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CONSUMERS' RESPONSES TO NEW TECHNOLOGIES IN THE MARKETPLACE

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CONSUMERS' RESPONSES TO NEW TECHNOLOGIES IN THE MARKETPLACE

DISSERTATION

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the College of Business and Economics at the University of Kentucky.

By

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ABSTRACT

CONSUMERS' RESPONSES TO NEW TECHNOLOGIES IN THE MARKETPLACE

Chapter 1. This research examines whether the use of blockchain technology to back a brand's claims (i.e., blockchain augmented claims) influences consumer preference for sustainable products. Consumers are demanding higher levels of transparency from brands and are also showing keen interest in consuming sustainable products, which includes products that promote social, environmental and economic sustainability. Recent advancement in digital technology, specifically blockchain, is offering an opportunity for brands to meet both these consumer demands. In five laboratory studies, I demonstrate that blockchain augmented claims, as compared to traditional industry practices (i.e., use of third-party labels and brand's self-made claims), increases consumers' purchase intentions of sustainable products through consumers' confidence in a claim's legitimacy. Furthermore, this effect of blockchain augmented claims is stronger for consumers who are more (vs. less) concerned about the sustainable cause supported by the brand. Taken together, my theory and findings offer timely insights to brands that are planning to invest in blockchain technology.

Chapter 2. Ingratiation, a communication tactic used to increase interpersonal attractiveness, is a common persuasion tactic used to influence consumers into purchasing products. With the increasing access to AIs by the consumers, it is likely that ingratiation would be used by developers of AIs to influence consumers' behavior. The current research explores how an ingratiating AI affects users' evaluation of the AI's usefulness, characterized by users' willingness to accept recommendations from the AI and users' perceived accuracy of the AI. I find positive effects of ingratiation by an AI on a user's willingness to accept recommendations, and the perceived accuracy of the AI in making future predictions. Results also support that the positive effect of ingratiation occurs as it enhances perceived AI objectivity. Finally, I also find that the perceived human-likeness of the AI moderates this effect such that the positive effect of ingratiation occurs when an AI is perceived to be machine-like (vs. human-like).

Keywords: technology, experiment, artificial intelligence, blockchain technology

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Chapter 1. Blockchain Augmented Marketing Claims

Consumers' demand for more transparency from brands, especially owing to depleting trust levels, is on the rise (Amed et.al., 2019). In parallel, another growing trend is consumers' interest in consuming sustainable products, such as those that use fair labor practices (e.g., child labor free apparel) or are environmentally friendly (e.g., sustainably sourced products). A recent report by McKinsey revealed that about 66% of the people are willing to pay more for sustainable products, and over 37% of the people want to know product details from across the value chain, including information such as the origins of the materials used in a product and how it was manufactured (Amed et.al., 2019). Prior research suggests that when consumers are concerned for a social or environmental cause, they are more likely to seek additional information (Delmas, Nairn-Birch and Balzarova, 2013; Thøgersen, Haugaard and Olesen, 2010). However, not all consumers are equally concerned for all sustainability causes (Kristofferson, White and Peloza, 2014; Robinson, Irmak and Jayachandran, 2012). Currently, the most common industry practices for making product sustainability claims by brands are to use one of the 455 third-party certified labels (e.g., Dolphin Safe; Ecolabel Index, 2022), or to use brand's self-made claims on the product's packaging. However, more recently, blockchain technology has been increasingly adopted to track the product value chains of sustainable products (Amed et.al., 2019; Sodhi and Tang, 2019), potentially providing a novel tool to support sustainability claims.

Blockchain, defined as "a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network" (IBM, 2022), is a decade old digital technology that offers various benefits such as immutability,

transparency, and traceability of digital assets (e.g., information). All information is stored digitally in "blocks" and any new information for a particular asset is added to the block, thereby creating a chain of information that can be traced all the way back to its origin. Within this context, immutability refers to the inability of an individual entity, or person, to change the already stored information in the blocks. In the case of an error found in previously recorded data, a new addition to the block rectifying the previous error is created, thereby transparently showing evidence of change, without tampering with existing information (IBM, 2022). At any given time, any change of information on a blockchain is verified via consensus of participating entities in the network, and it is virtually impossible for any one entity to make changes falsely (see Appendix A1 for a more detailed overview of blockchain). For this reason, the use of blockchain by major brands is becoming prevalent, and leading scholars are calling for research that could uncover the implications of the use of blockchain for businesses and consumers (Cui et.al. 2021).

For instance, Nestle (2020) tracks where their coffee beans originate from, De Beers tracks its diamonds at the diamond mining company level to determine origin and authenticity (De Beers Group, 2022), and designer Martine Jarlgaard has also used the technology to track products from raw materials until they reach the consumers (Amed et.al., 2019). Moreover, Carrefour reported that blockchain helped in boosting sales of dairy products and fresh produce and attributed it to enhanced consumer trust due to digital tracking ability by the consumers (Thomasson, 2019). Similarly, Walmart has partnered with IBM and is also encouraging its farm-based product suppliers to adopt the blockchain technology as part of the Walmart Food Traceability Initiative (Walmart,

2018). A recent global survey from a sample of senior executives and practitioners conducted by Deloitte (2020) found that over 36% of the organizations were expected to invest $5 million or more in the next 12 months to develop its blockchain capabilities. Within the past four years, $1.7 billion has been invested in blockchain technology, and the expected value addition by blockchain is expected to reach around $176 billion by 2025 (Deloitte, 2022). In addition to the use of blockchain by major brands, recent publications in leading marketing journals have called for research on blockchain and related new technologies (Cui et.al., 2021; John and Scheer, 2021; Morewedge et.al., 2021; Suher, Szocs and Van Ittersum, 2021). Despite growing interest in blockchain, there is little or no empirical research that explores the implications of blockchain technology on businesses and consumers.

In this research, I study the implications of using blockchain technology to back sustainability claims (hereafter referred to as "blockchain augmented claims") versus traditional industry practices (i.e., use of third-party labels and brands' self-made claims), on purchase intentions as a function of consumers' concern for the sustainable cause. Based on recent work that has established multiple dimensions of sustainability (social, environmental and economic), I focus on social (e.g., child labor free) and environmental (e.g., sustainably sourced) sustainability in this research (Balderjahn et.al., 2018; Huang and Rust, 2011). I demonstrate that blockchain augmented claims lead to higher purchase intentions, and that consumers' confidence in the legitimacy of sustainability claims can explain these effects. In doing so, this research provides multiple contributions.

First, I introduce blockchain augmented claims to the marketing literature by providing one of the first responses to calls for research on the implications of blockchain within

marketing (Cui et.al., 2021; Suher et.al., 2021), and systematically demonstrating its effect on consumers' purchase intentions. I examine the intersection between blockchain as a new technology in marketing and sustainable consumption, and in doing do expand both literatures. I contribute to the existing literature examining positive effects of transparency by revealing how blockchain augmented claims lead to higher purchase intentions of sustainable products as compared to traditional industry practices. While recent scholarly work has identified positive effects of transparency from brands on consumers (Atefi et.al., 2020; Buell and Kalkanci, 2021; Buell, Kim and Tsay, 2017; Mohan, Buell and John, 2020), there has been no empirical research to my knowledge that compares blockchain augmented claims versus the traditional industry practice of using third-party labels (Manget, Roche and Münnich, 2009; White, Habib and Hardisty, 2019) to augment product sustainability claims.

