# Avatars and organizational knowledge sharing

DD Fehrenbacher, M Weisner

Year:2024

<https://www.sciencedirect.com/science/article/pii/S0167923624000782>

## Abstract

Abstract  
We study how organizational knowledge sharing behavior is affected by avatar use during computer-mediated communication (CMC) with an unknown co-worker. Experimental results from two ethnically different samples provide theory-consistent evidence that outgroup discrimination—manifested as refusal to share knowledge—can get magnified in the ‘virtual world’ when avatars are used for self-representation. In supplemental analysis, we use eye-tracking data to provide preliminary evidence for behavioral differences—in terms of gaze fixation—when knowledge sharing requests accompanied by avatar profiles as opposed to photo profiles are processed and further explore how individuals' choice of using avatars vs. photographs for their online profile affects their co-workers' perception. Our study contributes to understanding cooperative organizational behavior in the virtual space. Managing cooperative organizational behavior in the virtual space is becoming increasingly important as digital work further penetrates contemporary work arrangements.

# Emotional expressions of care and concern by customer service chatbots: Improved customer attitudes despite perceived inauthenticity

J Zhang, J Lu, X Wang, L Liu, Y Feng

Year:2024

<https://www.sciencedirect.com/science/article/pii/S0167923624001477>

## Abstract

Abstract  
In customer service, emotional expressions by chatbots are considered a promising direction to improve customer experience. However, there is a lack of comprehensive understanding of how and when chatbots' emotional expressions improve customer attitudes. Although chatbots' emotional expressions of care and concern may feel inauthentic to customers in the inferential path, which can negatively affects customer attitudes, we propose that the positive effect of the affective reactions path can result in a positive effect on customer attitude based on the dual-path view of Emotions as Social Information (EASI). The relative strengths of the two EASI paths can be moderated, and we explored the moderating effects of rational thinking styles (information processing in EASI) and beliefs in computer emotion (perceived appropriateness in EASI). According to EASI, situation can affect the meaning of emotions, so we conducted experiments in two situations. With chatbot identity disclosure, we found that the chatbot's emotional expressions reduce customers' perceived authenticity (reflecting the inferential path in EASI) but ultimately improve customer attitudes. Belief in computer emotions and rational thinking style moderated the negative relationship between emotional expressions and authenticity. With chatbot identity non-disclosure, the chatbot's emotional expressions still improve customer attitudes but with no effect on authenticity. Because there is high likelihood of chatbot identities being discovered by customers, this finding of the moderating effect of perceived humanness on authenticity is highly relevant. Our findings make important contributions to research on computer emotion and service authenticity.

# Multi-criteria evaluation of health news stories

E Zifla, BE Rubini

Year:2024

<https://www.sciencedirect.com/science/article/pii/S0167923624000204>

## Abstract

Abstract  
The proliferation of digital and social media technologies has enabled quick and wide dissemination of news stories and press releases about new medical treatments. Evaluating these stories is difficult for two reasons. First, these stories are often not completely true or false. A nuanced approach that considers different aspects of these stories (e.g., the presence of inflated claims, suppression of risks associated with the treatment or withholding other essential information) is more appropriate for evaluation. Second, evaluating the quality and completeness of the arguments in the stories is costly and requires expertise in the relevant medical field, which laypeople do not have. To address this problem, in this study, we train different machine learning models on multi-criteria expert evaluations for health news stories about new medical treatments and compare their performance. We then compare the machine learning model evaluations to laypeople evaluations. We find that machine learning models overall outperform laypeople, who have a propensity to overestimate the comprehensiveness of the claims. Our machine learning models employ multi-criteria evaluation, which is different from most previous studies that evaluate news stories on whether they are true or false. We conclude by discussing the implications of this study for consumers of health news stories disseminated via social media.

# Relative effects of the different bundles of web-design features on intentions to purchase experience products online

SHJ Yoo, M Ozer, JD Xu

Year:2024

<https://www.sciencedirect.com/science/article/pii/S0167923624000046>

## Abstract

Abstract  
Selling experience products online is usually more challenging than selling search products. Addressing the calls for future research in the literature, we study how the different combinations of different web-design features can explain people's intentions to purchase experience products online by mitigating three different product uncertainties associated with such products. The results of a detailed experiment using artworks showed that combining expert opinions with product descriptions or experience simulation was more effective than combining product description and experience simulation. Moreover, unlike the findings reported in the literature concerning search products, this study showed that trust explained people's intentions to purchase experience products online more than perceived usefulness and perceived ease of use. Theoretically, we refine the product uncertainty model by demonstrating the differential effects of different product uncertainties regarding experience products. Practically, our study informs firms about the roles of different combinations of web-design features in selling experience products online.

