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May 27, 2014

The National Bureau of Economic Research Household Finance Group Working Group Household Finance Research Grant Attention: Dennis Healy

Dear Mr. Healy:

Greetings from Rhode Island!

It is with pleasure that I write this letter of support for Sereikhuoch Eng who is submitting her grant proposal to the NBER Household Finance Working Group, Small Grants 2014 program. This research proposal seeks to investigate the effect of information format (visual vs textual) in a current environment where consumers are increasingly using mobile devices with smaller screens to access and act upon information for various types of decisions. In the past, research on consumer decision making has assumed a certain type of information display medium but Serei's research seeks to investigate whether the findings from previous research hold in the changing context of information displays. Furthermore, research in the broader consumer context has focused on decision situations where attitudes and behavioral intentions have been given more importance than decision quality. Financial decisions, such as credit card choices, on the other hand have consequences beyond attitudes and Serei's research will attempt to investigate the effect on decision quality.

I have known and worked with Serei from the time she entered the University of Rhode Island (URI), as a doctoral student and mentored her progress under multiple capacities: as the Professor for her doctoral buyer behavior seminar, a teaching assistant mentor, and currently as her dissertation chair. This proposal is part of her dissertation research.

She has had several opportunities to demonstrate her skills as a young researcher with potential to become a promising scholar. Serei is particularly interested in consumer decision making in complex decision environments (such as those for financial products), and her research proposal to understand consumer financial decision making will further enhance her career as well as the knowledge pool in the discipline. I have reviewed the proposal and believe that Serei will successfully complete the research project and generate interesting and impactful knowledge that will contribute to NBER.

I would be happy to provide additional information if requested.

Sincerely,
RubyRoyDholakia
Ruby Roy Dholakia, Ph. D.
Professor of Marketing

# Visual information effects on decision quality: The case of consumer credit card choice

Visual theory suggests that information presented visually is generally superior to textual information in influencing attention, preference, attitude, and purchase intention (Kim and Lennon, 2008; Townsend and Kahn, 2014). However, in complex tasks like choosing a credit card, understanding the effect of information presentation on attitude and purchase intention is not enough. Decision quality is a much more resilient construct than attitude or purchase intent; because quality, especially in the context of objective-bearing credit card choice, is more likely to determine the extent to which consumer financial well-being be sustained through such choice (e.g., see for example: Brown et al., 2013; Knoll and Houts, 2010; Lusardi, 2008a). Decision quality is a measure of the goodness of a choice – the degree of match or fit between heterogeneous consumer preferences and differentiated products (Haubl and Trifts, 2000). Decision quality encompasses subjective and objective measures. Subjective measures are self-report measures using Likert-scale responses for perceived satisfaction, confidence, confusion (Lee and Lee, 2004; Malhotra, 1982), difficulty experienced during decision making (Widing and Talarzyk, 1993), and the effect on decision time (Olson and Widing, 2002).

Objective measure, on the other hand, has to have an objective standard for quality and the following major operationalizations have been used to measure objective quality. The first measure is the proportion of choice made on nondominated versus dominated alternatives (reference here). A nondominated alternative is one that is superior on at least one attribute level, without being inferior on the other attribute levels, than other alternatives in the choice set (Haubl and Trifts, 2000; Olson and Widing, 2002). Choices of dominated alternatives are constructed to be sub-optimal given an individual's utility function at the time of decision and the set of available alternatives (Haubl and Trifts, 2000).

A second objective measure looks at the proportion of subjects who switch from their initial actual choice to the nondominated (or best) choice when given a chance (Haubl and Trifts, 2000; Olson and Widing, 2002). Widing and Talarzyk (1993, p. 133) argue that switching is indicative of decision error, while not switching is indicative of a more certain, reasoned, informed, and thus higher decision quality of initial choice.