Second, I identify the underlying process that explains the effect of blockchain augmented claims versus traditional industry practices on consumers' purchase intentions of sustainable products. I theorize and demonstrate that consumers' confidence in the legitimacy of sustainability claims serves as a novel mechanism driving the blockchain augmented claim effect. Specifically, I build upon existing research on brand signaling (Erdem and Swait, 1998; Kirmani and Rao, 2000; Mishra, Heide and Cort, 1998; Zhu, Billeter and Inman, 2012; Zhu and Zhang, 2010), and propose that consumers' confidence in a claim's legitimacy increases due to a brand's use blockchain augmented claims (vs. traditional industry practices), as blockchain technology's structure, and significant financial and relationship investments signal the brand's effort and ability to deliver on its promise.

Third, I identify consumers' concern for cause as a key moderator for the effect of blockchain augmented claims (vs. third-party labels) on consumers' purchase intentions and consumer's confidence in the legitimacy of sustainability claims. Specifically, I show that blockchain augmented claims, as opposed to third-party labels, lead to higher purchase intentions only when consumers are highly concerned about the sustainable cause. Prior research suggests that highly concerned consumers are more likely to be attuned to brands' greenwashing strategies (Chen and Chang, 2013; Delmas and Burbano, 2011; Wagner, Lutz and Weitz, 2009) and are generally expected to be more knowledgeable about sustainable products (Lin and Chang, 2012). I build upon these findings and argue that transparency into a brand's sustainability initiatives via blockchain augmented claims should alleviate highly concerned consumers' fear of false claims, leading to higher confidence in the legitimacy of sustainability claims, and subsequently higher purchase intentions, as the brand is able to show its commitment through visible efforts (Wang, Krishna and McFerran, 2017). Hence, I contribute to the literature on consumer activism and its effect on consumers' proenvironmental and prosocial choices (Cai and Wyer, 2015; Garvey and Bolton, 2017; Kaiser, Wolfing, and Fuhrer 1999; Kristofferson et.al., 2014; Lee, Winterich, and Ross, 2014; Robinson et.al., 2012; Winterich, Mittal and Ross, 2009).

Finally, findings from this research offer practical implications for brands that are sustainably responsible and aim to communicate their support for sustainable causes effectively. Findings suggest that increasing concern for the cause among the consumers strengthens the positive effect of blockchain augmented claims (vs. traditional industry practices) on purchase intentions. Thus, brands might consider investing in blockchain

technology, or use the conventional third-party labels, depending on the psychographic traits and current sustainability concerns of its consumer segments. In addition, although the present work focuses on sustainability claims, findings regarding the strengthening of claim legitimacy due to blockchain augmentation have implications for other marketing contexts wherein legitimacy plays a key role in consumer decision-making, such as the counterfeiting of luxury goods (Newman and Dhar, 2014) and artwork (Newman and Bloom, 2011), ingredient branding (Desai and Keller, 2002), country (Han et.al., 2021; Newman and Dhar, 2014) or ethnicity (Grier, Brumbaugh and Thorton, 2006; Zanette et.al., 2021) of origin, creator-customer relationships (Smith, Newman and Dhar, 2016), and for the emerging literature exploring blockchain-derived products such as Non-Fungible Tokens (NFTs; Pires, 2021; Takahashi, 2017). A more detailed description of the managerial implications of our research is presented in the General Discussion.

Theoretical Development

In this research, I focus on the implications of blockchain augmented claims versus traditional industry practices on consumers' purchase intentions of sustainable products as a function of consumers' concern for the sustainable cause. In developing the theoretical framework, I draw on existing literature on transparency, consumers' perception of brand signals, and consumers' sustainability consciousness.

Transparency in Sustainability Claims and Purchase Intentions

Existing work on transparency and information disclosure show positive effects for the disclosing entity (Atefi et.al., 2020; Buell et.al., 2017; Buell and Kalkanci, 2021; Carter and Curry, 2010; Collins and Miller, 1994; Marshall et.al., 2016; Mohan et.al., 2020). This is because transparency and disclosure, which is a key mechanism used to develop interpersonal relationships (Phillips, Rothbard and Dumas, 2009), can increase liking towards the discloser (Collins and Miller, 1994) and also enhance perceived legitimacy of the information disclosed (Egels-Zandén and Hansson, 2016). One key way in which businesses can implement transparent practices and reduce information asymmetry for the consumers is to use Operational Transparency, which refers to "how a firm reveals its operating processes to its customers" (Buell et.al., 2017). Prior research has shown that operational transparency can lead to higher perceived value of a firm's service by consumers (Buell and Norton, 2011; Buell et.al., 2017), and positively affect consumers' perception of the firm and purchase intentions (Buell and Kalkanci, 2021). The question arises – if consumers prefer transparency from brands, how are blockchain augmented claims any different from the traditional industry practices?

I argue that there are key differences between blockchain augmented claims and traditional industry practices that make blockchain augmented claims more transparent and effective in influencing consumers' purchase intentions. Blockchain's key elements that include immutability, traceability, and a distributed network of ledgers, make any information stored on blockchain technology tamper-proof (IBM, 2022), and highly transparent. For instance, any change in information stored on the blockchain network is

reflected in the form of an additional piece of information that can be traced by anyone (firms and consumers) using the unique blockchain ID associated with the information. For instance, Carrefour's Food Blockchain creates a database which comprises of the history of all exchanges between the entities within the supply chain (i.e., producers, distributors, processors, etc.) (Carrefour, 2022). With this level of transparency, a customer buying chicken at a Carrefour outlet can even access details about when the chicken in a particular box was born, how it was raised (e.g., cage free), the type of feed it consumed, and when it was processed and packaged in the box.

In contrast, existing research suggest mixed findings regarding the effectiveness of third-party labels as a medium to transparently communicate brands' claims to the consumers. On the one hand, prior research suggests that third-party labels (vs. brand's self-made claims) signal to a consumer that the brand conforms to the sustainability standards set by the certifying third-party (Darnall and Aragón-Correa, 2014) and reduces the perceived choice risk (Brach, Walsh and Shaw, 2018; Darnall, Ji and Vazquez-Brust, 2018). On the other hand, findings also suggest that consumers are not always aware of the third-party organizations (Darnall et.al., 2018; Thøgersen et.al., 2010) and that consumers cannot verify the information communicated via these labels, but can only act by depending on their level of trust in a label (Atkinson and Rosenthal, 2014). For instance, there exist numerous third-party organizations such as "Fairtrade", "Fair Trade Certified", "Best Aquaculture Practices" and "Whole Trade TM Guarantee" that focus on ensuring that the rights of the workers and the environment was protected in the product's supply chain (Ecolabel Index, 2022). Hence, I contend that traditional industry practices lack the benefits and level of transparency offered by blockchain augmented claims.