# Trust and deception with high stakes: Evidence from the friend or foe dataset

X Chen, X Wang, L Spitzley, J Nunamaker

Year:2023

<https://www.sciencedirect.com/science/article/pii/S0167923623000726>

## Abstract

Abstract  
Many social interactions rely on the premise of mutual trust, but deception violates trust and poses risk. Empirically examining trust and deception, particularly in high-stakes situations, is challenging but essential for improving the research realism and generalizability. To address this difficulty, we study trusting and deceptive behaviors in a high-stakes situation by using a novel dataset created from an American game show, Friend or Foe (FoF). In the show, a contestant's reward was determined through a trust game modified from the prisoner's dilemma. We explore how numerous human behaviors including facial expressions, gaze, head pose, body motion, language, and socio-demographic attributes, were related to a contestant's trusting or deceptive decision. Using a data-driven approach, we find that the deceivers' (contestants who chose Foe) behavior featured a neutralized face, negative facial emotions, enhanced upper body motion, and language with a lower sense of immediacy and agreeableness. The contestants who chose to trust (chose Friend) exhibited opposite behavioral patterns. Socio-demographic factors such as age, height, and facial attractiveness were also associated with a contestant's choice. Combining multimodal information, machine learning classifiers could predict the contestant's choice with an accuracy about 25% greater than earlier reported human accuracy. We contribute to both trust and deception literature by examining the generalizability of trusting and deceptive behaviors to a new high-stakes scenario. We also add to the decision support literature by showing the superior predictive performances of combining behavioral and socio-demographic features. Furthermore, we contribute to the academic community by introducing the FoF dataset.

# Understanding active participation of online dating services: A mixed methods study

Q Chen, G Yun, J Lu, X Wang

Year:2023

<https://www.sciencedirect.com/science/article/pii/S0167923623000350>

## Abstract

Abstract  
Online dating has transformed the way people meet and start relationships. However, online dating platforms typically have many lurkers without active participation. Using a self-regulation framework, this paper aims to study users' active participation in online dating through a mixed methods study. We first conducted qualitative and quantitative investigations with a machine learning method to explore user active participation and its antecedents. We then developed a theoretical model and conducted a statistical analysis of the model. The empirical findings showed that service quality and trust significantly affected individual active participation in a dating site through attachments to the daters and services. The findings of the study contribute to the extant literature by analyzing user participation in online dating from an attachment perspective.

# Fraudulent review detection model focusing on emotional expressions and explicit aspects: investigating the potential of feature engineering

A Kumar, RD Gopal, R Shankar, KH Tan

Year:2022

<https://www.sciencedirect.com/science/article/pii/S0167923621002384>

## Abstract

Abstract  
Reading customer reviews before purchasing items online has become a common practice; however, some companies use machine learning (ML) algorithms to generate false reviews in order to create positive brand images of their own products and negative images of competitors' offerings. Existing techniques use review content to identify fraudulent reviewers; however, spammers become more intelligent, started to learn from their mistakes, and changed their tactics in order to avoid detection techniques. Thus, investigating fraudulent accounts' behaviour of generating fake negative or positive reviews for competitors or themselves and the necessity of ML classifiers to identify fraudulent reviews, is more important than ever. In this research, we present a novel feature engineering approach in which we (1) extract several “review-centric” and “reviewer-centric” features from a dataset; (2) combine the cumulative effects of features distributions into a unified model that represents overall behavior of the fraudulent reviewers; (3) investigate the role of effective data pre-processing to improve detection accuracy; and (4) develop a probabilistic approach to detect fraudulent reviewers by learning a novel M-SMOTE model over a derived balanced dataset and feature distributions, which outperforms other ML models. Our study contributes to the literature on digital platforms and fraudulent review detection with significant managerial and theoretical implications through these novel findings.

# Power structure builds gamer loyalty

TL Huang, CI Teng, SI Tai, H Chen, AR Dennis

Year:2022

<https://www.sciencedirect.com/science/article/pii/S0167923621002062>

## Abstract

Abstract  
Online games offer substantial business opportunities, fueling intense competition among game makers. To build gamer loyalty, a critical challenge for game makers is preventing gamers' misbehaviors that annoy other gamers. Such challenges should be considered when game makers are making their design decisions and resource allocation decisions. We contend that building in-game relational cohesion should be an effective means of reducing such behaviors and strengthening loyalty. We also extend relational cohesion theory (RCT) by challenging the assumption that only equal power helps form relational cohesion in one-on-one contexts. In contrast, unequal power may provide an alternative means of enhancing relational cohesion in large groups of users (e.g., the entire user population). This study is the first to introduce and explore how unequal power—a novel and critical element of power structure—forms relational cohesion and strengthens online gamer loyalty. This study uses both behavioral-continuous and perceptual-anchored scales to collect responses from 1003 online gamers. Theoretically, this study widens the applicability of RCT from one-on-one contexts to one-to-many contexts. Practically, this study can help game makers make design and resource allocation decisions to use unequal power, thus effectively building gamer loyalty.

