the value of  $FSDL_i \leq \gamma_1$ , then subjective debt literacy of this respondent takes 1 in 7-point Likert scale, which means the lowest value; if  $\gamma_1 < FSDL_i \leq \gamma_2$ , then subjective debt literacy of this respondent takes 2, and so on.

VIF – variance inflation factors.

\*Statistically significant at  $p < 0.1$ .

\*\*Statistically significant at  $p < 0.05$ .

\*\*\*Statistically significant at  $p < 0.01$ .

**Table 7.** Parameter estimates for ordered dependent variable logistic regression models of the number of advice themes a respondent sought (DAS).

Variable	Model 14	Model 15
SOCAP	0.045***	–
FBSOCAP	–	0.046*
SDL	0.145***	0.182***
REPROB	0.720***	0.759***
FINSTAT	–0.274***	–0.232***
EDUCAT	–	0.055**
Y <sub>0</sub>	0.319	0.975**
Y <sub>1</sub>	1.660***	2.292***
Y <sub>2</sub>	3.125***	3.729***
Y <sub>3</sub>	3.914***	4.502***
R <sup>2</sup> Nagelkerke	0.210	0.185
Likelihood ratio test: Chi-square (number of variables)	399,4***	370,8***
Max VIF	1,171	1,183

Note: This table presents the parameter estimates for ordered dependent variable logistic regression models of the number of advice themes a respondent sought (DAS).

The exogenous variables used in Model 14 were selected using ‘from general to specific’ method. Model 15, with slightly worse properties compared to Model 14 (lower Chi-square statistic), extends the knowledge of the investigated phenomenon.

Note: DAS = 0 means that the respondent did not seek debt advice at all; DAS = 1 means that the respondent sought advice on one theme; DAS = 2 means that the respondent sought advice on two themes; and so on.

All models were estimated with maximum likelihood method and with robust standard errors (QML) on the sample of  $N = 1,055$  observations. Detailed definitions of the variables are summarised in [Table 2](#).

VIF – variance inflation factors.

\*Statistically significant at  $p < 0.1$ .

\*\*Statistically significant at  $p < 0.05$ .

\*\*\*Statistically significant at  $p < 0.01$ .

augmented models only educational attainment turned out to be significantly (at 0.1 level) and positively associated with DAS (Model 15). To recap, such results confirm what was primarily known from the analysis of associations, namely that our empirical models support H2e; on the other hand, the models do not support H1e.

Model 14 allows for an in-depth analysis of the propensity to seek advice about more than one debt theme (Kowerski, 2008). The propensity can be measured as the probability that DAS takes one of the five possible values (from 0 through 4). [Table 8](#) summarises results of the analysis.

We checked our models for the eventuality of multicollinearity phenomenon. The results show that the models are free of this problem. Maximal observed value of Variance Inflation Factor (VIF) was 4.687 (Model 4) when values  $> 10.0$  indicate a multicollinearity problem.

## 5. Discussion and conclusions

The answer to the first research question of this article – whether professional debt advice has a potential to compensate the shortcomings in consumers’ debt literacy – is negative. This first essential finding that emerges from our study – the insignificance of actual debt literacy in explaining advice-seeking behaviour – is both surprising and pessimistic. Surprising, because the grounds for expecting a significant relationship between these two items seem to be strong enough: not only less literate consumers, but also the most sophisticated ones, may have strong – though different – incentives to seek advice, as discussed in the literature review section of this article. Pessimistic, because this finding

**Table 8.** Probabilities of seeking advice on different number of debt themes depending on respondent's characteristics.