The Mediating Role of Consumers' Confidence in the Legitimacy of Sustainability Claims

Consumers generally use marketing cues or signals available as an indicator of a brand's ability to deliver on its promise (Erdem and Swait, 1998; Mishra et.al., 1998; Zhu et.al., 2012; Zhu and Zhang, 2010), especially when a consumer cannot assess the quality of a product, or verify the credibility of information, before making a purchase (Kirmani and Rao, 2000; Mishra et.al., 1998). I refer to consumers' confidence in the legitimacy of sustainability claims (claim's legitimacy hereafter) as consumers' belief that a brand's sustainability claims are valid, credible and authentic. I propose that the use of blockchain augmented claims (vs. traditional industry practices) will increase the claim's legitimacy based on the following reasons.

First, despite the apparent independent and unbiased nature of audits conducted before brands are authorized to use a third-party label (Delmas and Gergaud, 2021), evidence from the past suggests that "human" auditors are more susceptible to committing fraud and engage in unethical practices during the auditing process. For instance, the non-financial audits usually depict a relation between the auditors and their "paymasters" (i.e. the auditees) (O'Dwyer and Owen, 2007), who pay to get audited. The power of the paymasters to choose and pay one of the many auditing firms raises questions about the level of impartiality in the audit process (Prajogo, Castka, and Searcy, 2021). Other shortcomings of the audit process include lack of agreed upon standards between the third-party organizations (Nelson, Rueda and Vermeulen, 2018; Ramchandani, Bastani and Moon, 2020), unreliable audit standards and superficial implementation of compliance standards by brands (Boiral, 2012; Boström, 2015).

Second, consumers have been exposed to numerous high-profile corruption scandals about misuse of third-party labels (Counsell, 2019; Karni, 2019; Mouawad, 2015) that further signal the corruptibility of information communicated via such labels. For example, high profile investigations found that LG was guilty of deceiving its customers by selling high electricity consuming refrigerators despite displaying the approval of the well-known Energy Star third-party label (Mouawad, 2015), and Volkswagen fell short of the EPA approval emissions labels displayed on its vehicles (Hotten, 2015). Learning about such corrupt practices has increased consumers' fear of being misled and decrease their confidence in the claim's legitimacy (Wagner et.al., 2009). More generally, consumers have become increasingly skeptical of "greenwashing" on the part of companies, wherein non-sustainable practices are obfuscated or misrepresented to overstate sustainable behaviors on the part of a business (Chen and Chang, 2013; Cho and Taylor, 2020; Olsen, Slotegraaf and Chandukala, 2014). As a solution, digital technologies are being recommended to trace resources within the supply chain can reduce the amount of corruption and illegal activities committed by the personnel responsible for implementing the sustainable practices (Grant, Freitas and Wilson, 2021).

Third, blockchain augmented claims (vs. traditional industry practices) allow brands to concretely show their effort in delivering the brand's promise, and not just make a claim without verifiable evidence. Consumers are likely to perceive such visible evidence as brand's legitimate commitment to meet the sustainability goals (Egels-Zandén and Hansson, 2016; Fombrun and Shanley, 1990; Olsen et.al., 2014; Wang et.al., 2017). For instance, implementing a blockchain solution throughout the value chain is a

more complex and expensive undertaking as opposed to obtaining a license to use a third-party label or using self-made claims. Implementing a blockchain solution not only requires significant financial investment to purchase the technology (e.g. IBM Food Trust modules, real-time data collection devices) by all member firms in the blockchain network, but also requires significant investment in relationship building, whereby a consortium of firms work together to ensure transparent and accurate information is shared across the value chain (Cui et.al., 2021). Such costly cues provided by the brand are an effective strategy in signaling a brand's expertise and credibility as only the brands that can deliver on its promise would be willing to undertake such measures and benefit in the long-run. (Marshall et.al., 2016; Mishra et.al., 1998). For instance, Mishra et.al. (1998) found that brands can strengthen the bond with its customers by self-identifying as a high-quality provider via costly and non-salvageable investments. Thus, brands that are not capable of meeting customers' standards would not engage in such costly signaling. Finally, the immutable nature of information carried on a blockchain network should further increase consumers' confidence in claim legitimacy. Based on the discussion above, I hypothesize that:

> H1: A blockchain augmented claim (vs. a third-party label or a brand's self-made claim) will lead to higher purchase intentions of sustainable products.
>
> H2a: A blockchain augmented claim (vs. a third-party label or a brand's self-made claim), will increase consumer confidence in claim legitimacy.

H2b: Consumer confidence in claim legitimacy mediates the effect of a blockchain augmented claim (vs. a third-party label or a brand's self-made claim).

The Moderating Effect of Consumers' Concern for Cause

Consumers' concern for cause refers to the degree to which a person is oriented toward the sustainable cause being promoted by a brand (Dunlap and Jones, 2002; Lin and Chang, 2012). Building on research on consumer identity and sustainability-conscious consumers, I predict that consumers' concern for cause will play a moderating role on their purchase intentions and will also determine how confident they are in the legitimacy of a brand's sustainability claims.

Specifically, I argue that highly (vs. less) concerned consumers will prefer sustainable products more when brands make sustainability claims backed by blockchain, as opposed to traditional industry practices, and perceive higher claim legitimacy. In contrast, for consumers who are less concerned about the cause the effect will attenuate. I base my argument on the following findings. First, research has established that environmentally conscious consumers are more likely to be knowledgeable to about green products (Lin and Chang, 2012). Therefore, it is highly likely that they are also more attuned to a brand's greenwashing strategies (Chen and Chang, 2013; Cho and Taylor, 2020), and are more knowledgeable about mislabeling scandals (Counsell, 2019; Karni, 2019; Mouawad, 2015; Wagner et.al., 2009) and about the shortcomings of the auditing processes that license brands to use the third-party labels (Boiral, 2012;

Boström, 2015; Nelsen et.al., 2018; Ramchandani et.al., 2020). Such consumers, I predict, are more likely to positively respond to transparent and immutable legitimate information communicated via blockchain augmented claims.

Second, consumers who are highly concerned about a cause, are also more likely to seek additional information (Delmas et.al., 2013; Thøgersen et.al., 2010) and engage in behaviors consistent with their identity (Garvey and Bolton, 2017; Kristofferson et.al., 2014). Recent research has established that the extent to which consumers identify themselves with a cause affects their decisions and behavior in the marketplace. For instance, studies have shown that consumers who are conscious about the environment are more likely to engage in proenvironmental behavior (Kaiser et.al., 1999), and also to exhibit consistent behavior in subsequent purchase decisions (Garvey and Bolton, 2017). Moreover, extant research on consumers' identity has revealed that consumers are more likely to exhibit proenvironment and prosocial behaviors when it is congruent with their identity (Cai and Wyer, 2015; Kristofferson et.al., 2014; Lee et.al., 2014; Robinson et.al., 2012; Winterich et.al., 2009). For instance, when consumers' values align with an organization's values, consumers are more likely to continue engaging in meaningful support towards the cause (Kristofferson et.al., 2014). In addition, Robinson et.al. (2012) found that allowing consumers to choose the donation or cause, as opposed to when a brand chooses one on its own, led to greater consumer support towards the cause. Thus, sustainability-conscious consumers may differ in the relative importance they place on different sustainable causes (Simpson and Radford, 2014).