In today's growing use of hand-held devices (e.g., smart phones and tablets), decision quality is likely to be affected by screen size. Hand-held devices often come in smaller screen sizes, which constrain the freedom and ability to present text-based information in a friendly-easy-to-navigate format to users (Arning, Ziefle, Stephanidis and Pieper, 2007; Churchill and Hedberg, 2008) and visual information appears to dominate (Roam, 2012; Townsend and Kahn, 2014; Walter, 2012). The research question of whether visual information format in small screen environment can affect consumer decision quality is of substantive practical as well as public policy concern.

Using construal-level theory, hyperbolic discounting and temporal frame, this proposal is designed to test a number of hypotheses to further understand the effect of visual information format and screen size on decision quality of credit card choice. Literacy measures (e.g., digital literacy and financial literacy; Eshet-Alkali and Amichai-Hamburger, 2004; Hargittai, 2005 & 2009; Knoll and Houts, 2010; Lusardi, 2008b) and demographic characteristics will be included as potential covariates. Specifically, the proposal seeks to answer the following questions:

- How does display screen size affect consumer decision quality?
- Does visual information enhance decision quality in complex tasks like choosing a credit card?
- How does visual information alter the effect of screen size on decisions?
- Do consumer's biases (i.e., hyperbolic discounting, temporal frame) limit the effect of visual information and screen size?

The proposal consists of four studies. In all four studies, consumer participants will be recruited using commercial panel agencies in order to heighten the data quality of responses. All data collection will not contain identifying markers, allowing data sharing to be fluid and clear of confidentiality and privacy concerns.

Study 1 will assess whether consumers gravitate towards visual information in an externally valid environment. A nationally representative sample of at least 1,200 will be recruited to participate in a survey containing questions regarding their preference for (i) information format (visual Vs textual), and (ii) a medium (i.e., via mail, desktop computer, tablet, or smart phone) for receiving different types of information (health, financial, investment, food, personal care, education); In addition, antecedents including (a) demographic characteristics (age, gender, race, income, education, employment status, kids, geographical locations); (b) technology use (work, home, both) and ownership (tablet, smart phone, laptop computer, desktop computer); (c) access to digital media (social media use such as Twitter, Facebook, Pinterest, Instagram, Snapchat, email, internet, text message, smart phone apps, search engines); (d) types of information preferred; (e) motives for format preferences; (f) decision making status (primary decider, joint-decision maker, influencer, user); and (g) purchase frequency (online versus offline) will also be obtained.

Study 2 will examine the visual vs. textual format and screen size effect on credit card choice. A minimum of 120 participants will be recruited for the study. Study 3 will extend Study 2 to include task complexity by examining two task decisions – complex (choosing a credit card) vs. simple (choosing crackers). The fourth study will examine the effect of information format, screen size, and temporal framing of message on decision quality.

With the four proposed studies, this research seeks to unearth answers to the above-postulated questions and form theoretically-sound contributions to the understanding of consumer credit choice and consumption.

# **Proposed Budget:**

	Item	Amount (USD)
Survey instrument and stimuli design:		\$400
-	Commissioned graphic designer for stimuli design:	
	4 sets of stimuli * \$100 = \$400	
Data collection:		\$7,800
_	Pre-tests of stimuli and instruments: \$2 * 300 pax = \$600	
_	Study 1: \$3 * 1,200 pax = \$3,600	
-	Study 2: \$5 * 120 pax = \$600	
_	Study 3: \$5 * 240 pax = \$1,200	
-	Study 4: \$5 * 360 pax = \$1,800	
Conference Travel and Attendance:		\$8,000
_	NBER conference: $2 \text{ pax } * \$2,500 = \$5,000$	
_	Consumer Financial Decision Making Conference:	
	1 pax * \$3,000 = \$3,000	
Total:		\$16,200