Respondent category	Respondent's characteristics	Probability of seeking advice on different number of debt themes				
		$P(DAS = 0)$	$P(DAS = 1)$	$P(DAS = 2)$	$P(DAS = 3)$	$P(DAS = 4)$
Respondent with the lowest values of exogenous variables	The lowest individual social resources (SOCAP = 0) The lowest confidence in debt-related knowledge (SDL = 1) No repayment problems (REPROB = 0) Best financial situation (FINSTAT = 5)	0.824	0.123	0.040	0.007	0.006
Respondent with the arithmetic means of exogenous variables	Individual social resources at the level of sample average (SOCAP = 10.33) Confidence in debt-related knowledge at the level of sample average (SDL = 4.59) Repayment problems at the level of sample average (REPROB = 0.61) Financial situation at the level of sample average (FINSTAT = 3.28)	0.414	0.316	0.191	0.041	0.037
Respondent with the highest values of exogenous variables	The highest individual social resources (SOCAP = 27) The highest confidence in debt-related knowledge (SDL = 7) The greatest repayment problems (REPROB = 3) Worst financial situation (FINSTAT = 1)	0.022	0.057	0.191	0.179	0.552

Note: This table presents the distribution of probabilities of seeking advice on different number of debt themes which were calculated using Model 14 (the estimates of Model 14 are presented in Table 7) for three hypothetical respondents: (a) with the lowest values of exogenous variables, (b) with the arithmetic means of exogenous variables, (c) with the highest values of exogenous variables.

Probabilities were calculated with the formula 10.

may mean that the expected effect of advice that compensates for the shortcomings in financial literacy does not exist, at least in the sample surveyed in our study.

There are a number of alternative explanations for this result. Firstly, debt advice as a general construct is still a little-studied issue. Our results can, therefore, suggest a specificity of debt facets as an object of professional advice. Although debt falls into a broad set of financial matters, its peculiarity and dissimilarity from other financial issues was previously indicated by some authors (Collins, 2012; Van Ooijen & van Rooij, 2014). Secondly, perhaps the insignificance of debt literacy in models explaining advice-seeking may be attributable to the specificity of advice-seeking as a form of financial behaviour. On the one hand, like every behaviour, it is a form of action. However, unlike other financial behaviours (saving, investing, planning), which manifest themselves in the *application* of a knowledge, advice-seeking is a means of financial knowledge *acquisition*.

Like the authors of previous studies, we have focused on selected thematic aspects of debt advice, such as advice about a loan or a mortgage choice, and debt counselling (and two more). Those previous studies demonstrated that debt advice is not a homogenous construct. The isolation of particular dimensions of debt advice – such as mentioned credit choice or debt counselling – showed that seeking expert advice about different debt issues can be driven by different factors. We confirmed the observation with our regression models. This opens the field for more advanced research on different dimensions of debt advice not covered by this article.

To a degree, our findings are also positive. They did not bring support for the claim that the individuals who need professional financial advice the most – i.e. the least literate ones, and especially those among them who have run into financial trouble – refrain from asking for advice more often than others. Although the actual debt literacy turned out to be insignificant in our regression models, we established that the rate of uptake of debt advice increases with repayment problems and worsening financial situation of the respondent's household. In this respect, our findings are similar to those obtained by Collins (2012), who found that difficulty paying bills is strongly related to propensity to seek debt counselling and less significantly to the propensity to seek advice about a credit choice. This might suggest that, eventually, expert advice is perceived as an effective means of alleviating financial burdens.

Perhaps the most important finding which stems from our study is that subjective debt literacy – or confidence in debt-related knowledge – may be more relevant than actual debt literacy in explaining consumers' debt advice-seeking behaviour. In spite of the positive and significant correlation between objective and subjective debt literacy established in our study, we confirmed that the latter one – i.e. self-reported literacy – is worth being considered as a separate financial literacy measure which can have an incremental explanatory and exploratory content compared to objective literacy. This is important because it follows that research using only actual financial literacy to explain financial behaviour may underestimate its impact.

Another crucial finding brought out by our study refers to signs of the relationship between subjective debt literacy and advice-seeking behaviour. We found that respondents more confident in their debt-related knowledge are more likely to seek advice about all four themes examined in our study. This may be perceived as a surprising result given that we studied specific behaviour, i.e. the propensity to ask for advice, which suggests that it would be reasonable to expect that those who perceive themselves more knowledgeable will be less inclined to ask others for advice. A multitude of possible explanations can be given regarding this result. Firstly, the finding can be specific to the field of household finance, as argued by Parker et al. (2012). Similar evidence from other domains is scanty.