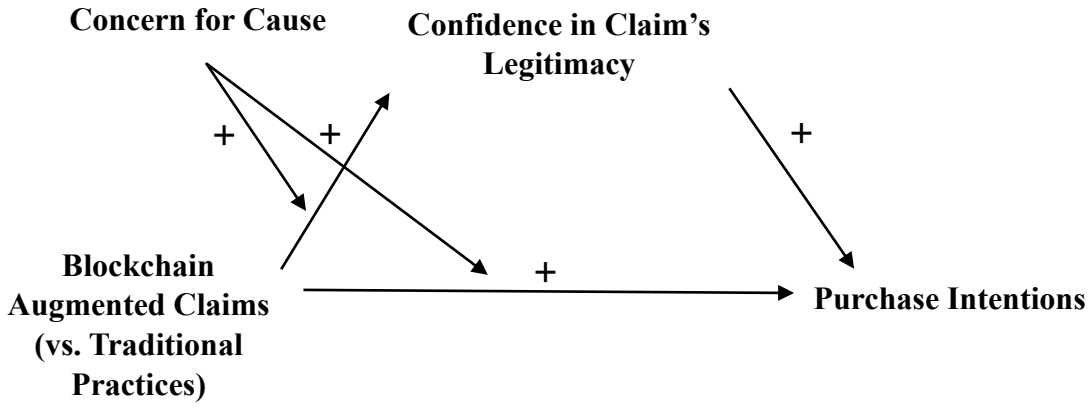
Therefore, I contend that blockchain augmented claims, as opposed to third-party labels, are well-suited to alleviate highly (vs. less) concerned consumers' fears about greenwashing and misleading claims through detailed, traceable and immutable information that shows how the brand meets the standards of a particular sustainable cause. Moreover, blockchain augmented claims signal the legitimacy of a brand's claims as brands show visible efforts towards meeting the sustainability goals (Fombrun and Shanley, 1990; Olsen et.al., 2014; Wang et.al., 2017). Consumers who are less concerned about a cause would have lower motivation to form perceptions about the brand's claims based on the signals of effort and commitment provided by the brands (Mishra et.al., 1998). For such consumers, a brand's support of a sustainable cause is more likely to come across as "greenwashing" (Chen and Chang, 2013; Cho and Taylor, 2020), or as mere persuasion tactic. Therefore, I hypothesize:

> H3: As consumer concern for the sustainable cause increases, the positive effect of a blockchain augmented claim (vs. a third-party label or a brand's self-made claim) on (a) purchase intentions and (b) consumer confidence in claim legitimacy will increase.

The full conceptual model is presented in Figure 1.

Figure 1.

Conceptual Model



Overview of Studies

I test my hypotheses in a series of five studies and also investigate the role of using a widely known third-party label organization's name in two follow up studies. Study 1A and 1B examine the influence of the claim source (i.e., blockchain augmented claims versus traditional industry practices of third-party labels and self-made claims) on consumers purchase intentions and reveal a positive effect of blockchain augmented claims. I test H1 using two dimensions of sustainability; social sustainability in study 1A, and environmental sustainability in study 1B. Study 2 explores and finds evidence for the mediating role of consumers' confidence in the legitimacy of sustainability claims using a similar design and procedure to study 1A, thereby supporting H2. Study 3 explores the moderating role of consumers' concern for cause (H3a), whereas study 4 tests the full conceptual model (H1-H3). In summary, these findings support my hypotheses and show that a blockchain augmented claim leads to higher purchase intentions of sustainable

products, and that the strength of this effect increases when consumers are concerned for the supported cause. Furthermore, two follow-up studies were conducted to test the role of using a widely known third-party organization label name and to test if the findings from studies 1-4 occur due to the novel technology, "blockchain", only, and if to explore if the blockchain augmented marketing claims' effects can also be found for other products that often have their legitimacy questioned.

Study 1

The objective of this study is to test the main effect of blockchain augmented claims, versus third-party labels and self-made brand claims, on consumers' purchase intentions. Consistent with H1, I anticipate that blockchain augmented claims will result in higher purchase intentions compared to either a claim backed by a third-party label or brand's self-made claim. In study 1A, I use a social sustainability cause (i.e., child labor free apparel), whereas in study 1B, I use an environmental sustainability cause (i.e., sustainable sourced chicken) to test the effect of the independent variables on purchase intentions.

In this study and in all following studies, I use novel third-party organization names to ensure that pre-existing attitudes towards known third-party labels do not confound the results (Kamins and Marks, 1991). While it could be argued that the results obtained in Studies 1-4 are a result of participants' lack of knowledge about the third-party labels used in the study, a pre-tested conducted with 312 undergraduate students (56.4% females; Mage = 21.3 years) at a large public university in USA confirmed the findings from the literature that show that consumers usually lack awareness of these

different third-party labels (Darnall et.al., 2018; Thøgersen et.al., 2010). Participants were shown the names of the third-party labels (see Table 1) in random order and were asked to indicate if they knew whether the third-party label organization was real or not (binary choices). Results revealed mixed patterns such that some real and widely used labels such as the Leaping Bunny Program, Dolphin Safe, and Forrest Stewardship Council were perceived to be "not real" by almost half of the participants, whereas other labels such as the Energy Star, Fair Trade and Rainforest Alliance were correctly indicated to be real by over 75% of the participants. Similar mixed patterns were observed for the real but lesser used labels. Interestingly, over 60% of the participants indicated that three out of the four self-created third-party label organizations were "real".

Table 1

Results from Pretest of Labels

Labels	Real	Not Real
Real and Widely Used Labels		
Leaping Bunny Program	52.20%	47.80%
Energy Star	78.80%	21.20%
Fair Trade	86.20%	13.80%
Rainforest Alliance	75.30%	24.70%
Dolphin Safe	48.10%	51.90%

Table 1 (continued)

Forest Stewardship Council	52.20%	47.80%
Real but Lesser Used Labels		
Marine Stewardship Council	61.90%	38.10%
Nordic Ecolabel	46.20%	53.80%
Certified Humane	73.40%	26.60%
ACMI	58.30%	41.70%
C.A.F.E Practices	52.60%	47.40%
National Chicken Council	34.90%	65.10%
Self-created Labels		
Alliance of Diamond Miners	42.30%	57.70%
Humane Dairy Council	60.90%	39.10%
Cobalt Miner's Association	64.10%	35.90%
National Apparel Association	60.90%	39.10%

Method (Study 1 A – Child Labor Free Apparel)

Three hundred and eighty-four undergraduate students participated (56% female, M_{age} = 20.10 years) in a 3 group (Claim source: blockchain augmented claim vs. third-party label vs. brand self-claim control) between-subjects design for course credit.