#### **References:**

- Arning, K., Ziefle, M., Stephanidis, C. & Pieper, M. (2007). "Barriers of information access in small screen device applications: The relevance of user characteristics for a transgenerational design. Universal access in ambient intelligence environments," *Lecture Notes in Computer Science*, 4397, 117-136.
- Brown, J.R., Kapteyn, A., Luttmer, E.F.P. & Mitchell, O.S. (2013). "Decision complexity as a barrier to annuitization," (No. w19168). National Bureau of Economic Research. (Available at: http://www.nber.org/papers/w19168)
- Churchill, D. & Hedberg, J. (2008). "Learning object design considerations for small-screen handheld devices," *Computers and Education*, 50(3), 881-893.
- Eshet-Alkali, Y. & Amichai-Hamburger, Y. (2004). "Experiments in digital literacy," *CyberPsychology and Behavior*, 7(4), 421-429.
- Haubl, G. & Trifts, V. (2000). "Consumer decision making in online shopping environments: The effects of interactive decision aids," *Marketing Science*, 19(1), 4-21.
- Hargittai, E. (2009). "An update on survey measures of web-oriented digital literacy," *Social Science Computer Review*, 27(1), 130-137.
- Hargittai, E. (2005). "Survey measures of web-oriented digital literacy," *Science Computer Review*, 23(3), 371-379.
- Kim, M. & Lennon, S. (2008). "The effects of visual and verbal information on attitudes and purchase intentions in Internet shopping," *Psychology & Marketing*, 25(2), 146-178.
- Knoll, M.A. & Houts, C.R. (2012). "The financial knowledge scale: An application of item response theory to the assessment of financial literacy," *Journal of Consumer Affairs*, 46(3), 381-410.
- Lee, Byung-Kwan and Lee, Wei-Na (2004). "The effect of information overload on consumer choice quality in an on-line environment," *Psychology & Marketing*, 21(3), 159-183.
- Lusardi, A. (2008a). *Household saving behavior: The role of financial literacy, information, and financial education programs* (No. w13824). National Bureau of Economic Research. (Available at: http://www.nber.org/papers/w13824)
- Lusardi, A. (2008b). *Financial literacy: an essential tool for informed consumer choice?* (No. w14084). National Bureau of Economic Research. (Available at: http://www.nber.org/papers/w14084)
- Malhotra, N.K. (1982). "Information load and consumer decision making," *Journal of Consumer Research*, 8, 419-430.
- Olson, E.L. & Widing II, R.E. (2002). "Are interactive decision aids better than passive decision aids? A comparison with implications for information providers on the Internet," *Journal of Interactive Marketing*, 16(2), 22-33.
- Roam, D. (2009). The back of the napkin. New York, NY: Penguin Groups.
- Townsend, C. & Kahn, B.E. (2014). "The 'Visual Preference Heuristic': The influence of visual versus verbal depiction on assortment processing, perceived variety, and choice overload," *Journal of Consumer Research*, 40(February). DOI: 10.1086/673521.
- Walter, E. (August 28, 2012). The rise of visual social media. Available at: <a href="http://www.fastcompany.com/3000794/rise-visual-social-media">http://www.fastcompany.com/3000794/rise-visual-social-media</a> (Accessed on October 27, 2013).
- Widing II, R.E. & Talarzyk, W. (1993). "Electronic information systems for consumers: An evaluation of computer-assisted formats in multiple decision environments," *Journal of Marketing Research*, 30(May), 125-141.

# Sereikhuoch (Serei) Eng

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Email: sereikhuoch\_eng@my.uri.edu

# **EDUCATION**

# Ph.D. University of Rhode Island, Kingston, RI

2015

**Business Administration (Marketing)** 

Advisor: Dr. Ruby Roy Dholakia

Committee: Dr. Nikhilesh Dholakia (marketing), Dr. Mark D. Wood (psychology)

Dissertation: "The visual thesis: The joint effects of information presentation

formats and screen size on consumer decision outcomes" (working

title)

# MBA Rensselaer Polytechnic Institute, Troy, NY

2008

**Business Management** 

# BS University of Canberra, Canberra, Australia

2001

**Applied Economics** 

#### UNIVERSITY TEACHING EXPERIENCE

#### Instructor, University of Rhode Island, Kingston, RI

BUS365: Marketing Principles

Fall 2010 (29 students)

Summer 2011 (27 students)

Fall 2011 (36 students)

Fall 2012(30 students)

Fall 2013 (38 students)

BUS467: Customer Relationship Management

Spring 2011 (29 students)