Secondly, perhaps more financially confident individuals are at the same time persons more confident in general, more open and making new acquaintances more easily. This may be an important predisposition because asking for advice requires an in-person relationship. In this respect, our choice to recruit sample participants from Facebook users (instead of having a nationally representative sample) turned out to be a paying-off strategy as Facebook-related variables shed some additional light on the linkages among the variables we studied. We noticed that confidence in debt-related knowledge is significantly correlated with the number of persons followed on Facebook. The observation can be interpreted variously. For instance, this finding might mean that more confident individuals are socialised to a higher extent. Perhaps they also have a particularly high ease of engaging in relationships, including formal ones. Asking for expert help – which can be perceived as a challenge or an asymmetric confrontation by less confident individuals – does not burden confident persons emotionally, thus reducing the overall costs of being involved in an advice relationship. A psychological study, putting the issues in a new perspective of personality profiles, would be welcomed in this respect.

Thirdly, the effect of advice-seeking being positively linked to confidence in debt-related knowledge may also reflect the importance of risk attitudes in explaining financial behaviour. Like other researchers (Hanna, 2011; Robb et al., 2012), we found that increased risk acceptance translates into more propensity to ask for advice, which is still regarded as a puzzling phenomenon. At the same time, we found that individuals more confident in debt-related knowledge are less risk averse. Some authors point to the similarity between confidence and self-efficacy and indicate that the latter facilitates taking actions through 'reducing hesitation and increasing risk taking' (Parker et al., 2012, p. 7). These complex relations call for a scrutiny and convincing explanation.

It is important to note that the applied method confirms that our results on the link between subjective debt literacy and debt advice-seeking are robust with respect to potential endogeneity of the literacy which may arise with receipt of the advice. We showed that our estimations do not suffer from reversed causality. The estimations imply that our results can be interpreted not only in terms of signs of relationships, but also in terms of directions of causality in these relationships. In short, we proved that in our sample the causality goes from subjective debt literacy to advice-seeking behaviour, and not the other way round.

Our study brought interesting results regarding the role of resources embedded in an individual's social networks for debt advice-seeking behaviour. Regardless of the advice theme used as the dependent variable, our models showed the statistical significance of SOCAP – and, to a lesser degree, FBSOCAP. The second research question of this article asked whether individual social networks substitute for the professional debt advice or the networks nudge consumers to seek the advice. Our findings suggest that the latter is true. In all applied models SOCAP turned out to be positively linked to advice-seeking behaviour. At a glance, such findings are curious and surprising, because it seems reasonable to expect that an individual having better access to resources – also in terms of the opportunity to receive informal advice due to her network – will be less inclined to ask for expert (i.e. formal) advice. In fact, the findings are not that unusual as one might believe – the truth reflected in our hypothesis H4. Consistent with the hypothesis, we found that consumers with more resources accumulated in their personal networks – including the resources of knowledge and skills that can serve as an informal advice foundation – are more likely to seek professional advice. On the most general level, such finding means that more embedded or socialised persons – in terms of the accessible resources of social capital – tend to ask for professional debt advice more often than less socialised ones. Such results are convergent with the 'Matthew effect' explaining why rich get richer. Those who are successful and accumulated certain amount of social capital (ties and resources) are most likely to be offered the new opportunities.

Assuming that advice-seeking is a healthy consumer behaviour, our results show that individual social capital may promote desired financial actions. Although our findings regarding the role of resources embedded in personal networks for debt advice-seeking are preliminary and, as such, should be considered with caution, they confirm observations of former authors who showed that social capital might have a positive effect on financial choices and actions. For instance, Dufhues, Buchenrieder, Quoc, and Munkung (2011) showed that individual social capital may have a positive effect on loan repayment while Newman, Tarp, and Van Den Broeck (2014) established a positive role of such

capital in facilitating savings. Our results are also consistent with the findings of Song and Chang (2012) in the health-related area, who showed that two indicators of social capital applied by them are positively related to the frequency of health information-seeking.