Procedure

Participants were asked to imagine that they were shopping for sportswear at a nearby store, and that they had come across a t-shirt that was manufactured in a country known for running sweatshops for multinational apparel brands. Participants then read a brief description of a sweatshop. Specifically, participants read, "A sweatshop is a workplace that often has poor working conditions, unfair wages, dangerous work conditions and child labor." Next, participants were told that as they evaluated the t-shirt, they read the following text printed on one of the tags, “This t-shirt was produced in a factory that is Child Labor Free”, followed by the claim source manipulation (based on a pretest described in Appendix A2). In the blockchain augmented claim (third-party label) condition, participants read that the claim was verified by blockchain technology (National Apparel Association) along with a brief description of the source. In the control condition, participants read that it was the brand making the claim, and no third-party certification was provided. See Appendix A2 for complete manipulation stimuli.

After reading the scenario, participants responded to a measure of purchase intentions: “How likely are you to buy the t-shirt?” (measured on a 7-point scale; 1 = Extremely unlikely, 7 = Extremely likely). Finally, participants responded to demographic questions (e.g., age, gender).

Results

Purchase Intention.

A one-way ANOVA revealed a significant effect of claim source on participants' purchase intention ($F(2, 381) = 14.07$, $p < .001$). As expected, planned contrasts show that participants' purchase intentions were higher in the blockchain augmented claim condition ($M = 5.06$, standard deviation [SD] = 1.56) as compared to the third-party label condition ($M = 4.61$, $SD = 1.63$; $t(253.75) = 2.28$, $p = .023$), as well as the control condition ($M = 3.95$, SD = 1.85; $t(246.03) = 5.20$, $p < .001$). The difference in purchase intention between participants in the third-party label and the control condition was also significant ($t(248.31) = 2.99$, $p = .003$).

Method (Study 1B – Sustainably Sourced Chicken)

Three hundred and forty-six undergraduate students participated (52.6% females; M_{age} = 20.53 years) in 3 group (Claim source: blockchain augmented claim vs. third-party label vs. control) between-subjects design for course credit.

Procedure

The study procedures and setup were similar to study 1A. Participants were asked to imagine that they are shopping for the week's groceries and while shopping for chicken, they come across a box with a claim that the chicken was sustainably sourced, and that the claim was backed by blockchain technology or the National Chicken Council (i.e., third-party) along with a brief description about the claim source. In the control

condition, no information about the claim source was provided. See Appendix A3 for complete manipulation stimuli and results from the pretest. After reading the scenario, participants responded to a measure of purchase intention: "How likely are you to buy the chicken?" (measured on a 7-point scale; 1 = Extremely unlikely, 7 = Extremely likely). Finally, participants responded to demographic questions.

Results

Purchase Intention

A one-way ANOVA revealed a significant effect of claim source on participants' purchase intention ($F(2, 343) = 3.57$, $p < .05$). As expected, planned contrasts show that participants' purchase intentions were higher in the blockchain augmented claim condition ($M = 5.16$; $SD = 1.38$) as compared to the third-party label condition ($M = 4.80$, $SD = 1.30$; $t(343) = 2.04$, $p = .042$), as well as the control condition ($M = 4.72$, $SD = 1.40$; $t(343) = 2.51$, $p = .012$). However, the third-party label and control condition were not significantly different.

Discussion

Results from study 1A and 1B find support for H1 and demonstrate that consumers are more likely to purchase a product when a brand makes social or environmental sustainability-related claims that are supported by blockchain technology. In study 2, I test H1 and H2 and explore the mediating role of consumers' confidence in the claim's legitimacy.

Study 2

The objective of this study is to test H1 and H2. Specifically, study 2 aims to replicate the findings from studies 1A and 1B, and also test the underlying process mechanism. The procedures and design of this study is similar to that of study 1A, except that in study 2 I introduce measures to assess consumer confidence in claim legitimacy.

Method

Four hundred and fifty-five participants from Amazon Mechanical Turk (57.1% females; M_{age} = 41.04 years) in a three group (Claim source: blockchain augmented claim vs. third-party label vs. control) between-subjects design for monetary compensation.

Procedure

Participants read one of three scenarios as presented in study 1A. After reading the scenario, participants responded to a measure of purchase intention: “How likely are you to buy the t-shirt?” (measured on a 7-point scale; 1 = Extremely unlikely, 7 = Extremely likely). Participants then responded to a 5-item scale to measure confidence in the claim’s legitimacy. Specifically, participants responded to items such as “"The claim that the t-shirt is manufactured in a child labor free facility is authentic/sincere/trustworthy /transparent/not fraudulent” on a 7-point scale (1 = Strongly disagree, 7 = Strongly agree). Finally, participants responded to demographic questions (e.g., age, gender).

Results

Purchase Intention

A one-way ANOVA revealed a significant effect of claim source on participants' purchase intentions ($F(2, 452) = 7.36$, $p < .001$). As expected, planned contrasts show that participants' purchase intentions were higher in the blockchain augmented claim condition ($M = 4.89$; $SD = 1.65$) as compared to the third-party label condition ($M = 4.46$, SD = 1.82; $t(292.52) = 2.13$, $p = .034$), as well as the control condition ($M = 4.10$, $SD = 1.90$; $t(302) = 3.88$, $p < .001$). These results support H1 and are consistent with the findings for blockchain augmented claims from Studies 1A and 1B. In addition, the difference between the third-party label and control condition was marginally significant ($t(306.95) = 1.70$, $p = .09$).

Confidence in claim's legitimacy

A one-way ANOVA revealed a significant effect of claim source on claim's legitimacy ($\alpha = .96$; $F(2, 452) = 12.94$, $p < .001$). As expected, planned contrasts show that participants' perceptions of claim's legitimacy were higher in the blockchain augmented claim condition ($M = 4.88$; $SD = 1.33$) as compared to the third-party label condition ($M = 4.48$, $SD = 1.24$; $t(452) = 2.51$, $p = .012$), as well as the control condition ($M = 4.09$, $SD = 1.48$; $t(452) = 5.09$, $p < .001$). These results directly support H2a. Additionally, third-party label and control conditions had a statistically significant difference ($t(452) = 2.56$, $p = .011$).

Process

PROCESS (Hayes, 2017) Model 4 was used to estimate the mediating pathway from claim source (third-party label as base condition) to the claim's legitimacy in determining the effect on purchase intention. Bootstrapping results confirmed a significant and positive indirect effect (Indirect Effect = .37; 95% CI = [.087, .66]) when comparing third-party label with blockchain augmented claim condition. Furthermore, using control as base condition, results also confirmed a significant and positive indirect effect (Indirect Effect = .74; 95% CI = [.44, 1.04]) when comparing the control condition with blockchain augmented claim condition. Together, these results support H2b by revealing that the effect of claim source on purchase intentions is mediated through claim's legitimacy. In addition, I also observed a significant and positive indirect effect (Indirect Effect = .37; 95% CI = [.085, .66]) when comparing the control condition with the third-party label condition.