Spring 2012 (34 students)

#### Guest Instructor, University of Rhode Island, Kingston, RI

BUS365: Marketing Principles

Fall 2011 (undergraduate), instructor Dr. Jane Z. Cai

Fall 2013 (undergraduate), instructor Serena Jingyi Duan

BUS465: Marketing Communications

Fall 2012 (undergraduate), instructor Dr. Ruby R. Dholakia

BUS366: Consumer Behavior

Spring 2014 (undergraduate), instructor Dr. Ruby R. Dholakia

# Adjunct Lecturer, Limkokwing University of Creative Technology, Phnom Penh, Cambodia

Spring 2013: Taught upper-division undergraduate classes

Consumer Behavior (21 students)

International Marketing (12 students)

Marketing for Entrepreneurs (15 students) – self designed and developed Strategic Management (25 students)

# New Course Design Committee Member, University of Rhode Island, Kingston, RI

Fall 2013: New Media Marketing

- As a committee member charged with developing and designing a new upper-division undergraduate course, New Media Marketing, for the Department of Marketing
- Contributed to setting course objectives, goals, assessments, outlines, and content coverage
- The course proposal was approved at the Faculty Senate for undergraduate course offering from Spring 2014

#### PROFESSIONAL EXPERIENCE

# **Graduate Programs Assistant**

Dec 2013-May 2014

College of Nursing, University of Rhode Island, Kingston, RI

- Assist Dr. Patricia M. Burbank, the Associate Dean of Academic Affairs, with the administration of the College's graduate programs
- Work closely with the Dean's office, Graduate School, Enrollment Services, and other relevant departments, in handling the day-to-day requirements in the Student Affairs office
- Optimize the database and mailing systems for graduate applications and directories by creating a shared system drive for documents and establishing an etal account for central communication
- Construct graduate student database for academic and report tracking purposes
- Handle student orientation, recruitment outreach, inquiries, program entry, transfer, readmission, courses, and graduation preparation

# **Graduate Teaching Assistant**

2009-2013

College of Business Administration, University of Rhode Island, Kingston, RI

- Assisted Dr. Ruby R. Dholakia with the management of her classrooms and mentoring an honor student with her research project
- Worked on cross-disciplinary research projects such as social entrepreneurship, finance and accounting, and marketing
- Collaborated with professors on a consulting project with a French university on supply chain and marketing issues
- Developed and coded online surveys to achieve research objectives by being proactive at learning and utilizing novel survey tools (e.g., image tool, heat map)
- Managed research surveys from recruitment to data analyses

Data Specialist 2008-2009

Dynamic Logic (a WPP agency), Warwick, RI

- Dynamic Logic is a MillwardBrown company, specializes in online marketing effectiveness research
- Responsible for producing online surveys, developing research data interface set-up, data modeling and analyses, and result presentations for various clients
- Performed QA on surveys, data setups, pivot tables and various tools to ensure accuracy as well as to keep high delivery standards
- Provided timely executable solutions in the event of inconsistencies in the survey and data to ensure the quality of clients' campaigns
- Processed clients' desired analyses into queries and presented them in an easy-to-understand format using texts, graphics and PowerPoint presentations by working closely with multiple research teams in the NYC and San Francisco offices
- Trained and guided beginning Data Specialists and Interns

Summer Intern Summer 2007

Gneiss Software Inc., Troy, NY

• Conceived and presented to the proprietors a comprehensive marketing plan for an industry data-mining software package product (B2B product), and a business plan for a touch-screen computer product targeted toward women

MBA Intern Winter 2006

Bassac Orchid (a JWT Associate), Phnom Penh, Cambodia

- Conducted a primary and secondary consumer insight study of the local beer market
- Produced a result report and presentation for use by the General Manager and Regional Planner in a business pitch to Angkor Beer

