The Impact of Consumer Knowledge Bias on Narrow-Scope Trust, Broad-Scope Trust, and Relationship Satisfaction

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ABSTRACT

This study investigates how consumer knowledge bias - defined as knowledge over/underconfidence (O/U) - influences two types of trust (broad-scope trust and narrow-scope trust) and consumer relationship satisfaction. Based on a survey comprising 756 mutual fund investors, the contribution of this study to the marketing literature is twofold. First, taking a marketing relationship approach this study suggests and demonstrates that knowledge O/U positively influences relationship satisfaction and narrow-scope trust such that the more knowledge O/U a customer becomes, the higher/lower the level of relationship satisfaction and narrow-scope trust. Second, it is proposed and shown that broad-scope trust negatively moderates the relationship between knowledge O/U and relationship satisfaction such that knowledge O/U has a greater positive/negative effect on relationship satisfaction when broad-scope trust is low compared to high. Notably, the study findings strongly suggest that marketing managers should carry out their relationship satisfaction and trust improvement efforts relative to the combination of customers' subjective and objective knowledge.

Keywords: Knowledge over/underconfidence; cognitive bias; broad-scope trust; narrow-scope trust; relationship satisfaction

INTRODUCTION

Consumers may often show a bias in their knowledge; they may believe that they know more/less than they actually do (Hansen & Thomsen, 2013). Previous studies have used the concept knowledge over/underconfidence (O/U) to investigate such knowledge bias (e.g., Weber and Brewer 2004). Consumer knowledge O/U results from the combination of subjective and objective knowledge. Subjective knowledge refers to individuals' perceptions of their own knowledge, while objective knowledge refers to absolute knowledge measured against objective standards (Alba & Hutchinson, 2000). Extant research indicates that knowledge O/U may be a powerful concept in explaining consumer choice behavior. For instance, past research indicates that knowledge overconfident individuals are likely to overestimate their ability in making correct choices (Bukszar, 2003), have a higher tendency to refrain from necessary information search (Alba & Hutchinson, 2000), use less time to perform a certain choice task compared with less knowledge confident consumers and show a tendency towards higher financial trading volumes (Abreu & Mendes, 2012). This paper investigates how consumer knowledge O/U influences two types of trust (broad-scope trust and narrow-scope trust) and consumer relationship satisfaction. While trust has long been regarded as one of the most critical variables for developing and maintaining well-functioning customer–seller relationships (Selnes & Sallis, 2003), the financial crisis has in particular elevated the focus on consumer trust in financial services (e.g., Sapienza & Zingales, 2012).

In correspondence with recent trust-related research (Grayson, Johnson, & Chen, 2008, Hansen, 2012a, b), it is considered that trust not only relates to consumer trust in individual companies (i.e., narrow.-scope trust, NST) but also relates to the broader business context in which consumers may plan and carry out their behavior (i.e., broad-scope trust, BST). Following Sirdeshmukh, Singh and Sabol (2002) NST can be defined as ''the expectation held by the customer that the service provider is dependable and can be relied on to deliver on its promises'' (p. 17). Based on Sirdeshmukh, Singh and Sabol's (2002) definition of NST, and in line with

Hansen (2012a), BST is defined as the expectation held by the consumer that companies within a certain business type are generally dependable and can be relied on to deliver on their promises.

This study contributes to the literature on consumer knowledge bias, consumer trust, and relationship marketing in several ways: First, it is shown that the more knowledge O/U a consumer becomes, the higher/lower NST and levels of relationship satisfaction become. Second, is shown that BST negatively moderates the relationship between knowledge O/U and relationship satisfaction such that knowledge O/U has a greater positive/negative effect on relationship satisfaction when BST is low compared to high. In addition to these two new sets of contributions to the literature, this study provides further support to previous research demonstrating that NST and BST both positively influences relationship satisfaction and that BST positively influences NST (Grayson, Johnson, & Chen 2008). This study is based on a survey comprising 756 mutual fund investors. Trust is likely to be especially important in consumer mutual fund behavior because mutual fund companies have a distinct responsibility for the management of their consumers' funds and the nature of financial advice supplied.

CONCEPTUAL MODEL AND RESEARCH HYPOTHESES

Sellers and customers do not just exchange services and money but also often create ongoing, and even trusting, relationships of mutual benefit as suggested in the relationship marketing approach (Sheth & Parvatiyar, 1995). Although a large number of conceptualizations of 'relationship marketing' have been proposed, marketing researchers seem to agree that (a) relationship marketing focuses on the individual customer–seller relationship; (b) both parties in a relationship must benefit for the relationship to continue; (c) the relationship is often longitudinal in nature; (d) the focus of relationship marketing is to satisfy and to retain customers (Cox & Walker, 1997). This has resulted in a strong focus on variables such as (narrow-cope) trust (NST) and satisfaction within the relationship marketing approach (e.g., Regó, Morgan, & Fornell, 2013). In addition to NST and relationship satisfaction, the conceptual model comprises consumer knowledge O/U and BST (Figure 1). While NST has been extensive investigated within the relationship marketing literature, BST is clearly under-researched. This is unfortunate as it can be suggested that BST may assume an important role in understanding customer-seller relationships by moderating the relationship between knowledge O/U and relationship satisfaction, and by directly affecting NST and relationship satisfaction. In the conceptual model, knowledge O/U is incorporated as a focal construct, which is suggested to directly influence all other model constructs.