We interpret our findings on the link between resources made available to individuals through their social networks and debt advice-seeking behaviour as the indication of a role of social networks in developing consumers' metaknowledge, that is – their knowledge on what they actually know and what they don't know, as well as on what is the knowledge of their network's members. This kind of self-awareness and 'ambient awareness' (Leonardi, 2015) may be a deciding factor that removes hesitation and encourages to ask for a professional advice – both due to realisation of one's knowledge deficits and because of discovering that one's network members took professional and beneficial advice previously. Such interpretation is consistent with findings of Leonardi (2015) who showed that social networking improves the accuracy of human metaknowledge at work. This explanation seems also to be consistent with the other key finding of our study, i.e. the positive relationship between subjective debt literacy and debt advice-seeking behaviour. Both factors – the resources embedded in social network and the self-perceived debt literacy – may be important enablers of taking actions through reducing reluctance. Combination of these two factors may be particularly forceful. Nevertheless, there is still room for future researchers to study the link between individual social capital and debt advice-seeking behaviour, and to test various explanations of the link, especially because there is a considerable diversity of social capital measures used in the extant literature.

Our findings have several relevant implications for policymakers. First, the findings imply that, for a reason, those who are the least literate in debt-related domain do not close the literacy gap by reaching out for professional advice. Perhaps this is due to some factors related to the supply-side of the market for expert advice which were not studied in this article. For instance, Debbich (2015) shows that the compensation structure of the professional advisors may prevent them from delivering the advice to those who need the advice the most due to shortcomings in their financial literacy. Calcagno and Monticone (2015) as well as Bucher-Koenen and Bucher (2015) report similar results. Advisors provide the relevant information only to those who are more financially literate or who appear to be more literate. If this is the case, then there is still considerable room for improvement on the grounds of regulations concerning the market for professional financial advice. Perhaps, the recent introduction of MiFID II rules will trigger such improvement, however, this will be reflected in relevant surveys in a couple of years from now. Till then, the responsible authorities should closely monitor the market on a regular basis to swiftly react to deviations from assumed goals.

Decision-makers have to consider and evaluate other supporting mechanisms for the least debt literate consumers if professional debt advice does not work as a substitute for the literacy. Our findings suggest a promising direction which, however, requires further extensive, scrupulous and critical tests. We found that individuals who are more confident in their debt-related knowledge are more likely to reach for each type of professional debt advice: about a credit choice, on the legal aspects of a credit agreement, on changing a credit into a new one, and finally – for debt counselling. This evidence suggests that policy programmes should be extended and ought to include not only the mechanisms aimed at ameliorating actual financial literacy, but also mechanisms

(perhaps psychological, for instance) supporting such consumer characteristics as confidence, self-efficacy, or self-assuredness.

However, most of all, our findings imply that propensity to seek debt advice may depend less heavily on cognitive factors (actual knowledge) than on psychological dispositions which determine self-esteem and self-efficacy (that is, constructs close to self-confidence), as well as the magnitude and strength of social networks an individual builds. As a result, the promotion of healthy financial behaviours – including seeking an expert advice – should account for the psychological traits of supported groups. In light of our findings, consumers characterised by low levels of financial confidence and small or modest social networks may be particularly likely to refrain from asking for professional debt advice. If participating in financial education programmes, such individuals should be approached in a customised way that accounts for their psychological profile, especially when they are placed at a disadvantage because of larger-than-average shortcomings in actual financial literacy.

As usual, there are a number of limitations of our study. To achieve better alignment with debt themes of professional advice, we decided to use a debt literacy test instead of a test measuring general financial literacy. Such a debt-to-debt approach was previously used only by Disney et al. (2015), but solely with respect to debt counselling. Additionally, our measure of debt advice-seeking included four themes of expert advice the respondents could be interested in. We cannot rule out that both the vectors and the strengths of key relationships (e.g. between financial literacy and demand for financial advice) are sensitive to designs of adopted measures of literacy – an issue which was addressed by some authors (Gentile et al., 2016). Further, despite the distribution of traits in our sample, which resembles the distribution in representative samples, Facebook users might constitute a social group that is different from society as a whole in terms of the relations among variables studied in this article.