# Regression imputation optimizing sample size and emulation: Demonstrations and comparisons to prominent methods

GF Templeton, M Kang, N Tahmasbi

Year:2021

<https://www.sciencedirect.com/science/article/pii/S0167923621001342>

## Abstract

Abstract  
Missing input values weaken the ability of information systems (IS) researchers to make calculations, thereby reducing effective sample sizes and statistical power. Such technical problems with data cascade into scientific limitations resulting in the neglect of social and economic issues. Therefore, extensive missing values in data forces researchers to make crucial decisions, such as whether to impute and if so, what strategy to use. This study presents a single imputation approach that integrates and extends best practices for mitigating the effects of missing values. Using an array of missing value situations, we illustrate the Regression Imputation Optimizing Sample Size and Emulation (RIOSSE) method. The approach involves the derivation of an imputation model for each low-sample variable that leverages information available in large-sample sized inputs within the same data source. RIOSSE derives imputation equations with two competing goals in mind: 1) statistical power and 2) emulation. Direct comparisons demonstrate that RIOSSE is superior to three prominent multiple imputation methods (K-Nearest Neighbor, missForest, and LASSO) in two criteria each for achieving statistical power (parsimoniousness and sample size) and emulation (predictiveness and content validity). Further, 5-fold cross validation validated the head-to-head goal criteria comparisons. The paper contributes 1) a description of the RIOSSE method, 2) new imputation performance metrics and visualizations, 3) comparisons of our proposed method to three prominent multiple imputation methods, and 4) specified imputation models for 30 commonly used inputs to firm performance calculations.

# Deep learning for detecting financial statement fraud

P Craja, A Kim, S Lessmann

Year:2020

<https://www.sciencedirect.com/science/article/pii/S0167923620301767>

## Abstract

Abstract  
Financial statement fraud is an area of significant consternation for potential investors, auditing companies, and state regulators. The paper proposes an approach for detecting statement fraud through the combination of information from financial ratios and managerial comments within corporate annual reports. We employ a hierarchical attention network (HAN) to extract text features from the Management Discussion and Analysis (MD&A) section of annual reports. The model is designed to offer two distinct features. First, it reflects the structured hierarchy of documents, which previous approaches were unable to capture. Second, the model embodies two different attention mechanisms at the word and sentence level, which allows content to be differentiated in terms of its importance in the process of constructing the document representation. As a result of its architecture, the model captures both content and context of managerial comments, which serve as supplementary predictors to financial ratios in the detection of fraudulent reporting. Additionally, the model provides interpretable indicators denoted as “red-flag” sentences, which assist stakeholders in their process of determining whether further investigation of a specific annual report is required. Empirical results demonstrate that textual features of MD&A sections extracted by HAN yield promising classification results and substantially reinforce financial ratios.

# The influence of conversational agent embodiment and conversational relevance on socially desirable responding

RM Schuetzler, JS Giboney, GM Grimes…

Year:2018

<https://www.sciencedirect.com/science/article/pii/S0167923618301404>

## Abstract

Abstract  
Conversational agents (CAs) are becoming an increasingly common component in a wide range of information systems. A great deal of research to date has focused on enhancing traits that make CAs more humanlike. However, few studies have examined the influence such traits have on information disclosure. This research builds on self-disclosure, social desirability, and social presence theories to explain how CA anthropomorphism affects disclosure of personally sensitive information. Taken together, these theories suggest that as CAs become more humanlike, the social desirability of user responses will increase. In this study, we use a laboratory experiment to examine the influence of two elements of CA design—conversational relevance and embodiment—on the answers people give in response to sensitive and non-sensitive questions. We compare the responses given to various CAs to those given in a face-to-face interview and an online survey. The results show that for sensitive questions, CAs with better conversational abilities elicit more socially desirable responses from participants, with a less significant effect found for embodiment. These results suggest that for applications where eliciting honest answers to sensitive questions is important, CAs that are “better” in terms of humanlike realism may not be better for eliciting truthful responses to sensitive questions.

# Press accept to update now: Individual differences in susceptibility to malevolent interruptions

EJ Williams, PL Morgan, AN Joinson

Year:2017

<https://www.sciencedirect.com/science/article/pii/S0167923617300404>

## Abstract

Abstract  
Increasingly, connected communication technologies have resulted in people being exposed to fraudulent communications by scammers and hackers attempting to gain access to computer systems for malicious purposes. Common influence techniques, such as mimicking authority figures or instilling a sense of urgency, are used to persuade people to respond to malevolent messages by, for example, accepting urgent updates. An ‘accept’ response to a malevolent influence message can result in severe negative consequences for the user and for others, including the organisations they work for. This paper undertakes exploratory research to examine individual differences in susceptibility to fraudulent computer messages when they masquerade as interruptions during a demanding memory recall primary task compared to when they are presented in a post-task phase. A mixed-methods approach was adopted to examine when and why people choose to accept or decline three types of interrupting computer update message (genuine, mimicked, and low authority) and the relative impact of such interruptions on performance of a serial recall memory primary task. Results suggest that fraudulent communications are more likely to be accepted by users when they interrupt a demanding memory-based primary task, that this relationship is impacted by the content of the fraudulent message, and that influence techniques used in fraudulent communications can over-ride authenticity cues when individuals decide to accept an update message. Implications for theories, such as the recently proposed Suspicion, Cognition and Automaticity Model and the Integrated Information Processing Model of Phishing Susceptibility, are discussed.

