

Financial Communications and Asset Allocation Decisions: The Effects of Reading Style, Financial Knowledge, and Individual Differences

Executive Summary

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This research assessed the ability of working adults to comprehend financial communications about retirement saving plans, and how comprehension, along with other factors, affects asset mix decisions. Although financial consultants are often available to workers in large organizations for face-to-face communication, self-education and self-assessment of knowledge are the dominant inputs to retirement decisions. Financial information is complex and unfamiliar compared to information about other types of consumer products, and this makes miscomprehension more likely. This research used eye-tracking technologies and procedures to collect detailed, individual level data about consumer information processing of financial communications. Experimental manipulations of the medium of communication (print vs. online) and information format (graphical vs. text) were used to assess the impact of these factors on reading style, comprehension (i.e., increases in financial knowledge), and personal asset mix decisions.

Reading style emerged as the measure most affected by our manipulations. Print encouraged a more systematic, deeper reading style compared to an online format. Charts attracted more visual attention. Reading style was found to affect comprehension, which in turn affected personal asset allocation decisions. Financial knowledge was found to have two components: conceptual knowledge (e.g., financial literacy) and procedural knowledge about how to make financial decisions. Conceptual and procedural knowledge had different antecedents, but similar and fairly strong effects on personal asset mix decisions. Higher knowledge individuals allocated more to equities compared to fixed income and guaranteed assets. Several other individual difference variables (especially risk tolerance and financial self-confidence) also had large effects on personal asset mix decisions.

The original title of the TIAA Institute and Pension Research Council Partnership grant proposal was “Comprehension of Financial Communications and Asset Mix Decisions: Eye-Tracking Analyses of Text, Tables, and Charts Presented in Print and Online Media”

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Communication format can be as important as communication content

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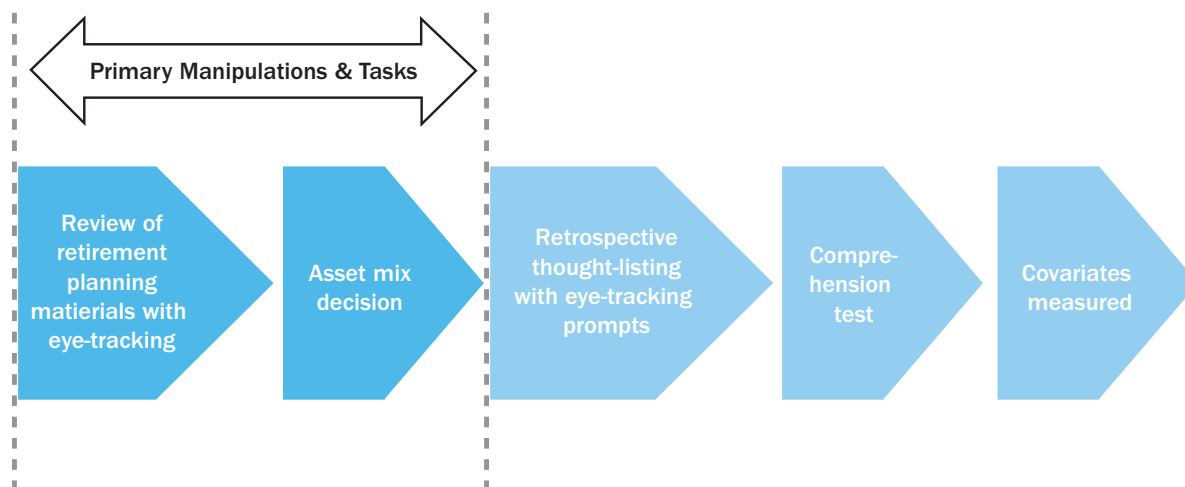
New research methods were used

The methods used in this research were those commonly found in cognitive psychology in the areas of visual attention, text comprehension, judgment, and decision making, including those commonly applied by marketing research firms in other consumer domains. However, two aspects of the present research appear to be new to the research literature on personal financial decision making. First, this research uses eye-tracking technologies and procedures to construct individual-level measures of reading style and empirically examine the extent to which reading style can affect comprehension and personal asset mix decisions. Second, in addition to standard measures of comprehension based on conceptual knowledge (similar in kind to financial literacy measures), this research developed a new measure of procedural knowledge for financial decisions.