## Notes

1. The same procedure has been applied to the objective debt literacy (ODL). However, given the insignificance of the objective debt literacy in our regression models – demonstrated in the section Results of this article – all specifications in the current section are given in terms of the subjective debt literacy which turned out to be significant in these models.
2. We have also estimated the following four hybrid simultaneous two-equation models: DCHOICE and ODL, DCOUNSEL and ODL, DLEGAL and ODL, DCHANGE and ODL. The results showed the absence of simultaneity between ODL and each of these four debt advice-seeking measures, as suggested preliminarily by the analysis of associations (subsection 3.1). For this reason, we do not report these results here. They can be obtained from the authors upon request.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Funding

This work was supported by Ministry of Science and Higher Education, Republic of Poland [grant contract no. 0057/DLG/2016/10 under the programme 'Dialogue' (within project entitled 'Debt Watch')].

## Note on contributors

**Andrzej Cwynar**, Ph.D. is an Associate Professor at the University of Economics and Innovation (UEI) in Lublin (Poland). Former dean of Department of Economics at the UEI, founder and director of the Institute for Financial Research and Analyses (2010-2013), and editor-in-chief of the scientific quarterly 'e-Finanse' (2004-2013). The author and co-author of several books and over 100 articles devoted mainly to financial issues. His main field of interest is corporate finance and financial management as well as financial literacy with special emphasis on debt issues.

**Wiktor Cwynar**, Ph.D. is an Assistant Professor at the University of Economics and Innovation (UEI) in Lublin (Poland). CEO of spin-off Splentum. During his professional career, among others, he held the following positions: Head of Group Controlling at Grupa Azoty S.A., one of the biggest companies listed on the Warsaw Stock Exchange, Rector of Wyższa Szkoła Biznesu - National Louis University in Nowy Sącz, and Partner at Polish Investment Fund. His main field of scientific interest is financial literacy, debt literacy, financial education and value based management (VBM). He is the author of many scientific articles on finance and VBM.

**Mieczysław Kowerski**, Ph.D. is an Associate Professor at the State School of Higher Education in Zamość (Poland). Former vice rector of the University of Management and Administration in Zamość (Poland). Editor-in-chief of the scientific quarterly Barometr Regionalny. Analizy i Prognozy (since 2008). The author and co-author of over 100 articles devoted mainly to finance and regional development issues. His current main field of interest is financial econometrics and dividend policy.

**Kamil Filipek**, Ph.D., sociologist, Assistant Professor at Maria Curie-Skłodowska University (UMCS) in Lublin (Poland). His areas of interest include social media, social networks and social capital. More recently, he focuses on AI and machine learning methods in social science.

**Przemysław Szuba**, M.A., Exacto, Poland - graduate of sociology and journalism at the John Paul II Catholic University of Lublin (KUL), currently deputy manager of the research and strategic analysis department of Exacto sp. z o.o. Author of several dozen research reports and scientific articles on crisis management. In his professional work, he focuses mainly on the analysis of statistical data and coordination of marketing research.

## ORCID

Andrzej Cwynar  <http://orcid.org/0000-0003-2702-0397>

Wiktor Cwynar  <http://orcid.org/0000-0001-6890-5189>

Mieczysław Kowerski  <http://orcid.org/0000-0002-2147-2037>

Kamil Filipek  <http://orcid.org/0000-0003-0466-9388>

Przemysław Szuba  <http://orcid.org/0000-0002-7533-7818>

## References

- Allgood, S., & Walstad, W. B. (2016). The effects of perceived and actual financial literacy on financial behaviors. *Economic Inquiry*, 54, 675–697.
- Anderson, A., Baker, F., & Robinson, D. T. (2015). *Precautionary savings, retirement planning and misperceptions of financial literacy* (NBER Working Paper No. 121356). Cambridge, Mass.: National Bureau of Economic Research.
- Bucher-Koenen, T., & Bucher, J. (2015). *Do seemingly smarter consumers get better advice?* (MEA Discussion Papers 01-2015). Munich: Munich Center for Economics of Aging.
- Calcagno, R., & Monticone, C. (2015). Financial literacy and the demand for financial advice. *Journal of Banking and Finance*, 50, 363–380.
- Chang, M. L. (2005). With a little help from my friends (and my financial planner). *Social Forces*, 83(4), 1469–1497. doi:10.1353/sof.2005.0061