Discussion

Study 2 replicates findings from studies 1A and 1B and provides direct support for H2. Specifically, I find that consumers report higher purchase intentions for a product when the claims about a brand's support for a sustainable cause are certified by blockchain technology (vs. traditional industry practices). In the next two studies, I explore how consumer concern for the supported sustainability cause can strengthen or attenuate the effect of blockchain augmented claims.

Study 3

The primary objective of study 3 is to test H3a. Specifically, I evaluate whether consumers' concern for cause moderates the effect of claim source on consumers' purchase intentions of sustainable products. Although the setup of the study is similar to studies 1 and 2, there are some key differences to note. First, I focus on comparing blockchain augmented claims with third-party labels only as findings from studies 1 and 2 are consistent with prior research that shows that brand's self-made claims are inferior to using third-party labels. Hence, I focus on comparing blockchain augmented claims with third-party labels only. Second, I use a diamond as the product of interest in this study to replicate the findings from studies 1 and 2 in the context of a different sustainability cause. Third, in this study I measure participants' concern for the supported sustainability cause to test if it moderates the effect of claim source on purchase intention.

Method

One hundred and ten undergraduates participated (24.5% females; M_{age} = 20.41 years) in a 2 group (Claim source: blockchain augmented claim vs. third-party label) between-subjects design, with a continuous measure of concern for cause for course credit.

Procedure

Participants were asked to imagine that they were shopping for an engagement ring with their partner and that they were looking at a particular diamond ring in a jewelry store. Participants read that the salesperson informs them that the diamond was mined in Africa and was acquired by the store from a wholesaler. Most importantly, the salesperson informs them that the diamond miners' human rights were protected while they worked at the mines in Africa. I manipulated the source that verifies this claim by telling the participants that claim was certified by the blockchain technology (in the blockchain augmented claim condition) or the Alliance of Diamond Miners (in third-party label condition). Participants also read a brief description about the blockchain technology or the Alliance of Diamond Miners. See Appendix A4 for complete descriptions of the manipulations and for results from the pretest.

After reading the scenario, participants responded to a measure of purchase intention: “How likely are you to buy the diamond?” (measured on a 7-point scale; 1 = Extremely unlikely to 7 = Extremely likely). In addition, participants responded to a three-item concern for cause measure: “The claim that the diamond miners’ human rights were protected is very important to me”, “The claim that the diamond miners’ human rights were protected will play an important role in my decision to purchase the diamond” and “Knowing that the diamond miners’ human rights were protected is very satisfying to me” (measured on a 7-point scale; 1 = Strongly disagree to 7 = Strongly agree). Finally, participants responded to demographic questions.

Results

Purchase Intention

Analysis of Covariance (ANCOVA) was performed with purchase intention as dependent variable, and concern for cause scores (α = .87), claim source (0 = third-party label; 1 = blockchain augmented claim) and their higher-order interaction as independent variables. The analysis revealed a marginal main effect of claim source ($M_{blockchain}$ = 4.40, *SD* = 1.76; $M_{third\text{-}party}$ = 4.18, *SD* = 1.66; $F(1, 106) = 3.09$, $p = .082$) and no significant main effect of concern for cause ($F(1, 106) = 1.45$, $p = .23$), both subsumed by a significant two-way interaction ($F(1, 106) = 3.91$, $p = .05$).

Following Spiller et.al. (2013), I used the Johnson-Neyman (JN) technique to identify region(s) of significance for the simple effect of the claim source at all levels of concern for cause (*M* = 5.06, *SD* = 1.27). Consistent with H3a, I found a JN point (6.57) such that the effect of claim source was significant for concern values at and above this JN point ($b = 1.02$, $SE = .51$, $t(106) = 1.98$, $p = .05$). These results reveal that blockchain augmented claims lead to higher purchase intentions among consumers more highly concerned with the supported cause.

Discussion

Study 3 documents findings in support of H3a. Specifically, I find that consumers report higher purchase intentions for a product when the claims about a brand's support for a sustainable cause are backed by blockchain augmented claims (vs. a third-party label). This effect emerged for participants who reported that they are highly concerned about the cause, but attenuated at lower levels of concern. In study 4, I replicate the findings of study 3 and simultaneously testing the underlying psychological process for the observed effect.

Study 4

The primary objective of study 4 is to test our complete conceptual model. Specifically, I test whether the effect (H1) and associated underlying process (H2) are both moderated by consumer concern for the sustainable cause (H3).

Method

Two hundred and eighty-eight participants from MTurk (52.8% females; M_{age} = 40.76 years) were recruited to participate in a 2 group (Claim source: blockchain augmented claim vs. third-party label) between-subjects design, with a continuous measure of concern for cause, for monetary compensation.

Procedure

Participants read one of the two scenarios adapted from studies 1A and 2 describing sustainably sourced clothing, with manipulations depicting either a blockchain augmented claim or a third-party label. After reading the scenario, participants responded to a measure of purchase intention: "How likely are you to buy the t-shirt?" (measured on a 7-point scale; 1 = Extremely unlikely, 7 = Extremely likely). Participants then responded to the same 5-item scale to measure claim legitimacy as in study 2. Next, participants responded to a three-item concern for cause measure: "Buying child labor free products is very important to me", "I always prefer to purchase products that are child labor free" and "When buying apparel such as t-shirts, I always look for child labor free products" (measured on a 7-point scale; 1 = Strongly disagree to 7 = Strongly agree). Finally, participants responded to demographic questions.

Results

To test the full model, I first confirmed the influence of claim source on purchase intentions, then assessed the influence of claim source on our proposed mediator of claim legitimacy, before finally assessing the full moderated mediation model. These three steps are detailed in the following paragraphs.

Purchase Intention

An ANCOVA was performed with purchase intention as dependent variable, and concern for cause scores (α = .85), claim source (0 = third-party label; 1 = blockchain augmented claim) and their interaction as independent variables. The analysis revealed a marginally significant main effect of claim source ($M_{blockchain}$ = 4.91, SD = 1.76; $M_{\text{third-party}}$ = 4.54, SD = 1.67; (1, 284) = 3.74, p = .054) and a significant main effect of concern for cause (F(1, 284) = 32.85, p < .001). Both main effects were subsumed by the predicted two-way interaction (F(1, 284) = 6.77, p < .05). Following Spiller et.al. (2013), I used the JN technique to identify region(s) of significance for the simple effect of the claim source at all levels of concern for cause (M = 4.81, SD = 1.43). Consistent with H3a, I found a JN point (4.81) such that the effect of claim source was significant for concern values at and above this JN point (b = .37, SE = .19, t(284) = 1.98, p = .05). Below this JN point, the effect of claim source was attenuated. These results reveal that blockchain augmented claims lead to higher purchase intentions among consumers more highly concerned with the supported cause.