[Insert Figure 1 about here]

The conceptual model consists of two parts. A baseline part reflecting previous research results regarding the relationships between BST, NST, and relationship satisfaction and a hypothesized part hypothesizing relationships between O/U, BST, NST, and relationship satisfaction. The model constructs are reviewed in the next section followed by a review of the baseline part of the model and a development of the hypothesized part of the model.

Construct Definitions

Knowledge over/underconfidence (O/U). Knowledge over/underconfidence refers to consumers' impression of the accuracy of their knowledge. In that respect, overconfident individuals express confidence in their knowledge that exceeds the accuracy of their knowledge, whereas underconfident individuals express confidence in their knowledge that is lower than the accuracy of their knowledge. *Narrow-scope trust (NST).* While a large body of research exists within the concept of NST, with different points of view being advocated, this study adapts the often-cited definition proposed by Sirdeshmukh, Singh and Sabol (2002) and conceptualize NST as ''the expectation held by the consumer that the service provider is dependable and can be relied on to deliver on its promises'' (p. 17). *Broad-scope trust (BST).* BST is conceptualized as consumers' expectation that companies within a certain business type are generally dependable and can be relied on to deliver on their promises (Grayson, Johnson, & Chen, 2008). This definition is consistent with previous research suggesting that informal BST (or 'generalized trust') is a generalized expectancy that the promise of a group can be relied upon (Siegrist, Gutscher, & Earle, 2005). *Relationship satisfaction*. Relationship satisfaction may be conceptualized as a facet (attribute-specific) or as an overall (aggregate) characteristic. Also, the characteristic can be viewed as transaction-specific (encounter satisfaction) or as cumulative (satisfaction over time). Similar to past relationship and service-related research (Guo, Arnould, Gruen, & Tanng, 2013), relationship satisfaction is in the present study conceptualized as an overall, cumulative consumer evaluation of her/his relationship with a service provider. Cumulative relationship satisfaction recognizes that customers may rely on their entire experience with a service provider when evaluating its performance.

Control Variables

Several factors were included as control variables in the study Although the control variables were not the focus of this study, controlling for their effects provides a stronger test of the developed hypotheses (Greene, 2000).

Financial healthiness. Consumers' financial healthiness refers to consumers' financial status and the degree to which they have financial adequacy (Xiao, Sorhaindo, & Garman, 2006). Financial healthiness can be related to objective circumstances such as income and assets, subjective phenomena such as financial satisfaction or happiness, and/or outcomes such as whether consumers generally exhibit positive and desirable financial behaviors (Xiao, Tang, & Shim, 2009). In line with Perry and Morris (2005), this study takes an outcome approach and conceptualizes financial healthiness as the extent to which the consumer generally exhibits positive financial behaviors, such as setting money aside for savings and avoiding spending more money than one has. Financial healthiness may be related to all the endogenous model constructs, i.e., NST, BST and satisfaction. This expectation is consistent with marketing relationship theory suggesting that customers who perceive value or benefits, which (wholly or partially) can be attributed to their relationship with an exchange partner, are likely to increase their willingness to develop relational bonds (Palmatier et al., 2006).

Age, gender, and education. Research suggests that older individuals generally grow more conservative and risk adverse (Dellande & Saporoschenko, 2004), which in turn may influence their propensity to trust (Das & Teng, 2004). Also, it has been found that both age and education are positively correlated with financial literacy and financial wellbeing, which in turn may lead to less financial concerns (Taft et al., 2013). While several studies suggest that gender may be related to consumers' financial behavior, previous research results are mixed concerning the direction of the influence of gender on individuals' financial behavior. While some research suggests that males are more likely than females to save a proportion of their income and that males also have higher levels of financial awareness and literacy compared to females (Taft et al., 2013), other results indicate that females tend to be more risk adverse in financial choices than males (Dellande & Saporoschenko, 2004), which in turn may affect their willingness to trust (Das & Teng, 2004).

Baseline Model

BST and NST. A positive relationship between BST and NST is included in the baseline model. According to institutional theory, the processes and structures that are established within a society, or a community, act as authoritative guidelines for social behavior. Social behavior needs to be legitimized by the rules and norms that exist in the social environment (Scott, 2004). Thus, if trust is common within a business type, it encourages the development of trust in customer-seller relationships suggesting the existence of a positive relationship between BST and NST. The few studies dealing with the relationship between BST and NST suggest the empirical validity of institutional theory. Although Kenning (2008) found no significant correlation between general trust and specific trust, Grayson, Johnson, and Chen (2008) and Hansen (2012a, 2012b) found that BST positively affected NST. Consistent with these findings, Pennington, Wilcox, and Grover (2003) found that system trust positively influenced perceived trust in a vendor.