Account Manager 2004-2006

BatesAsia (a WPP agency), Phnom Penh, Cambodia

- Led and directly supervised two subordinates in the account management of the Group's largest account the MobiTel group
- Managed the account brand communication strategy, planning, brand activities and implementation, by working closely with the creative, planning, production, and media teams
- Ensured high quality of executed deliveries and compliance with the brands by practicing a thorough QA system across departments
- Maintained and reinforced client's brand leadership in the market through initiatives for brand activities and strategic promotions
- Exercised a leading role in the strategy team working toward restrategizing and repositioning of the clients' wireless brands
- Administered the timely roll-out of the new branding for Cellcard across platforms and media at both consumer and supplier levels
- Provided ongoing support and guideline to the design firm (Fitch) in the project to revamp the client's headquarters to reflect the new brand strategy
- Visualized and authored web pages and contents for a rebranded Internet service TeleSurf
- Honored and awarded the Group's Best Account Service Person of the Year, 2005-2006

Senior Account Executive 2003-2004

141 Worldwide (a WPP agency), Phnom Penh, Cambodia

- Worked directly with the Account Director on the management of the company's main account British American Tobacco
- Ensured timely and effective execution of all brand activities
- Attained an outstanding achievement of a 35% increase in sales for the client's 555 State Express Lights product (the brand's first-ever rocket jump in sales)
- Assisted with business pitches when required by the General Manager
- Promoted to Account Manager at the Group's sister company, BatesAsia

# **Marketing Executive**

2002-2003

Nestle, Phnom Penh, Cambodia

- Recruited as a management trainee
- Charged with the opening and setting up of a new consumer touch-point: the Nestle Consumer Service Centre
- Pioneered and managed the activity plan for the Nestle Consumer Service Centre, including running the Consumer Education Programs, in-house research projects, and brand activities
- Conducted research and consumer education programs at the Center, with coordination with the regional office in Thailand
- Supervised a nutrition specialist to ensure quality service and accurate responses to consumers' questions and comments through a leading Magazine column and a TV talk show
- Trained and guided a data intern to formulate and maintain a system of consumer database the company's first consumer database for strategic and tactical use

## PEER-REVIEWED JOURNAL PUBLICATIONS

Eng, S., & Woodside, A.G., (2012). Configural analysis of the drinking man: Fuzzy-set qualitative comparative analyses. *Addictive Behaviors*, 37(4), 541-543.

#### **WORKING PAPERS**

Eng, S. & Dholakia, N. Action research: Opening new spaces for marketing inquiry. Preparing for submission.

Dholakia, R.R., Eng, S. & Arruda Filho, E. J.M. *Consumer preferences for hybrid technology products*. 3 studies completed. Preparing manuscript.

Eng, S. & Leonard, H. *Atrocity: Coping with loss among the surviving generation*. Qualitative data collected. Preparing manuscript.

## REFEREED CONFERENCE PRESENTATIONS AND PROCEEDINGS

- Eng, S. (2012, July). *Visiting methodologies used in Consumer Research*. Paper presented at the Fifth International Colloquium on Business and Management (ICBM) Conference, Bangkok, Thailand.
- Eng, S. (2011, October). *Variety-seeking behavior on Facebook*. Paper presented at the annual research summit of the Direct Marketing Educational Foundation, Boston, MA.
- Eng, S. & Leonard, H. (2011, May). *Telling the Cambodian story: The role of possessions in identity (re)construction*. Paper presented at the international colloquium of "Cambodia from then to now: Memory and plural identities in the aftermath of genocide" project of Concordia University and the Montreal Life Stories Project, Montreal, Canada.
- Eng, S. (2011, April). *Household income effect on consumer's price perception of frequency versus depth price discount strategy*. Paper presented at the annual conference of the Northeast Decision Science Institute, Montreal, Canada.
- Eng, S. (2011, April). Online consumer's perceived value: Revisiting the Perceived Value (PERVAL) scale with online consumers. Paper presented at the annual conference of the Northeast Decision Science Institute, Montreal, Canada.