# Adapting sentiment lexicons to domain-specific social media texts

S Deng, AP Sinha, H Zhao

Year:2017

<https://www.sciencedirect.com/science/article/pii/S016792361630183X>

## Abstract

Abstract  
Social media has become the largest data source of public opinion. The application of sentiment analysis to social media texts has great potential, but faces great challenges because of domain heterogeneity. Sentiment orientation of words varies by content domain, but learning context-specific sentiment in social media domains continues to be a major challenge. The language domain poses another challenge since the language used in social media today differs significantly from that used in traditional media. To address these challenges, we propose a method to adapt existing sentiment lexicons for domain-specific sentiment classification using an unannotated corpus and a dictionary. We evaluate our method using two large developing corpora, containing 743,069 tweets related to the stock market and one million tweets related to political topics, respectively, and five existing sentiment lexicons as seeds and baselines. The results demonstrate the usefulness of our method, showing significant improvement in sentiment classification performance.

# Manipulative imputation in distributed decision support settings: the implications of information asymmetry and aggregation complexity

N Malekovic, J Sutanto, L Goutas

Year:2016

<https://www.sciencedirect.com/science/article/pii/S016792361630015X>

## Abstract

Abstract  
According to earlier research, distributed communications are susceptible to deception. Our study complements the existing works by analyzing group members' attempts to manipulate group decisions supported by distributed communications. Experimentally, we examined the impact of two systemic features of distributed decision support on the group member's manipulative imputation. First, we analyzed the member's manipulative imputation for information asymmetry. Second, we analyzed this relationship for the moderating effect of decision rule complexity. Both of these features are structural properties of aggregating information exchange. We confirmed several effects: An increase in the asymmetry of information aggregating into a group outcome increases the member's manipulative tendency. This increase also increases the effectiveness of the member's manipulative imputation. However, the complexity of a decision rule decreases both of these effects. Given the information asymmetry, complexity of issues under group members' consideration can authenticate their disclosures. We point out the theoretical relevance and practical implications of our findings.

# Harmonized authentication based on ThumbStroke dynamics on touch screen mobile phones

L Zhou, Y Kang, D Zhang, J Lai

Year:2016

<https://www.sciencedirect.com/science/article/pii/S0167923616301567>

## Abstract

Abstract  
The pervasive and prevalent use of touch screen mobile phones in both work and daily life has generated more and more private and sensitive information on those devices. Accordingly, there is an ever-increasing need to improve the security of mobile phones. Recent advances in mobile user authentication technologies mainly focus on entry-point authentication. Although post-log-in continuous authentication has attracted increasing attention from researchers, none of the previous studies addressed mobile user authentication at both stages simultaneously. In addition, extant authentication systems are subject to the common trade-off between security and usability. To address the above limitations, we propose Harmonized Authentication based on ThumbStroke dynamics (HATS) that supports both entry-point and post-log-in mobile user authentication. HATS integrates password, gesture, keystroke, and touch dynamics-based authentication methods to address the vulnerabilities of individual methods to certain security attacks. Moreover, HATS supports one-handed thumb stroke-based interaction with touch screen mobile phones to improve the usability of authentication systems. We empirically evaluated HATS through controlled lab experiments. The results provide strong evidence that HATS improved both security and usability of mobile user authentication compared with keystroke dynamics based user authentication.

# Trust and understanding in face-to-face and online negotiations

Y van der Toorn, P van der Wijst, D Damen

Year:2015

<https://link.springer.com/chapter/10.1007/978-3-319-21536-5_4>

## Abstract

# Social structural behavior of deception in computer-mediated communication

J Pak, L Zhou

Year:2014

<https://www.sciencedirect.com/science/article/pii/S0167923613002236>

## Abstract

Abstract  
Deception essentially takes place in social interaction. While deception has been studied from the perspective of interpersonal interaction, little is known about social structural characteristics of deceptive communication. To fill the knowledge gap, this research investigates deception behavior in computer mediated communication (CMC) via the lens of social structure by answering the questions of how one deceiver socially interacts with multiple receivers and what structural characteristics can be used to delineate deception in CMC. To this end, we first conceptualize deception in terms of social structure by drawing on the interpersonal deception and social network theories. We then propose a model of structural behaviors of deception in CMC that consists of three components: centrality, cohesion, and similarity, followed by an empirical evaluation of the model with real-world data collected from a game website. The findings of this study provide new evidence that deception is a strategic activity where the deceiver juggles between the dual goals of promoting his or her deceptive agenda and avoiding detection.