- Cole, S., & Shastry, G. K. (2009). *Smart money: The effect of education, cognitive ability and financial literacy on financial market participation* (HBS Working Paper No. 09-071). Cambridge, Mass.: Harvard Business School.
- Collins, J. M. (2012). Financial advice: A substitute for financial literacy? *Financial Services Review*, 21(4), 307–322.
- Cramer, J. S. (1999). Predictive performance of the binary logit model in unbalanced samples. *The Statistician*, 48(1), 85–94.
- Cwynar, A., Cwynar, W., & Wais, K. (2018). Debt literacy and debt literacy self-assessment. The case of Poland. *Journal of Consumer Affairs*, 53(1), 24–57. doi:10.1111/joca.12190
- Cwynar, A., Cwynar, W., Wais, K., & Parda, R. (2017). Personal loan companies in Poland: Does empirical evidence justify regulatory transition? *Prague Economic Papers*, 26(4), 377–396.
- Czapiński, J., & Panek, T. (2015). Social diagnosis 2015. Objective and subjective quality of life in Poland. *Contemporary Economics*, 9(4), 1–538.
- Debbich, M. (2015). *Why financial advice cannot substitute for financial literacy?* (Working Paper no. 534). Paris: Banque de France.
- Disney, R., & Gathergood, J. (2011). *Financial literacy and indebtedness: New evidence for UK consumers* (Discussion Papers 11/05). Nottingham: University of Nottingham. Retrieved from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1851343](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1851343) doi:10.2139/ssrn.1851343
- Disney, R., Gathergood, J., & Weber, J. (2015). Credit counseling: A substitute for consumer financial literacy? *Journal of Pension Economics & Finance*, 14(4), 466–491.
- Dufhues, T., Buchenrieder, G., Quoc, H. D., & Munkung, N. (2011). Social capital and loan repayment performance in Southeast Asia. *Journal of Socio-Economics*, 40(5), 679–691.
- Duflo, E., & Saez, E. (2003). The role of information and social interactions in retirement plan decisions: Evidence from a randomized experiment. *Quarterly Journal of Economics*, 118(3), 815–842.
- Ellison, N. B., Vitak, J., Gray, R., & Lampe, C. (2014). Cultivating social resources on social network sites: Facebook relationship maintenance behaviors and their role in social capital processes. *Journal of Computer-Mediated Communication*, 19(4), 855–870. doi:10.1111/jcc4.12078
- Feild, L., Pruchno, R. A., Bewley, J., Lemay, E. P., & Levinsky, N. G. (2006). Using probability vs. nonprobability sampling to identify hard-to-access participants for health-related research. *Journal of Aging and Health*, 18, 565–583.
- French, D., & McKillop, D. (2014). *Financial literacy and over-indebtedness in low-income households* (Centre for Responsible Banking & Finance Working Paper No. 14-012). St Andrews: University of St Andrews, School of Management.
- Gaag, M. v. d., & Snijders, T. A. B. (2005). The resource generator: Social capital quantification with concrete items. *Social Networks*, 27(1), 1–29. doi:10.1016/j.socnet.2004.10.001
- Gentile, M., Linciano, N., & Soccorso, P. (2016). *Financial advice seeking, financial knowledge and over-confidence. Evidence from the Italian market* (CONSOB Working Paper). Rome: Commissione Nazionale Per Le Società E La Borsa.
- Gerardi, K., Goette, L., & Meier, S. (2013). Numerical ability predicts mortgage default. *Proceedings of the National Academy of Sciences*, 110(28), 11267–11271. doi:10.1073/pnas.1220568110
- Greene, W. H. (2003). *Econometric analysis*. New York: Prentice Hall.
- Hanna, S. D. (2011). The demand for financial planning services. *Journal of Personal Finance*, 10(1), 36–62.
- Hays, R. D., Liu, H., & Kapteyn, A. (2015). Use of Internet panels to conduct surveys. *Behavior Research Methods*, 47(3), 685–690.
- Heckman, J. J. (1978). Dummy endogenous variables in a simultaneous equation system. *Econometrica*, 46(4), 931–959.
- Hong, H., Kubik, J. D., & Stein, J. C. (2004). Social interaction and stock-market participation. *Journal of Finance*, 59(1), 137–163.
- Hung, A. A., Parker, A. M., & Yoong, J. K. (2009). *Defining and measuring financial literacy* (RAND Working Paper No. WR-798). Retrieved from [https://www.rand.org/content/dam/rand/pubs/working\\_papers/2009/RAND\\_WR708.pdf](https://www.rand.org/content/dam/rand/pubs/working_papers/2009/RAND_WR708.pdf)
- Hung, A. A., & Yoong, J. K. (2010). *Asking for help: Survey and experimental evidence on financial advice and behavior change* (RAND Working Paper no. WR-714-1). Retrieved from [https://www.rand.org/content/dam/rand/pubs/working\\_papers/2010/RAND\\_WR714-1.pdf](https://www.rand.org/content/dam/rand/pubs/working_papers/2010/RAND_WR714-1.pdf)