#### RESEARCH INTERESTS

Consumer Decision Quality, Health Care Decisions, Consumer Financial Decisions, Technology Products, Information Presentation, Consumer Behavior in New Media, Culture & Consumer Identity

#### SELECTED PH.D. COURSEWORK

#### Content Area Seminars

Behavioral Foundations in Marketing Dr. Ruby R. Dholakia Dr. Daniel A. Sheinin **Brand Seminar Communication Theory** Dr. Geoffrey B. Leatham Consumer Culture Theory Dr. Hillary A. Leonard Knowledge Systems Dr. Deborah E. Rosen Marketing Strategy Dr. Daniel A. Sheinin **Price Seminar** Dr. Albert J. Della Bitta Social Psychology Dr. Mark D. Wood

#### Research Method Seminars

Doctoral Research Methods in Marketing

Experimental Design

Methods in Psychology Research & Experimental Design

Multivariate Methods

Qualitative Research Methods

Structural Equation Modeling

Dr. Arch G. Woodside

Dr. Robert G. Laforge

Dr. Joseph S. Rossi

Dr. Lisa L. Harlow

Dr. Nikhilesh Dholakia

#### Practicum

Teaching Practicum
Instructional Development Workshop
Practicum in Business Research

# FELLOWSHIPS, HONORS, AND GRANTS

Dr. Charles Hickox

Dr. Shaw K. Chen

Dr. Bette L. Erickson

2014	Dean's Conference Travel Grant, \$1,920	
2014	Graduate Student Association Scholarship Travel Grant, \$500	
2013	Marketing Management Association Doctoral Consortium Fellow	
2013	Dean's Conference Travel Grant, \$1,000	
2012	Dean's Conference Travel Grant, \$1,000	
2012	Graduate Student Association Scholarship Travel Grant, \$500	
2011	Research paper selected for showcasing at the University-wide academic research	
	achievement Discovery@URI, April 13, 2011. Eng, S. & Leonard, H. (2011). Telling	
	the Cambodian story: The role of possessions in identity (re)construction.	
2011	Dean's Conference Travel Grant, \$1,000	
2009-2013	Ph.D. Graduate Teaching Assistantship (full tuition scholarship and living stipend)	
2006-2009	Fulbright Fellowship	
2008	Donald Rivers Memorial Prize, Outstanding MBA Strategy Project	
2007	Global Innovation Delegate to Virginia International University MBA Program	
2006-2007	Lally Dean's Fellowship (full tuition scholarship)	
2001	Chancellor's Commendation Award for "academic achievement and community	
	contribution"	

## ACADEMIC AND PROFESSIONAL SERVICE

- **Reviewer**, European Marketing Academy Conference (EMAC) 2014 (June 3-6, Valencia, Spain)
- **Reviewer**, European Association for Consumer Research (EACR) 2013 Conference (July 4-7, Barcelona)
- Senator, Graduate Student Association, URI, 2012-2014
- Graduate Student Representative, Teaching Effectiveness Committee, URI, 2013
- **Graduate Student Representative**, Honors Program and Visiting Scholars Committee, URI, 2012
- Marketing and Outreach Committee Member, URI Graduate Conference 2013
- Success Chair, Graduate Management Students Association, RPI, 2006-2008
- Media Officer, Overseas Students Association, University of Canberra, 2001
- Leader, University of Canberra Orientation Week, 2001
- Women's Officer, National Liaison Committee ACT Branch, Canberra, Australia, 2001
- **Buddy Co-leader**, Buddy Program, University of Canberra, 2000

## PROFESSIONAL AFFILIATIONS

- Marketing Management Association, Member
- Direct Marketing Educational Foundation, Member
- Northeast Decision Science Institute, Member
- Fulbright Alumni Association, Member
- Australian Alumni Association of Cambodia, Member

## STATISTICAL / SURVEY SOFTWARE PROFICIENCY

- Survey Software: Qualtrics, SurveyMonkey, Amazon Mechanical Turk
- Statistical Software: SPSS, EQS

# LANGUAGE PROFICIENCY

• English (fluent) • Khmer (native) • French (beginner) • Thai (intermediate)

## REFERENCES

#### Dr. Ruby R. Dholakia

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#### Dr. Nikhilesh Dholakia

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#### Dr. Mark D. Wood

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#### Dr. Patricia M. Burbank

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