NST and relationship satisfaction. A positive relationship between NST and consumer relationship satisfaction is also included in the baseline model. This is because NST may positively affect levels of performance, which in turn may lead to greater satisfaction (Dwyer, Schurr, & Oh, 1987). Also, a reduction in the trustworthiness of a service provider may result in dissatisfaction (Sarkar, Krishnan, & Balaji, 2013), and therefore NST can be regarded as a requirement in order to satisfy customers (Choi, Sohn, & Lee, 2010).

BST and relationship satisfaction. The baseline model also suggests that relationship satisfaction is positively influenced by BST. When BST is low, it means that not every service provider can be trusted to deliver satisfying services and therefore the consumer faces the problem of avoiding pitfalls in the marketplace (Tan & Vogel, 2008). In such incidents, past research suggests that in order to maintain self-confidence and to avoid cognitive dissonance the consumer will assign external blame (Shaver, 1985), which may reduce relationship satisfaction.

Research Hypotheses

In correspondence with its focus on consumer knowledge bias this study uses cognitive bias theory as a conceptual basis. In broad terms, cognitive bias refers to a situation in which an individual has an 'inaccurate view of the world' (Marshall et al., 2013) such as being knowledge O/U. It is argued that cognitive bias theory (Klayman and Ha, 1989; Gudmundsson & Lechner, 2013) offers a comprehensive theory-driven framework to satisfactorily address and hypothesize relationships between knowledge O/U, BST, NST, and relationship satisfaction. Knowledge overconfident consumers may feel more in control and more comfortable in their evaluation of a service provider (Walczuch & Lundgren, 2004). Indeed, research suggests that knowledge overconfident, consumers will not feel the need to seek assistance from others regardless of task difficulty (Gino & Moore, 2007), will limit their evaluation of information and will generate fewer thoughts compared to less overconfident or underconfident consumers (Alba & Hutchinson, 2000). This may in turn reduce their likelihood of detecting pitfalls in financial customer-seller relationships and in financial institutions. Because consumers exhibiting overconfidence are likely to overtrust their knowledge-based assumptions about decisions, they may not see the uncertainty associated with conclusions stemming from those assumptions (Simon, Houghton, & Aquino, 1999). They, therefore, may erroneously conclude that a certain action is within their control, which in turn may diminish their need for trust. Hence, knowledge overconfidence may lead to overrating feelings of control and the likelihood of good events in the marketplace, i.e. having confident positive expectations about the behavior and abilities of others, and underrating the likelihood of bad events and feelings of no control (Gudmundsson & Lechner, 2013). Research in cognitive psychology suggests that overconfident individuals are likely to ignore disconfirming evidence in favor of focusing on confirming evidence (Klayman & Ha, 1989). Moreover, overconfident individuals tend to avoid potential errors or problems in order to maintain feelings of competence (Dorner and Schaub 1994). In contrast, underconfident individuals would not ignore disconfirming relationship information to the same degree, because they have a compelling justification for 'being wrong' - the lower confidence in the accuracy of their knowledge (Scherer, Windschitl, & Smith, 2013). That is, while overconfident individuals may not always be able to avoid disappointing relationship outcomes, they can be expected to be more likely to look for relationship information that maintains optimism and a positive outlook. Hence, the more knowledge O/U a consumer becomes, the less/more likely it should be that s/he detects and takes into account the limitations of service providers; thus influencing relationship satisfaction and trust. Based on the above arguments, the following hypotheses are proposed.

> H1: The more over/underconfident as consumer becomes, the higher/lower the level of broad-scope trust (BST).
> H2: The more over/underconfident as consumer becomes, the higher/lower the level of narrow-scope trust (NST).
> H3: The more over/underconfident as consumer becomes, the higher/lower the level of relationship satisfaction.

According to the knowledge calibration paradigm (Alba & Hutchinson, 2000) knowledge underconfident consumers are complicating the decision process while knowledge overconfident consumers are simplifying choices. Knowledge O/U can also be described as a trust bias since knowledge underconfident consumers undertrust their actual knowledge, whereas knowledge overconfident consumer overtrust their actual knowledge (Gudmundsson & Lechner, 2013). Since individuals tend to prefer trustful sources over less trustful sources (Rotfeld, 2007; Luhmann, 1979), it means that knowledge underconfident consumers are more vulnerable and more dependent on the context in which they are operating. This is because knowledge underconfident consumers have only low trust in the accuracy of their own knowledge compared to less underconfident or overconfident consumers who have higher trust in the accuracy of their own knowledge. Moreover, knowledge underconfident consumers will engage in external information search to a higher degree than overconfident consumers, which in turn will increase their dependence on a trustful environment. Notably, a necessary condition of trust is interdependency, wherein the interests of one party cannot be achieved without reliance upon another party and/or upon the context in which the activities take place (Rousseau et al., 1998). When BST is low it means that consumers cannot just rely on any service provider to reduce the complexity and uncertainty they are faced with. Hence, the consumer risks that her/his interests will not be properly served. When BST is low even higher demands are therefore put on consumers' confidence in their knowledge accuracy in order to evaluate relationship satisfaction (Jayanti & Burns, 1998). Moreover, research indicates that if people feel that their environment cannot be trusted, they are more likely to ignore it if they feel that their own abilities can be trusted (Rotfeld, 2007; Luhmann, 1979; Parsons, 1967). Hence, low BST can be expected to be more easily handled by knowledge overconfident consumers since in such a situation they may feel it easier to mentally justify their choices than less overconfident or underconfident consumers, which in turn is likely to be positively related to relationship satisfaction (Sheth & Parvatiyar, 1995). In summary, based on the empirical evidence and the theoretical reasoning, the following hypothesis is proposed.