# So close yet no agreement: the effects of threats to self-esteem when using instant messaging and audio during seller–buyer negotiations

RB Cooper, NA Johnson

Year:2014

<https://www.sciencedirect.com/science/article/pii/S0167923613002005>

## Abstract

Abstract  
People negotiate with the goal of reaching agreement. However, there are times when reaching agreement may be well within their grasp but it is not realized and the process ends with a loss of benefits for the negotiators. We use self-esteem theory to examine the influences that offers and comments have on this behavior when negotiators use an audio as opposed to instant messaging for communications. To help explain the moderating effects of these media, we use a theory on grounding. We find, for example, that when using instant messaging, the inability to reach agreement though negotiator offers are very close to each other is increased by initial offers containing relatively large concessions, by violations of reciprocity norms, and by critical comments.

# Should I send this message? Understanding the impact of interruptions, social hierarchy and perceived task complexity on user performance and perceived workload

A Gupta, H Li, R Sharda

Year:2013

<https://www.sciencedirect.com/science/article/pii/S0167923613000055>

## Abstract

Abstract  
Instant messenger technologies have become a common place for collaborative work and group decision support. Managers need to understand the potential impact of using IM in an organization. This paper contributes to the literature on instant messaging and primary task performance by theorizing and empirically testing how the interruption frequency of IM could intertwine with the social characteristics of IM communication and jointly influence user task performance and perceived workload. Using experimental design, we found that the effect of interruption on primary task completion time is dependent upon the hierarchical level of the message sender. Interruptions from a supervisor were found to reduce primary task completion time whereas interruptions from a peer increased primary task completion time. On the other hand, interruptions from a supervisor aggravated the negative impact of interruptions on task quality. Thus, it may be important for members and leaders of group decision teams to be more careful in the use of instant messaging with their peers and subordinates.

# Member use of social networking sites—an empirical examination

R Chen

Year:2013

<https://www.sciencedirect.com/science/article/pii/S0167923612002837>

## Abstract

Abstract  
In this research the authors examine members' voluntary use of social networking sites. Site use leads to the growth of social relationships, increased volume of site visits and traffic, and an accumulation of user generated contents; hence it is imperative to the success of social networking sites. Drawing upon Social Exchange Theory (SET), we develop a research model that examines the major determinants of member site use behavior through a cost-benefit framework. This model also investigates the key antecedents to site use that stem from website designs, personal traits, and personal beliefs in the environment. The research model has been validated through survey data collected from 222 social networking site users, and the analysis results provide strong support to the hypothesized relationships. The current study generates new knowledge on the literature of SET and social networking sites; it also sheds lights on site management for networking service providers.

# An experimental comparison of real and artificial deception using a deception generation model

Y Yang, MV Mannino

Year:2012

<https://www.sciencedirect.com/science/article/pii/S0167923612001054>

## Abstract

Abstract  
To develop a data mining approach for a deception application, data collection costs can be prohibitive because both deceptive data and truthful data are necessary to be collected. To reduce data collection costs, artificially generated deception data can be used, but the impact of using artificially generated deception data is not well understood. To study the relationship between artificial and real deception, this paper presents an experimental comparison using a novel deception generation model. The deception and truth data were collected from financial aid applications, a document centric area with limited resources for verification. The data collection provided a unique data set containing truth, natural deception, and boosted deception. To simulate deception, the Application Deception Model was developed to generate artificial deception in different deception scenarios. To study differences between artificial and real deception, an experiment was performed using deception level and data generation method as factors and directed distance and outlier score as outcome variables. Our results provided evidence of a reasonable similarity between artificial and real deception, suggesting the possibility of using artificially generated deception to reduce the costs associated with obtaining training data.

# A computational model for financial reporting fraud detection

FH Glancy, SB Yadav

Year:2011

<https://www.sciencedirect.com/science/article/pii/S016792361000134X>

## Abstract

Abstract  
A computational fraud detection model (CFDM) was proposed for detecting fraud in financial reporting. CFDM uses a quantitative approach on textual data. It incorporates techniques that use essentially all of information contained in the textual data for fraud detection. Extant work provides a foundation for detecting deception in high and low synchronicity computer-mediated communication (CMC). CFDM provides an analytical method that has the potential for automation. It was tested on the Management's Discussion and Analysis from 10-K filings and was able to distinguish fraudulent filings from non-fraudulent ones. CFDM can serve as a screening tool where deception is suspected.

# Identification of fraudulent financial statements using linguistic credibility analysis

SL Humpherys, KC Moffitt, MB Burns, JK Burgoon…

Year:2011

<https://www.sciencedirect.com/science/article/pii/S0167923610001338>

## Abstract

Abstract  
The strategic use of deceptive language in managerial financial fraud is investigated with linguistic cues extracted from 202 publicly available financial disclosures. Those crafting fraudulent disclosures use more activation language, words, imagery, pleasantness, group references, and less lexical diversity than non-fraudulent ones. Writers of fraudulent disclosures may write more to appear credible while communicating less in actual content. A parsimonious model with Naïve Bayes and C4.5 achieved the highest classification accuracy. Results support the potential use of linguistic analyses by auditors to flag questionable financial disclosures and to assess fraud risk under Statement on Auditing Standards No. 99.