Confidence in claim's legitimacy

An ANCOVA was performed with claim's legitimacy as dependent variable (α = .96), and concern for cause scores, claim source (0 = third-party label; 1 = blockchain augmented claim) and their interaction as independent variables. The analysis revealed a marginal main effect of claim source ($M_{blockchain}$ = 5.14, SD = 1.32; $M_{\text{third-party}}$ = 4.90, SD = 1.34; F(1, 284) = 3.11, p = .079) and significant main effect of concern for cause (F(1, 284) = 13.55, p < .001), both subsumed by a significant two-way interaction (F(1, 284) =

5.32, $p < .05$). Following Spiller et.al. (2013), I used the JN technique to identify region(s) of significance for the simple effect of the claim source at all levels of concern for cause. Consistent with H3a, I found a JN point (5.07) such that the effect of claim source was significant for concern values at and above this JN point ($b = .30$, $SE = .15$, $t(284) = 1.98$, $p = .05$). Below this JN point, the effect of claim source was attenuated. These results reveal that blockchain augmented claims lead to higher confidence in claim legitimacy among consumers more highly concerned with the supported cause.

Process

Next, I conducted a moderated-mediation analysis to assess our full model using Haye's Process Model 8 (Hayes, 2017), with claim source as independent variable, concern for cause measure as a continuous moderator of the relationship between the independent variable and the mediator, confidence in claim legitimacy as mediator, and purchase intention as dependent variable. Results revealed a significant index of moderated mediation (Indirect Effect = .20, 95% CI_{95}: [.012, .38]). This indicates that the indirect effect of claim source on purchase intentions through confidence in claim legitimacy varies significantly depending upon concern for cause, directly supporting H3b. Together, these results suggest that the claim's legitimacy mediates the relationship between claim source conditions and concern for cause on purchase intention.

Discussion

Study 4 provides support for H1, H2 and H3. Specifically, I demonstrate that when consumers' concern for cause is high, they are more confident in the legitimacy of the sustainability claims made by a brand, leading to higher likelihood to purchase a product when the brand's sustainability claim is backed by blockchain, versus a third-party label. However, the positive effect of blockchain augmented claims attenuated when participants reported lower concern for the cause.

Follow-up Study 1

The objective of this study is to test H1 and replicate the findings from existing studies by using a widely known third-party label organization's name. While the design and stimuli for this study is similar to that of study 1B, this study differs from the above-mentioned empirical studies in the following ways. First, I used a widely known third-party label organization's name, namely "Global Animal Partnership" that is used by Whole Foods for its meat products (Whole Foods, 2023). Second, the claim source descriptions were updated to have similar number of words describing each claim source and address concerns that the higher number of words for the blockchain augmented marketing claim condition in studies 1-4 was driving the effect. Third, instead of having a self-made brand claim condition whereby no additional information was provided about the claim source, I introduced two additional claim source conditions. While both the new claim sources were labelled "Proprietary Technology", the claim source descriptions were either the same as the blockchain condition or the same as the third-party label condition. This served two objectives. First, it helps in testing whether the results from

studies 1-4 occur only because of the use of the word "technology" being compared to a conventional industry practice of using labels. Second, it allows to create a self-made brand claim using the word "Proprietary Technology" without needing to create a method of claim source verification on my own.

Method

Four hundred and four participants from Amazon Mechanical Turk (52.5% females; M_{age} = 43.17 years) in a four group (Claim source: blockchain augmented claim vs. third-party label vs. self-made brand claim with blockchain description vs. self-made brand claim with third-party label description) between-subjects design for monetary compensation.

Procedure

Participants read the scenario as presented in study 1B, except that the claim source descriptions were revised to have similar number of words across all conditions (see Appendix A5 for claim source descriptions) After reading the scenario, participants responded to a measure of purchase intention: "How likely are you to buy the chicken?" (Measured on a 7-point scale; 1 = Extremely unlikely, 7 = Extremely likely) followed by two demographic questions (e.g., age, gender).

Results

Purchase Intention

A one-way ANOVA revealed a significant effect of claim source on participants' purchase intentions ($F(3, 400) = 3.28$, $p < .05$). Planned contrasts show that participants' purchase intentions in the blockchain augmented marketing claim condition ($M = 4.41$; $SD = 1.88$) were the lowest of all four conditions, but only statistically significantly lower than the third-party label condition ($M = 5.14$, $SD = 1.44$; $t(190.47) = -3.12$, $p < .01$) and the self-made brand claim (i.e., proprietary technology) with blockchain description condition ($M = 4.86$, $SD = 1.60$; $t(197.47) = - 1.85$, $p = .056$), but not statistically significantly lower than the self-made brand claim with third-party label description ($M = 4.79$, $SD = 1.76$; $t(201.59) = -1.51$, $p = .13$). Interestingly, the self-made brand claim with blockchain description led to similarly higher purchase intentions as the third-party label condition ($t(195.83) = 1.31$, $p = .19$). Moreover, the difference in purchase intentions between the self-made brand claim with third-party label description condition was not statistically different from any of the other conditions.

Discussion

Results from the first follow-up study did not replicate the findings from studies 1-4. Specifically, I did not find support for the positive effect of the blockchain augmented marketing claim condition on purchase intentions when compared with the third-party label condition. One possible explanation for these results is as follows. It could be that the recent crash in the cryptocurrency financial market may have created

some negative attitude towards blockchain technology, which is a key tool that allows cryptocurrencies to exist. While the market crash occurred due to various reasons (e.g., hacking), blockchain may have been tainted by association. Additionally, as this study was run with Amazon MTurk workers, they may have been more aware of this crash of cryptocurrency financial market. This explanation seems plausible as we can see that a "Proprietary Technology" that could perform the exact same functions as blockchain technology led to higher purchase intentions when compared to the blockchain augmented marketing claim condition. Moreover, and interestingly, participants in the "Proprietary Technology" condition with blockchain description reported similarly high purchase intentions that were not statistically significantly different from the third-party label condition. Hence, while participants may have developed negative attitude towards the term "blockchain", results show that any technology that provides the same utility as blockchain technology could have at least similar positive effects on purchase intentions as a well-known third-party label organization, such as Global Animal Partnership, does.

Follow-up study 2

The objective of this study is to test H1, while using the revised claim source descriptions and design as the follow-up study 1, except that the product-related claim differs from the sustainability context. While the widespread use of blockchain technology in marketing and supply chain is currently focused on ensuring social or environmental sustainability, I contend that blockchain technology could be beneficial for products and brands that often have their legitimacy questioned.

There is an abundance of counterfeit products out in the market and consumers often fall prey to cheap knock offs at full price. The total value of counterfeit products industry across various industries is estimated to be cross $3 trillion in 2022 (Handfield, 2021). Blockchain technology could potentially help in alleviating consumers' concerns about potentially purchasing counterfeit products, especially when they are not directly buying the product from the manufacturer or the brand itself. Given consumers often purchase apparel and accessories from various retailers, or other consumers (e.g., eBay), access to the products' origins could potentially help consumers make purchases without being concerned about the product's authenticity.