The research proceeded in three phases: pilot testing (N = 210); an exploratory experiment (Experiment 1, N = 199); and a confirmatory experiment (Experiment 2, N = 333). Pilot testing identified appropriate print and online materials (without eye-tracking) and confirmed that the measures to be implemented gave plausible, surface-valid preliminary results.

The data collection procedure used in both experiments is shown in Figure 1. Participants initially read financial communications materials while their eye movements were being tracked. Subsequent tasks did not include eye-tracking. After reading the provided materials, participants made asset mix decisions for four hypothetical individuals that differed in age, risk tolerance, and gender. Subsequently, these allocations were used to compute an Allocation Score that assessed the extent to which the four allocation recommendations conformed to the conventional wisdom that older individuals and those with low risk tolerance should reduce investments in equities. The Allocation Score was designed to measure procedural knowledge about how to make asset mix decisions and contrasts with the Comprehension Test given later, which was designed to measure conceptual knowledge.

Figure 1. General procedure used in experiments 1 and 2

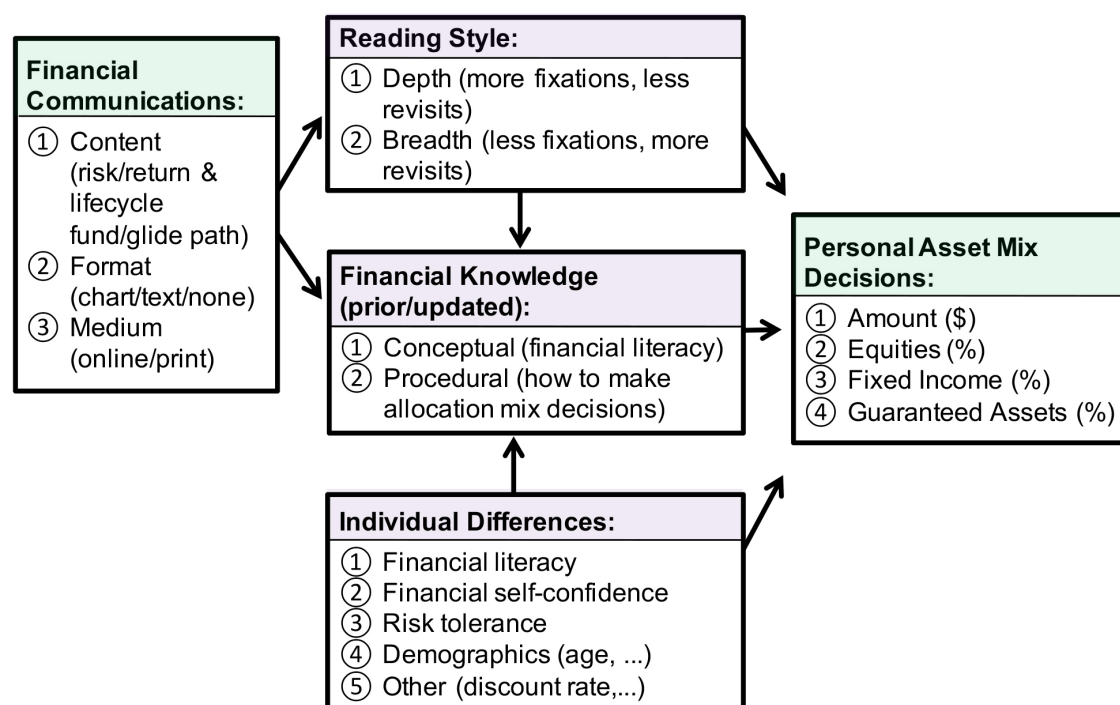


Support was found for a general model of how financial communications affect knowledge and personal asset mix decisions.