> H4: The influence of knowledge O/U on satisfaction is negatively moderated by broad-scope trust (BST), such that knowledge O/U has a greater positive/negative effect on relationship satisfaction when broad-scope trust (BST) is low compared to high.

In the conceptual model, NST is not suggested to moderate the relationship between knowledge O/U and relationship satisfaction. This is because NST will hardly be considered by consumers as a contextual construct. Early in a relationship, NST is most likely based primarily on general trust in market institutions, but as the relationship continues consumers will develop a more nuanced understanding of trust where a divergence is more likely between BST and NST (Hall et al., 2002). This is because as individual relationships develop, a personalization occurs, which naturally results in the consumer and service providers being more closely connected in the trust building process for NST than for BST (Gutek, Bhappu, Liao-Troth, & Cherry 1999).

METHODOLOGY

Data Collection

The industry selected for this study was mutual funds. A two-step procedure was utilized to sample respondents from Capacent Epinion's online panel of approximately 30,000 Danish consumers. In the first step, a stratified random sample of 3,520 respondents aged 18+ was drawn from the online panel, reflecting the distribution of gender, age, and educational level in the population (aged 18+) as a whole. In the second step, these 3,520 respondents were contacted by email, and asked to respond to the screening question: "Have you recently been in contact with your current (main) mutual fund company?" (Yes/No/Not currently engaged with a mutual fund company) to ensure that only ongoing relationships were included in the sample. In the final sample (n=756), 48.5% were women and average age was 49.3 years (with ranges between 18-85 years). It was investigated whether the profiles of the study samples deviated from the country population aged 18-85 on gender and educational level. χ^2-tests of difference between samples and population frequencies on each of these criteria produced p-values of .04 (gender) and .10 (education), respectively, indicating that the sample to a fairly degree reflected the demographic profile of the studied country population.

Measurements

Model constructs. The measurement items were based on prior research, modified to fit the financial service context of this study where relevant (see appendix). NST was measured by three items adapted from the trust in the organization scale developed by Tax, Brown, and Chandrashekaran (1998). A three-item scale adapted from De Wulf, Odekerken-Schröder, and Iacobucci (2001) measured relationship satisfaction, whereas three items based on Tax, Brown, and Chandrashekaran (1998) measured BST. In accordance with the knowledge O/U concept both consumers' subjective and objective financial knowledge were measured. Objective knowledge was measured using a series of 10 financial knowledge items. The items were developed upon a 20-item pool, derived partly upon financial basics, partly from official regulations issued by financial authorities. Six of the items related to financial service industries in general, whereas four items related to the specific service industry under consideration. All items were exposed to respondents as true/false items. For example, respondents were asked to indicate whether it is true or false that 'Annual Percentage Rate (APR) is an overall indication of how much you pay on a loan only from the perspective of the establishment costs and commission fees.' Respondents indicated their answer and also indicated their confidence (subjective knowledge) that the answer was correct. This study adapted the restricted scale procedure applied by Pillai and Hofacker (2007) and exposed respondents to a scale ranging from 50% to 100%. Percentages below 50% are irrelevant in two-choice situations since respondents in such cases would have chosen the alternative more probable option.

Control variables. Financial healthiness was measured using five items adapted from Joo and Grable (2004) and education was measured by a standard scale provided by the Danish Statistical Bureau. Gender was included as a control variable with contrast codings: -1=male; 1=female.

RESULTS

Validation of Measurements

Confirmatory factor analysis (CFA) was conducted on the four (i.e., including the latent control variable) latent factors, with each indicator specified to load on its hypothesized latent factor (Table 1).