- Jappelli, T., & Padula, M. (2013). Investment in financial literacy and saving decisions. *Journal of Banking and Finance*, 37(8), 2779–2792.
- Kaiser, T., & Menkhoff, L. (2016). *Does financial education impact financial literacy and financial behavior, and if so, when?* (DIW Discussion Papers No. 1562). Berlin: Deutsches Institut für Wirtschaftsforschung.
- Karaa, I. E., & Kuğu, T. D. (2016). Determining advanced and basic financial literacy relations and overconfidence, and informative social media association of university students in Turkey. *Kuram ve Uygulamada Eğitim Bilimleri*, 16(6), 1865–1891. doi:10.12738/estp.2016.6.0415
- Klapper, L. F., Lusardi, A., & Panos, G. A. (2012). *Financial literacy and the financial crisis* (NBER Working Paper No. 17930). Cambridge, Mass.: National Bureau of Economic Research.
- Klapper, L., Lusardi, A., & van Oudheusden, P. (2015). *Financial literacy around the world: Insights from the standard & poor's ratings services global financial literacy survey*. Global financial literacy Excellence Center. Washington, DC: The George Washington University. Retrieved from [http://gflec.org/wp-content/uploads/2015/11/Finlit\\_paper\\_16\\_F2\\_singles.pdf](http://gflec.org/wp-content/uploads/2015/11/Finlit_paper_16_F2_singles.pdf)
- Kowerski, M. (2008). Wartość informacyjna odpowiedzi 'bez zmian' w badaniach nastrojów gospodarczych [informational value of the response 'no change' in studies of economic sentiment]. *Barometr Regionalny. Analizy i Prognozy*, 4(14), 47–62.
- Leonardi, P. M. (2015). Ambient awareness and knowledge acquisition: Using social media to learn 'who know what' and 'who knows whom'. *MIS Quarterly*, 39(4), 747–762.
- Lin, N. (1999). Building a network theory of social capital. *Connections*, 22(1), 28–51. doi:10.1108/14691930410550381
- Lin, N. (2001). *Social capital. A theory of social structure and action*. Cambridge, Malden: Cambridge University Press. doi:10.1007/s13398-014-0173-7.2
- Lusardi, A., & Tufano, P. (2015). Debt literacy, financial experiences, and overindebtedness. *Journal of Pension Economics and Finance*, 14(4), 332–368. doi:10.1017/S1474747215000232
- Maddala, G. S. (2006). *Ekonometria [Econometrics]*. Warsaw: Wydawnictwo Naukowe PWN.
- Martinsson, J., Dahlberg, S., & Lundmark, S. O. (2013, May). Is accuracy only for probability samples? Comparing probability and nonprobability samples in a country with almost full Internet coverage. In *68th Annual Conference of the American Association for Public Opinion Research*. Boston, Mass.: American Association for Public Opinion Research.
- Megapanel PBI/Gemius. (2015). Retrieved from [https://www.gemius.pl/files/PL/infografika\\_17\\_02/2015\\_10\\_FacebookTwitter.png](https://www.gemius.pl/files/PL/infografika_17_02/2015_10_FacebookTwitter.png)
- Miller, M., Reichelstein, J., Salas, C., & Zia, B. (2015). Can you help someone become financially capable? A meta-analysis of the literature. *World Bank Research Observer*, 30(2), 220–246.
- Moschis, G. (1987). *Consumer socialization*. Lexington: Lexington Books.
- Newman, C., Tarp, F., & Van Den Broeck, K. (2014). Social capital, network effects, and savings in rural Vietnam. *Review of Income and Wealth*, 60(1), 79–99.
- Parker, A. M., Bruine de Bruin, W., Yoong, J., & Willis, R. (2012). Inappropriate confidence and retirement planning: Four studies with a national sample. *Journal of Behavioral Decision Making*, 25(4), 382–389.
- Porto, N., & Xiao, J. J. (2016). Financial literacy overconfidence and financial advice seeking. *Journal of Financial Service Professionals*, 70(4), 78–88.
- Rivers, D. (2006). Sample matching: Representative sampling from Internet panels. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/20804407>
- Robb, C. A., Babiarz, P., & Woodyard, A. (2012). The demand for financial professionals' advice: The role of financial knowledge, satisfaction, and confidence. *Financial Services Review*, 21(4), 291–305.
- Sohn, S.-H., Joo, S.-H., Grable, J. E., Lee, S., & Minjeung, K. (2012). Adolescents' financial literacy: The role of financial socialization agents, financial experiences, and money attitudes in shaping financial literacy among South Korean youth. *Journal of Adolescence*, 35(4), 969–980.
- Song, L., & Chang, T.-Y. (2012). Do resources of network members help in help seeking? Social capital and health information search. *Social Networks*, 34(4), 658–669.
- Statistics Poland. (2018). *Demographic yearbook of Poland*. Warsaw: Central Statistical Office.
- Stigler, G. J. (1961). The economics of information. *Journal of Political Economy*, 69(3), 213–225.