# Predicting stock market returns from malicious attacks: A comparative analysis of vector autoregression and time-delayed neural networks

L Khansa, D Liginlal

Year:2011

<https://www.sciencedirect.com/science/article/pii/S016792361100039X>

## Abstract

Abstract  
With the growing importance of Internet-based businesses, malicious code attacks on information technology infrastructures have been on the rise. Prior studies have indicated that these malicious attacks are associated with detrimental economic effects on the attacked firms. On the other hand, we conjecture that more intense malicious attacks boost the stock price of information security firms. Furthermore, we use artificial neural networks and vector autoregression analyses as complementary methods to study the relationship between the stock market returns of information security firms and the intensity of malicious attacks, computed as the product of the number of malicious attacks and their severity levels. A major contribution of this work is the resulting time-delayed artificial neural network model that allows stock return predictions and is particularly useful as an investment decision support system for hedge funds and other investors, whose portfolios are at risk of losing market value during malicious attacks.

# Commercial Internet filters: Perils and opportunities

CH Chou, AP Sinha, H Zhao

Year:2010

<https://www.sciencedirect.com/science/article/pii/S016792360900222X>

## Abstract

Abstract  
Organizations are becoming increasingly aware of Internet abuse in the workplace. Such abuse results in loss of workers' productivity, network congestion, security risks, and legal liabilities. To address this problem, organizations have started to adopt Internet usage policies, management training, and filtering software. Several commercial Internet filters are experiencing an increasing number of organizational adoptions. These products mainly rely on black lists, white lists, and keyword/profile matching to filter out undesired web pages. In this paper, we describe three top-ranked commercial Internet filters – CYBERSitter, Net Nanny, and CyberPatrol – and evaluate their performance in the context of an Internet abuse problem. We then propose a text mining approach to address the problem and evaluate its performance using six different classification algorithms: naïve Bayes, multinominal naïve Bayes, support vector machine, decision tree, k-nearest neighbor, and neural network. The evaluation results point to the perils of using commercial Internet filters on one hand, and to the prospects of using text mining on the other. The proposed text mining approach outperforms the commercial filters. We discuss the possible reasons for the relatively poor performance of the filters and the steps that could be taken to improve their performance.

# Knowing your customers: Using a reciprocal relationship to enhance voluntary information disclosure

JC Zimmer, R Arsal, M Al-Marzouq, D Moore…

Year:2010

<https://www.sciencedirect.com/science/article/pii/S0167923609002127>

## Abstract

Abstract  
Customer information is increasingly being solicited by organizations as they try to enhance their product and service offerings. Customers are becoming increasingly protective of the information they disclose. The prior research on information disclosure has focused on privacy concerns and trust that lead to intentions to disclose. In this study, we tread new ground by examining the link between intent to disclose information and the actual disclosure. Drawing from social response theory and the principle of reciprocity, we examine how organizations can influence the strength of the link between intent and actual disclosure. We conduct an experiment using 15 pieces of information in a non-commercial context that examines voluntary individual information disclosure. Our results indicate that by implementing a reasoned dyadic condition where the organization provides reasoning on why they are collecting particular information; individuals are more likely to actually disclose more information. The results open up opportunities to go beyond intent, and study the actual disclosure of sensitive information. Organizations can use the concept of reciprocity to enhance the design of information acquisition systems.

# Decision support for determining veracity via linguistic-based cues

CM Fuller, DP Biros, RL Wilson

Year:2009

<https://www.sciencedirect.com/science/article/pii/S0167923608001991>

## Abstract

Abstract  
Deception detection is an essential skill in careers such as law enforcement and must be accomplished accurately. However, humans are not very competent at determining veracity without aid. This study examined automated text-based deception detection which attempts to overcome the shortcomings of previous credibility assessment methods. A real-world, high-stakes sample of statements was collected and analyzed. Several different sets of linguistic-based cues were used as inputs for classification models. Overall accuracy rates of up to 74% were achieved, suggesting that automated deception detection systems can be an invaluable tool for those who must assess the credibility of text.

# Media, affect, concession, and agreement in negotiation: IM versus telephone

NA Johnson, RB Cooper

Year:2009

<https://www.sciencedirect.com/science/article/pii/S0167923608001863>

## Abstract

Abstract  
The communication of affect, the exchange of offers, and the goal of reaching agreement are factors that play key roles in negotiation processes. Although instant messaging (IM) and phone are used for these processes, not much is known about how they influence these key factors. The present study is focused on this issue. By examining natural communication between negotiators who use these media, we find that computer mediation reduces both the amount of affect communicated and concession, which in turn decreases the likelihood of agreement. We also find that the efficacy of affect communicated is significantly reduced by computer mediation.