[Insert Table 1 about here]

The measurement model yields a chi-square of 124.53 (d.f.=71, p<.01). However, the Hoelter(.05) (Hoelter, 1983) estimate (=556) suggests that the lack of absolute fit can be explained by sample size. Also, the root mean square error of approximation (RMSEA=.032), the comparative fit index (CFI=.98) and the normed fit index (NFI=.96) show an acceptable degree of fit of the measurement model (Bagozzi & Yi, 1988). All composite reliabilities are equal to or exceed .75, indicating good reliability of measured constructs (Bagozzi & Yi, 1988). Finally, extracted variance is equal to or greater than .50 for all latent constructs, except one (financial healthiness=.40), which to a reasonable degree satisfies the threshold value recommended by Fornell and Larcker (1981). In order to investigate discriminant validity the method proposed by Fornell and Larcker (1981) is initially applied. According to this method, the extracted variance for each individual construct should be greater than the squared correlation (i.e., shared variance) between constructs. An examination of Table 2 shows that the extracted variance for each of the constructs exceeds the squared correlation.

[Insert Table 2 about here]

Moreover, to further test discriminant validity, the baseline measurement model is compared to alternative models where covariances between pairs of constructs are constrained to one. In every case, the restricted model has a significant (p<.01 in all incidents) poorer fit than the unrestricted model suggesting sufficient discriminant validity.

Descriptive Statistics

Table 2 also reports descriptive statistics for financial knowledge O/U, for the four latent constructs (including the latent control variable financial healthiness), and for the observed control variables used in this study. Similar to previous research, respondents were on average overconfident (the difference between the mean of the probability responses and the overall mean proportion correct was .08). A comparison of BST with NST shows that NST is approximately one-sixth higher on average than BST (5.73 vs. 4.91, p<.01; Table 2). Similar results have been observed in other fields, such as medicine, where people typically have stronger trust in their individual physician than in physicians in general (Hall et al., 2002). The divergence between NST and BST might be related to the observation that financial customer–seller relationships are often relatively close and long term. As noted above, as individual relationships develop, the personalization that occurs may boost the level of NST (Gutek et al., 1999).

Hypotheses Testing

The hypothesized model was fitted to the data using structural equation modeling (SEM) analysis. The moderating effect (i.e., BST was hypothesized to negatively moderate the relationship between knowledge O/U and relationship satisfaction) was formed using the residual-centering (i.e., orthogonalizing), two-step procedure recommended by Little, Bovaird and Widaman (2006). First, each of the specified interactions was regressed onto the first-order effect indicators of the two constructs under consideration. Second, for each of these regressions, the residuals were saved and used as indicators of the interaction construct. The model chi-square statistic was 348.46 (d.f.=159, p<.01), indicating that the model fails to fit in an absolute sense. However, the more robust fit indexes (CFI=.98; NFI=.96; RMSEA=.040) indicated an acceptable model fit. In addition, the Hoelter(.05) (Hoelter, 1983) estimate was 411 suggesting that the lack of absolute model fit can be explained by sample size. A competing model, which also included the potential influence of the interaction between knowledge O/U and NST on relationship satisfaction, was estimated. Compared with the proposed model the results suggest that the competing model had inferior fit statistics: χ^2=753.68, d.f.=216, p<.01; CFI=.96; NFI=.95; RMSEA=.057;

Hoelter(.05)=252, and the specified interaction effect showed no effect on relationship satisfaction (*p*=.29).

In order to assess the effects of common-method variance, the structural model was estimated by adding a same-source factor (all 14 main construct items loading on it) to the model in Figure 1 (Netemeyer, Boles, McKee, & McMurrian, 1997). Common method variance is a known limitation when using self-report measures. Comparing an unconstrained model in which all indicators are related to a common factor to one in which these paths are constrained to zero represents a significance test of the effects of the same-source factor. The fit of the constrained model was χ^2=308.22 (d.f.=158), CFI=.97; NFI=.96; RMSEA=.040. For the unconstrained model, the fit was χ^2 = 279.93 (d.f.=145), CFI=.98; NFI=.97; RMSEA=.035. The fit of the unconstrained model did not differ from that of the constrained model ($\Delta\chi^2$=18.29, Δd.f.=13, *p*=.15) and the results for all the estimated model paths were identical to the results reported above suggesting that the results are robust with respect to common method variance.

To conclude, the hypothesized model is a reasonable fit to the data. Table 3 displays the estimated coefficients from the SEM analysis.

Insert Table 3 about here

Consistent with the baseline model BST (β=.46, *p*<.01) and NST (β=.10, *p*=.05) both showed a positive influence on relationship satisfaction, and BST showed a positive influence on NST (β=.47, *p*=.01). Three of the four hypothesized relationships included in the conceptual model were supported in the study. Knowledge O/U was not related to BST (β=.03, *p*=.48), although the coefficient was in the expected direction. Hence, H1 was not supported in the study. Knowledge O/U showed a positive influence on NST (β=.10, *p*=.01) and relationship satisfaction (β=.32, *p*=.04). These results provide support to both H2 and H3. The influence of knowledge O/U on relationship satisfaction was *negatively* moderated by BST (β=-.52, *p*<.01). Thus, H4 was supported. None of the control variables were significantly related to any of the constructs in the survey, although financial healthiness was marginally (*p*<.10) positively related to NST and BST, respectively.