Although it is difficult to determine what asset mix is optimal for any given individual, normative approaches to decision making require that information media and formats should

have no effect on asset mix decisions, assuming that the information content is the same for all media and formats. We use the informal causal path model presented in Figure 2 to guide our assessments of whether decision biases exist and to explore possible mediators of any observed biases.

Figure 2. A causal path model of the effects of financial communications on personal asset mix decisions



Preliminary conclusions

This research and research of this type are in a very early stage, so conclusive implications about decision biases due to communication media and formats awaits further research that examines a wider variety of manipulations of content, media, and format and measures or manipulates a wider variety of possible mediators. However, even at this early stage, the results of the two experiments we conducted suggest answers to five questions that motivated the research.

1. Are people able to comprehend complex income products based on the print and online materials?

Yes, but communications media and formats can affect reading style and both conceptual and procedural knowledge.

2. Does comprehension affect asset mix decision making?

Yes, measures of both conceptual and procedural knowledge affected asset mix decisions almost as much as did risk tolerance and financial self-confidence.

3. Are there differences among communication formats?

Yes, the addition of graphical charts to financial communications can have strong effects on reading style that “intensify” the effects of content, as does the choice of communication medium.

4. Is comprehension affected by distance from retirement?

Yes, older participants were often more sensitive to experimental manipulations than middle-aged and younger participants.

5. What are the patterns of covariation between comprehension and other variables of interest?

Beyond the effects of comprehension on asset mix decisions, comprehension was enhanced by financial literacy and risk tolerance. Comprehension was also affected by reading style—sometimes for better and sometimes for worse.

About the Authors

J. Wesley Hutchinson is Stephen J. Heyman Professor and Professor of Marketing at the Wharton School of the University of Pennsylvania. His research focuses on consumer and managerial decision making, particularly the interrelationships among attention, learning, confidence, decision making, and expertise in repeated choice environments. His recent research projects include modeling the effects of visual attention at the point of purchase on in-store decisions using eye-tracking data, developing new measures of consumer responses to advertising, mass customization of product aesthetics, and intuitive statistical reasoning as part of decision making.

A past president of the Association for Consumer Research, Professor Hutchinson has published articles in a variety of top-tier journals in business and psychology. He is on the editorial review boards of the *Journal of Consumer Research*, the *Journal of Marketing Research*, and *Marketing Science*, and he has won several academic awards. Professor Hutchinson's teaching interests include courses in New Product Development (UG and MBA), the Social Impact of Marketing (UG and MBA), Research Methods (Ph.D.), and teaching Essentials of Marketing for Wharton's Executive Education program.

He received his Ph.D. in psychology from Stanford University and his BS in psychology from Duke University. Significant personal failures include never really learning to speak Spanish or play the guitar, among others too numerous to list.

Robert Botto is the technical lead for the Wharton Behavioral Lab, specializing in eye tracking research methods. Prior to the Wharton Behavioral Lab, he worked as a software engineer at Thompson Reuters Scientific. He holds a Master of Science in Engineering from the University of Pennsylvania in Computer Science.

Gal Zauberman is a Professor of Marketing at Yale University. He was previously the Laura and John J. Pomerantz Professor of Marketing and Professor of Psychology at The University of Pennsylvania's Wharton School. His academic background includes a B.A. with Highest Honors in Psychology and Economics from The University of North Carolina, Chapel-Hill, and a Ph.D. in Marketing from Duke University.

Professor Gal Zauberman studies consumer behavior, time in judgment and decision making, financial decision making, and enjoyment and memory of experiences. He won numerous awards, including the William O'Dell and the Paul Green best paper awards, and the 2007 Early Career Award for Distinguished Contributions to Consumer Psychology, Society for Consumer Psychology. His research has been published in top-tier academic journals including the *Journal of Consumer Research*, *Journal of Experimental Psychology: General*, the *Journal of Marketing Research*, *Management Science*, and *Psychological Science*, and received international media coverage, including the *New York Times*, *Scientific American*, and others.