# A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents

DJ Kim, DL Ferrin, HR Rao

Year:2008

<https://www.sciencedirect.com/science/article/pii/S0167923607001005>

## Abstract

Abstract  
Are trust and risk important in consumers' electronic commerce purchasing decisions? What are the antecedents of trust and risk in this context? How do trust and risk affect an Internet consumer's purchasing decision? To answer these questions, we i) develop a theoretical framework describing the trust-based decision-making process a consumer uses when making a purchase from a given site, ii) test the proposed model using a Structural Equation Modeling technique on Internet consumer purchasing behavior data collected via a Web survey, and iii) consider the implications of the model. The results of the study show that Internet consumers' trust and perceived risk have strong impacts on their purchasing decisions. Consumer disposition to trust, reputation, privacy concerns, security concerns, the information quality of the Website, and the company's reputation, have strong effects on Internet consumers' trust in the Website. Interestingly, the presence of a third-party seal did not strongly influence consumers' trust.

# Typing or messaging? Modality effect on deception detection in computer-mediated communication

L Zhou, D Zhang

Year:2007

<https://www.sciencedirect.com/science/article/pii/S0167923607000644>

## Abstract

Abstract  
Motivated by the practical significance of deception detection to both organizations and individuals and the recent surge of research interests in deception in computer-mediated communication (CMC), this study examines whether and how the modality of communication media can influence deception detection in CMC. The results of empirical evaluations revealed that the messaging and the chatting modalities were more conducive to deception detection than the typing modality, and the chatting modality is the most preferred for the process of deception detection. Additionally, the effect of message veracity was also investigated. The findings raise broader issues about media properties for deception detection.

# A survey of trust and reputation systems for online service provision

A Jøsang, R Ismail, C Boyd

Year:2007

<https://www.sciencedirect.com/science/article/pii/S0167923605000849>

## Abstract

Abstract  
Trust and reputation systems represent a significant trend in decision support for Internet mediated service provision. The basic idea is to let parties rate each other, for example after the completion of a transaction, and use the aggregated ratings about a given party to derive a trust or reputation score, which can assist other parties in deciding whether or not to transact with that party in the future. A natural side effect is that it also provides an incentive for good behaviour, and therefore tends to have a positive effect on market quality. Reputation systems can be called collaborative sanctioning systems to reflect their collaborative nature, and are related to collaborative filtering systems. Reputation systems are already being used in successful commercial online applications. There is also a rapidly growing literature around trust and reputation systems, but unfortunately this activity is not very coherent. The purpose of this article is to give an overview of existing and proposed systems that can be used to derive measures of trust and reputation for Internet transactions, to analyse the current trends and developments in this area, and to propose a research agenda for trust and reputation systems.

# Customer self-service systems: The effects of perceived Web quality with service contents on enjoyment, anxiety, and e-trust

Y Hwang, DJ Kim

Year:2007

<https://www.sciencedirect.com/science/article/pii/S0167923606002132>

## Abstract

Abstract  
Trust (integrity, benevolence, and ability) is the central dimension of e-commerce systems adoption. Based on customer self-service systems and human–computer interaction logics, affective variables are important research issues to fully understand the relationship between information systems development and e-trust. In this paper, the effects of the perceived Web quality with service contents on e-trust, mediated by the website user's affective variables (enjoyment and anxiety), are tested and discussed (n = 325). Flow, social contract, social cognitive, resource allocation, and trust theories are discussed in the paper to support the proposed hypotheses. Theoretical and practical implications of these findings are also discussed.

# Empowering collaborative commerce with Web services enabled business process management systems

M Chen, D Zhang, L Zhou

Year:2007

<https://www.sciencedirect.com/science/article/pii/S0167923605000795>

## Abstract

Abstract  
Collaborative commerce (C-Commerce) is a set of technologies and business practices that allows companies to build stronger relationships with their trading partners through integrating complex and cross-enterprise processes governed by business logic and rules, as well as workflows. Business Process Management (BPM) is a key element of C-Commerce solutions for complex process coordination. It provides a mechanism to support e-businesses in modeling, deploying, and managing business processes that involve various applications with greater flexibility. Traditional BPM solutions often lack the capability to integrate external applications in that they have very limited support for interoperability. In recent years, Web services have emerged as a promising enabling technology for BPM in support of C-Commerce. Web services offer effective and standard-based means to improve interoperability among different software applications over Internet protocols. This paper aims to give an in-depth analysis of BPM and Web services in the context of C-Commerce. We propose an architecture for Web services enabled BPM in C-Commerce and provide technical insights into why Web services can enhance business process coordination. Finally, an implementation of a dynamic e-procurement application based on the proposed architecture is presented. With the advent of Web service standards and business process integration tools that support them, BPM systems enabled by Web services are empowering the development of more flexible and dynamic C-Commerce.

# Trust in health infomediaries

J Song

Year:2007

<https://www.sciencedirect.com/science/article/pii/S0167923606001606>

## Abstract

Abstract  
Health infomediaries play an increasingly critical role in providing support for people's health and wellness decisions. Effectiveness of health infomediaries depends on people's trust in them. In this paper, we conceptualize a comprehensive synthesis of trust antecedents that are relevant to health infomediaries based on trust research and the actor-network theory. The model is constructed to highlight the factors that play a significant role in trust formation in health infomediaries. The empirical test of the model indicates that web users' beliefs about the ability and benevolence of the health infomediary critically affect their behavior intentions. Moreover, testing has identified the dimensions of information and system quality as well as the trust signs that enhance each trust belief. Environmental factors also play a significant role in enhancing beliefs about the ability and integrity of the health infomediary. Our empirical results further show that an individual user's propensity to trust has a significant relationship with risk-related beliefs. Such trust and risk beliefs positively influence web users' behaviors. Our study shows the importance of context-specific modeling of trust in health infomediaries.