DISCUSSION

This study provides the first attempt to model relationships between knowledge O/U, BST, NST, and customer relationship satisfaction. Previous research has mainly focused on the implications for individual consumers when studying the degree of correspondence between subjective and objective knowledge. For instance, it has been suggested that underconfident consumers may refrain from applying some of their accurate knowledge in their decision making, because they do not believe this knowledge to be valid. In that respect, underconfidence may lead to delays, lost opportunities, and wasted resources. Also, it has been argued that overconfidence inhibits necessary information search, since overconfident consumers believe to know more than they actually do (Alba & Hutchinson, 2000). The present research expands this view on the correspondence between consumer subjective and objective knowledge by demonstrating that knowledge O/U may also lead to direct and important marketing consequences. Specifically, a positive relationship between knowledge O/U and relationship satisfaction was detected such that the more over/underconfident as consumer becomes, the higher/lower the level of relationship satisfaction. This finding suggests that managers should carry out their satisfaction improvement efforts relative to the combination of customers' subjective and objective knowledge. Customers' subjective and objective knowledge can be assessed by, for instance, quizzes in which customers' complete a set of two-choice questions. For each question, and similar to the procedure used in the present study, participants choose the answer they think is right and indicate, on a scale from 50% to 100%, their certainty that the answer is correct. Since knowledge O/U deals with individuals' cognitive (mental) biases it could be recommended that, for ethical reasons, all participants are made fully aware of the purpose of the quiz so that they can refuse that their responses are used if they feel that their personal boundaries are exceeded.

Managers should be especially focused on carrying out efforts that may compensate for the finding that underconfident/low overconfidence customers are less likely to build relationship satisfaction than overconfident customers. Inspired by the marketing literature, factors such as interpersonal skills of frontline employees (Dagger et al., 2013), and consumers' degree of participation in the production, delivery, and development of the service (Guo et al., 2013), may influence customer relationship satisfaction positively.

This study provides evidence that the explanation and understanding of relationship between customer knowledge O/U and relationship satisfaction is significantly enhanced by inclusion of the potential moderating effect of BST. The findings suggest that the functioning of knowledge overconfidence is most effective when customers exhibit a low level of BST. Hence, while managers should be concerned that BST may negatively moderate the relationship between knowledge O/U and relationship satisfaction they may, on the other hand, also benefit when the level of BST is high, or on the increase, since in such a situation BST may offset the tendency of knowledge underconfident customers to show less relationship satisfaction. Clearly, these results emphasize that the investigation of customer-seller relationships should not be limited to focusing on the interaction between the two parties, as is typically modeled but should also take into account the context in which the relationships develop.

The results of this study confirm previous research suggesting a positive relationship between BST and NST. This finding reflects institutional theory, which predicts a positive relationship between BST and NST. At the same time, this finding contrasts functionalist theory (Luhmann, 1979; Parsons, 1967), which holds that different forms of trust are only formed where it is needed. In incidents where BST is insufficient (i.e., at a low level), economic parties may therefore compensate for this by developing NST suggesting the existence of a negative relationship between BST and NST. Since BST is an environmental effect, the detected positive relationship between BST and NST holds true even for individual service providers who have not actively participated in influencing the level of BST. However, because of market competition and scarce resources some managers may feel tempted only to focus on developing NST (Williamson, 1993). Since it is in the interest of societies that their citizens have trust in its institutions this underlines the importance of developing well-functioning regulations, which ensures that the development of BST is not left to the industry alone. On top of this, the particular industry may consider improving self-regulatory mechanisms to facilitate the development of a trustful company culture. The results also indicate that NST partially (marginally) mediated the relationship between BST and relationship satisfaction. This suggests that although BST may be an important ingredient for relationship satisfaction because of a lower general uncertainty about the service outcome, NST has assumed tremendous significance in financial customer–seller relationships as it also has been noted by previous research (e.g., Romàn & Ruiz, 2005).

A positive relationship between knowledge O/U and NST was found in this study - the more O/U a consumer becomes, the higher/lower the level of NST. This finding is consistent with the arguments that knowledge overconfident consumers may feel more in control and more comfortable in their evaluation of service providers than less overconfident, or underconfident, consumers. NST is desirable because it may lead to positive consequences such as increased relationship satisfaction as also confirmed in the present study. Moreover, consumer trust in their service provider (NST) may increase market dynamism because consumers are confident that their interests are currently being properly served, which may cause them to worry less about their personal situation (Knack & Keefer, 1997; Zak & Knack, 2001). However, too much trust may also backfire because in such a situation consumers may accept too much risk or be too ignorant, leading them to hesitate to search for better alternatives in the marketplace, which may reduce the dynamics of the market (Zak & Knack, 2001). This suggests that knowledge overconfidence may act as a double-edged sword in the consumer marketplace. In the context of financial services, it seems to be generally agreed that the financial crisis has led to a loss in customers' trust in financial institutions (e.g., Uslaner, 2010). Hence, consumer knowledge overconfidence may be beneficial in a 'trust crisis' because it may lead to a smaller reduction in NST than would otherwise have been the case. On the other hand, when NST is high, or on the increase, one may risk that consumer knowledge overconfidence will boost NST to a level where it negatively influences financial market dynamism.