- Stolper, O. A., & Walter, A. (2017). Financial literacy, financial advice, and financial behavior. *Journal of Business Economics*, 87(5), 581–643.
- Van Ooijen, R., & van Rooij, M. (2014). *Mortgage risk, debt literacy and financial advice* (DNB Working Paper No. 449). Amsterdam: De Nederlandsche Bank.
- Xia, T., Wang, Z., & Li, K. (2014). Financial literacy overconfidence and stock market participation. *Social Indicators Research*, 119(3), 1233–1245.
- Yeager, D. S., Krosnick, J. A., Chang, L., Javitz, H. S., Levendusky, M. S., Simpson, A., & Wang, R. (2011). Comparing the accuracy of RDD telephone surveys and Internet surveys conducted with probability and non-probability samples. *Public Opinion Quarterly*, 75(4), 709–747.

## Appendix. The Lusardi and Tufano (2015) test of debt literacy

Question 1: Suppose you owe \$1,000 on your credit card and the interest rate you are charged is 20% per year compounded annually. If you didn't pay anything off, at this interest rate, how many years would it take for the amount you owe to double?

Answers:

- i 2 years,
- ii Less than 5 years,
- iii 5 –10 years,
- iv More than 10 years,
- v Do not know,
- vi Prefer not to answer.

Question 2: You owe \$3,000 on your credit card. You pay a minimum payment of \$30 each month. At an Annual Percentage Rate of 12% (or 1% per month), how many years would it take to eliminate your credit card debt if you made no additional new charges?

Answers:

- (i) Less than 5 years,
- (ii) Between 5 and 10 years,
- (iii) (iii) Between 10 and 15 years,
- (iv) (iv) Never, you will continue to be in debt,
- (v) Do not know,
- (vi) Prefer not to answer.

Question 3: You purchase an appliance which costs \$1,000. To pay for this appliance, you are given the following two options: (a) Pay 12 monthly instalments of \$100 each; (b) Borrow at a 20% annual interest rate and pay back \$1,200 a year from now. Which is the more advantageous offer?

Answers:

- (i) Option (a),
- (ii) Option (b),
- (iii) They are the same,
- (iv) Do not know,
- (v) Prefer not to answer.