# A multi-objective genetic programming approach to developing Pareto optimal decision trees

H Zhao

Year:2007

<https://www.sciencedirect.com/science/article/pii/S016792360600217X>

## Abstract

Abstract  
Classification is a frequently encountered data mining problem. Decision tree techniques have been widely used to build classification models as such models closely resemble human reasoning and are easy to understand. Many real-world classification problems are cost-sensitive, meaning that different types of misclassification errors are not equally costly. Since different decision trees may excel under different cost settings, a set of non-dominated decision trees should be developed and presented to the decision maker for consideration, if the costs of different types of misclassification errors are not precisely determined. This paper proposes a multi-objective genetic programming approach to developing such alternative Pareto optimal decision trees. It also allows the decision maker to specify partial preferences on the conflicting objectives, such as false negative vs. false positive, sensitivity vs. specificity, and recall vs. precision, to further reduce the number of alternative solutions. A diabetes prediction problem and a credit card application approval problem are used to illustrate the application of the proposed approach.

# Predicting and explaining patronage behavior toward web and traditional stores using neural networks: a comparative analysis with logistic regression

WK Chiang, D Zhang, L Zhou

Year:2006

<https://www.sciencedirect.com/science/article/pii/S0167923604001903>

## Abstract

Abstract  
Web stores, where buyers place orders over the Internet, have emerged to become a prevalent sales channel. In this research, we developed neural network models, which are known for their capability of modeling noncompensatory decision processes, to predict and explain consumer choice between web and traditional stores. We conducted an empirical survey for the study. Specifically, in the survey, the purchases of six distinct products from web stores were contrasted with the corresponding purchases from traditional stores. The respondents' perceived attribute performance was then used to predict the customers' channel choice between web and traditional stores. We have provided statistical evidence that neural networks significantly outperform logistic regression models for most of the surveyed products in terms of the predicting power. To gain more insights from the models, we have identified the factors that have significant impact on customers' channel attitude through sensitivity analyses on the neural networks. The results indicate that the influential factors are different across product categories. The findings of the study offer a number of implications for channel management.

# The influence of communication mode and incentive structure on GDSS process and outcomes

R Barkhi, VS Jacob, H Pirkul

Year:2004

<https://www.sciencedirect.com/science/article/pii/S016792360300023X>

## Abstract

Abstract  
Given the orientation towards groups and the increase in the use of Group Decision Support Systems (GDSS) for distributed groups, we study communication mode and incentive structure to learn how these two factors influence group decision making. This paper compares the decision process and outcomes of groups that use a face-to-face GDSS (FGDSS) to those that use a distributed GDSS (DGDSS) operating under two different incentive structures. Results indicate that communication mode and incentive structure can influence the effects of each other. Hence, the appropriate design of incentive structures may be important to the success of virtual organizations.

# Countering the anchoring and adjustment bias with decision support systems

JF George, K Duffy, M Ahuja

Year:2000

<https://www.sciencedirect.com/science/article/pii/S0167923600000749>

## Abstract

Abstract  
Psychologists have identified several limitations to, and biases in, human decision-making processes. One such bias is the anchoring and adjustment effect, which has been demonstrated to be robust both inside and outside the experimental laboratory. Some decision support systems (DSS) have been designed to lessen the effects of decision-making limitations with promising results. This study tested a DSS designed to mitigate the effects of the anchoring and adjustment bias. The results show that anchoring and adjustment remains robust within the context of automated decision support. Implications that follow these results are offered.

# An empirical investigation of ODSS impact on individuals and organizations

R Santhanam, T Guimaraes, JF George

Year:2000

<https://www.sciencedirect.com/science/article/pii/S0167923600000890>

## Abstract

Abstract  
Organizational Decision Support Systems (ODSS) are large decision aiding systems, which provide organization-wide support for business processes. An ODSS shares some characteristics with other management support systems, but it has distinctly different objectives, scope and components. Its goal to support both the individual and organizational level decision processes may require unique development and management approaches. Several case studies have been conducted to address this issue. However, no systematic investigation has been conducted to determine factors that influence the successful development and use of ODSS. We designed this study to investigate ODSS impact both at the individual and organizational level based on several ODSS currently in use. Our findings indicate that in order to have a successful ODSS, management must pay attention to individual user needs and also have several organizational level coordinating mechanisms in place. User participation, support of management, and DSS system characteristics were found to be important determinants of ODSS success. Several factors at the organizational level, such as the use of steering committees and the extent of institutionalization of the system, were found to be correlated to ODSS success. The implications of these results for the management of ODSS and other organization-wide systems are discussed.