The results suggest that overconfident consumers tend to show both higher NST and relationship satisfaction than less overconfident, or underconfident, consumers. However, it is worth noting that this study does not provide evidence about how managers may influence consumers' knowledge O/U in a relationship setting. Given the importance of knowledge O/U for NST and relationship satisfaction, future research is called upon to examine this issue. In that respect, some starting points are found in previous research. For instance, while knowledge may be transferred through one-way communication prior research indicates that feedback is essential when seeking to influence the correspondence between subjective and objective knowledge (Lichtenstein & Fischhoff, 1980) and thus settings in which dialogue is possible, for instance physical meetings and/or online dialogue forums, may be essential in influencing consumer knowledge O/U.

Figure 1 Conceptual Framework

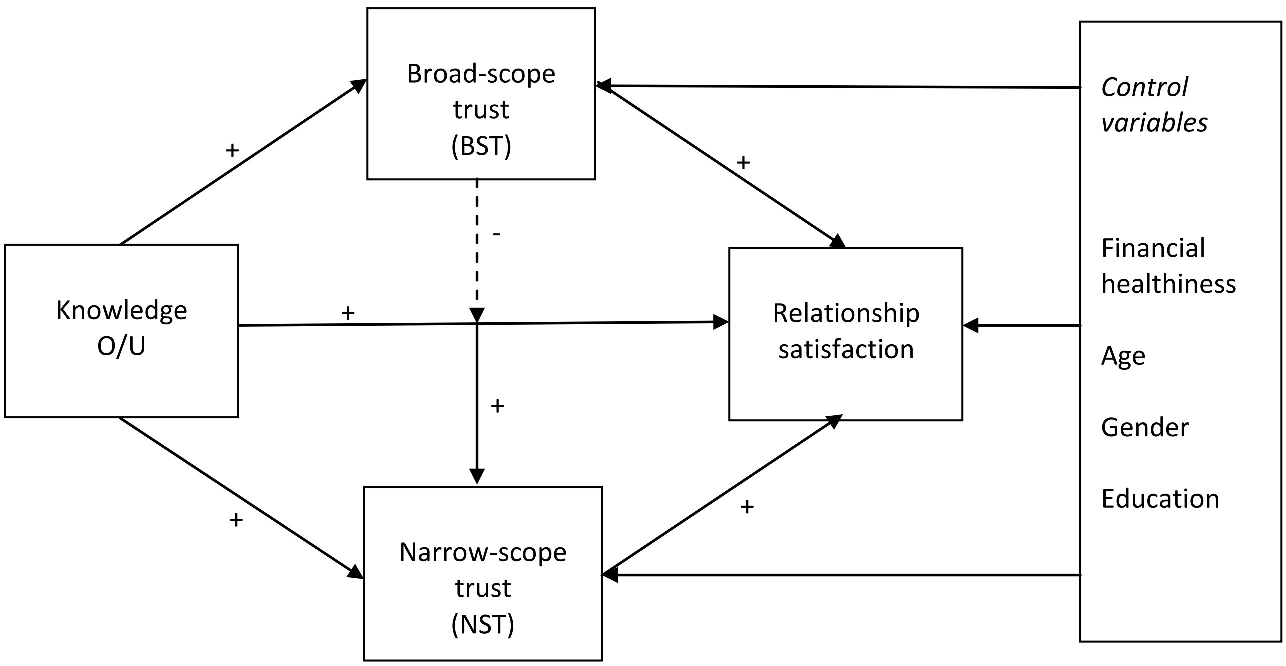

Table 1 Confirmatory Factor Analysis Results

Construct/indicator	Standardized factor loading[a]	Critical ratio	Composite reliability	Extracted variance
Broad-scope trust (BST)			.81	.60
X1	.70	-		
X2	.83	18.43		
X3	.78	18.00		
Narrow-scope trust (NST)			.76	.52
X4	.81	-		
X5	.64	14.85		
X6	.71	15.74		
Relationship satisfaction			.75	.50
X7	.75	-		
X8	.82	15.31		
X9	.52	12.47		
Financial healthiness			.77	.40
X10	.68	-		
X11	.73	14.86		
X12	.53	11.93		
X13	.63	13.65		
X14	.57	12.63		

Notes. [a] One item for each construct was set to 1.
CFA analysis model fit: χ^2 =124.53 (d.f.=71, p<.01); CFI=.98; NFI=.96; RMSEA=.032; Hoelter(.05)=556.
The items for each construct are summarized in the appendix. Knowledge O/U was treated as an observed variable and was therefore not included in the CFA analysis.

Table 2 Correlations and Descriptive Statistics

	1	2	3	4	5	6	7	8
1. Broad-scope trust (BST)	.60							
2. Narrow-scope trust (NST)	.22[a]	.52						
3. Relationship satisfaction	.25[a]	.09[a]	.50					
4. Knowledge O/U	<.01	.01[b]	.02[a]	na				
5. Financial healthiness	<.01	.01[b]	<.01	< .01	.40			
6. Age	<.01	.03[b]	<.01	.03[b]	.04[a]	na		
7. Education	.04[a]	<.01	.02	<.01	.01	.02	na	
8. Gender	na	na	na	na	na	na	na	na
Mean	4.91	5.73	4.93	.08	6.23	49.3	5.34[c]	.49[d]
Std. deviation	1.38	1.09	1.27	.16	1.04	13.75	2.07	-

Notes. [a]p<.01; [b]p<.05. na: not applicable. [c]Education was measured on an eight-point scale ranging from 1(=elementary school) to 8(=master's degree or higher).[d] Proportion of women in the sample is reported.
Diagonals represent average amount of extracted variance for each construct. Non-diagonals represent the shared variance between constructs (calculated as the squared of correlations between constructs).Averaged scale means are reported; all items were measured on 7-point Likert scales (1=strongly disagree; 7=strongly agree).

Table 3 Estimated Standardized Coefficients

	Dependent Constructs					
	Narrow-scope trust (NST		Broad-scope trust (BST)		Relationship satisfaction	
Independent Constructs	β(SE)	*t*-Value	β(SE)	*t*-Value	β(SE)	*t*-Value
Direct Effects						
Knowledge O/U	. .10(.01)	2.50[a]	.03(.01)	.70	.32(.11)	2.00[b]
Narrow-scope trust (NST)	- -	-	- -	-	.10(.06)	1.86[c]
Broad-scope trust (BST)	.47(.04)	9.77[a]	- -	-	.46(.06)	8.22[a]
Moderating Effect						
Knowledge O/U x BST	- -	-	- -	-	-.52(.01)	-3.17[a]
Control Variables						
Financial healthiness .	.08(.04)	1.92[c]	08(.05)	1.80[c]	-.21(.04)	-.49
Age	.06(.01)	1.52	-03(.01)	-.66	-.01(.01)	-.23
Gender .	-.01(.07)	-.23	05(.09)	1.14	-.01(.08)	-.04
Educational level .	06(.02)	1.53	03(.01)	.70	-.01(.02)	.82

Notes. [a]Significant on the 1% level; [b]significant on the 5% level; [c]significant on the 10% level.
Model fit: χ^2=348.46 (d.f.=159, p<.01); CFI=.98; NFI=.96; RMSEA=.040; Hoelter(,05)=411.
R^2: (NST=.24; BST=.03; relationship satisfaction=.30).

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APPENDIX

Items used to measure the constructs in the study

OBEJCTIVE KNOWLEDGE

General objective knowledge items

Annual Percentage Rate (APR) is an overall indication of how much you pay on a loan only from the perspective of the establishment costs and commission fees.

It is only when you acquire a service elsewhere than in banks or pension companies that you as a consumer is entitled to get the APR.

Everyone who advertises prices on loans must disclose the APR in their publicly available materials.

Peter is considering creating an overdraft of $5,000 or $10,000 with an interest rate of 5% in a bank. There is no fee to set up the bank credit, and no ongoing management fee. Peter gets the lowest APR on the $10,000 overdraft.

APR summarizes annual interests and fees in one figure so that you have the opportunity to compare the annual cost of acquiring different financial services of the same type with the same maturity.

APR may not be used to compare the cost of various loans of the same type with the same maturity.

Industry-specific (mutual funds) objective knowledge items

Mutual funds are an alternative to investing directly in bonds and equities.

Only few mutual funds investors have their investment certificates registered in a repository.

When investing in mutual funds you can always be 100% sure that you will get a fixed interest rate.

If you buy one mutual fund certificate out of, for instance, one hundred certificates issued by a mutual fund it means that you own one per cent of that mutual fund's fortune.

BROAD-SCOPE TRUST (BST)

X1. In general, I believe that financial companies cannot be relied on to keep their promises*

X2. In general, I believe that financial companies are trustworthy

X3. Overall, I believe financial companies are honest

NARROW-SCOPE TRUST (NST)

X4. I believe that my [financial service provider] cannot be relied upon to keep its promises*

X5. I believe that my [financial service provider] is trustworthy

X6. Overall, I believe my [financial service provider] is honest

RELATIONSHIP SATISFACTION

X7. I am satisfied with the relationship I have with my [financial service provider]

X8. As a regular customer, I have a high quality relationship with my [financial service provider]

X9. I am happy with the effort my [financial service provider] is making towards regular customers like me

FINANCIAL HEALTHINESS (financial behavior over the last year)

X10. I set money aside for savings.

X11. I reached the maximum limit on a credit card.*

X12. I spent more money than I had.*

X13. I had to cut living expenses.*

X14. I had financial troubles because I did not have enough money.*

*Item reverse coded.