Method

Four hundred and four participants from Amazon Mechanical Turk (51.7% females; M_{age} = 42.46 years) in a four group (Claim source: blockchain augmented claim vs. third-party label vs. self-made brand claim with blockchain description vs. self-made brand claim with third-party label description) between-subjects design for monetary compensation.

Procedure

Participants were asked to imagine that they were shopping for sunglasses online at a multi-brand retailer that offers great discounts. Participants saw a pair of Ray-Ban sunglasses as they would on any online retailer's website, followed by a claim that these sunglasses are original Ray-Bans as verified by the claim sources mentioned above. While all of the claim sources and descriptions were similar to that in follow-up study 1, the third-party label organization in this study was labelled "Consumer Reports", which

is one of the credible sources of product information for consumers to use (see Appendix A6 for complete stimuli and claim source descriptions). After reading the scenario, participants responded to a measure of purchase intention: "How likely are you to buy the chicken?" (Measured on a 7-point scale; 1 = Extremely unlikely, 7 = Extremely likely), followed by the demographic questions (e.g., age, gender).

Results

Purchase Intention

A one-way ANOVA revealed a non-significant effect of claim source on participants' purchase intentions ($F(3, 400) = .81$, $p = .49$). While none of the claim sources led to statistically significantly different purchase intentions, there are evident directional effects that are similar to that of the follow-up study 1. Participants' purchase intentions in the blockchain augmented marketing claim condition ($M = 4.62$; $SD = 1.82$) were the lowest of all four conditions. Interestingly, and similar to the results from follow-up study 1, the self-made brand claim with blockchain description ($M = 5.00$, $SD = 1.69$) led to directionally higher purchase intentions as compared to the third-party label condition. ($M = 4.83$, $SD = 1.84$). Purchase intentions in the self-made brand claim with third-party label description ($M = 4.75$, $SD = 1.71$) was very similar to the third-party label condition.

Discussion

Results from follow-up study 2 did not replicate the findings from studies 1-4 or the first follow-up study. However, the pattern of results replicates the findings from follow-up study 1 directionally. Participants in the "Proprietary Technology" condition with blockchain description reported directionally higher purchase intentions when compared to the third-party label condition, as well as the blockchain augmented marketing claim condition.

General Discussion

The current research studies the effect of blockchain augmented claims versus traditional industry practices of validating products' sustainability claims on consumers' purchase intentions of sustainable products. I propose that due to the increased transparency and traceability of data provided by blockchain technology, consumers' purchase intentions for a sustainable product, and their confidence in the claim's legitimacy increases. This effect only occurs for consumers who are highly concerned about the cause that the brand supports via its sustainable products. We tested our hypotheses in five studies. While studies 1A and 1B demonstrate that blockchain augmented claims lead to higher purchase intention as compared to the traditional third-party labels and a brand's self-made claims, study 2 demonstrates this effect is mediated by consumers' confidence in the legitimacy of sustainability claims. Moreover, results from study 3 provide evidence of the moderating role of consumers' concern for cause. More specifically, study 3 finds that the effects from studies 1A and 1B hold only for consumers who are highly concerned about the sustainable cause being supported by the

brand. Finally, in study 4, I replicate the findings from study 3, and provide evidence for the underlying psychological process through confidence in claim's legitimacy. In addition, the follow-up studies, while failing to find support for H1, show some evidence that a technology that provides the same utility as blockchain technology could have similar positive effects on consumers' purchase intentions as a well-known third-party label does. Findings from the current research make the following contributions.

Theoretical Contributions, Limitations and Future Research

First, I introduce blockchain augmented claims to the marketing literature and systematically demonstrate its effect on consumers' purchase intentions. In doing so, I also contribute by being one of the first to respond to calls for research on the implications of blockchain within marketing (Cui et.al., 2021; Suher et.al., 2021). By showing the positive implications of blockchain augmented claims versus traditional industry practices of validating products' sustainability claims on consumers' purchase intentions, we demonstrate that blockchain is uniquely effective at enhancing transparency. For instance, Suher et.al., (2021), while empirically studying consumers' choice of (im)perfect food, have called for consumers and consumer advocates to be vary of manufacturers using labels of food packaging (such as "care label", or "artisanal") without being required to meet any specific criteria for these claims. I demonstrate that blockchain augmented claims lead to more positive effects on consumers' purchase intentions, as opposed to a third-party label or a brand's self-made claims.

Moreover, the current research confirms the findings from research on transparency and builds on it to show how the use of transparency in promoting sustainable products could influence consumers' behavior. Recent empirical work has documented positive effects of operational transparency on consumers (Buell and Kalkanci, 2021; Buell et.al., 2017). With the exception of Buell and Kalkanci (2021), most studies have explored the use of business operations (e.g., food preparation) on consumers. Buell and Kalkanci (2021) studied to use of operational transparency in a business's internal and external sustainable responsibility initiatives. However, the current research differs from Buell and Kalkanci's (2021) research as I compare the use of blockchain technology versus the traditional industry practices and its influence on consumers' purchase intentions of sustainable products. Thus, my research also has implications for the consumer-technology interaction in the marketplace. Moreover, this research also contributes to existing literature on transparency and self-disclosure by exploring the role of consumers' concern for the cause and demonstrating that transparency matters only when the cause matters to the consumers.

Future research could investigate other types of claims commonly used by brands in the marketplace such as "ingredient" branding claims, "artisan" product claims, claims about product authenticity, or country of origin claims. For instance, one possible context could be the exchange of valuable collectibles in the secondary market such as rare, branded sneakers. Brands could provide blockchain-based proof of authenticity to consumers, who could then use it to alleviate buyers' concern for fraud in the secondary market such as eBay. The results from the follow-up study 2, despite not finding support for the hypothesis statistically, clearly shows that a technology that provides the utility of

blockchain technology could be equally beneficial for the brand as using a known third-party would be. Practical implications of this can be observed in the digital space where Non-fungible Tokens (NFTs) have recently captured the attention of brands and consumers that are interested in owning "original" digital collectibles such as art, music, and even clothing for avatars (Olson, 2021; Pires, 2021; Takahashi, 2017).

This research contributes to existing work on brand signaling by explaining the psychological process through which the use blockchain augmented claims influences consumers' purchase intentions of sustainable products. Prior research suggests that consumers' rely on brands' marketing cues and signals to make decisions and to assess if the brands are capable of delivering on their promises (Erdem and Swait, 1998; Mishra et.al., 1998; Zhu et.al., 2012; Zhu and Zhang, 2010), especially when a consumer cannot assess the quality of a product, or verify the credibility of information, before making a purchase (Kirmani and Rao, 2000; Mishra et.al., 1998). I contribute to the existing literature on brand signaling by proposing that blockchain augmented claims serve as an important signal of a brand's commitment to continue delivering its promised value (Wang et.al., 2017), which increases consumers' confidence in the claim's legitimacy. Future research could investigate which feature(s) of the blockchain technology is (are) most effective in enhancing consumers' confidence in claim legitimacy. Findings from such investigations would be potentially useful for brands, especially in developing its advertisement campaigns, as brands could effectively focus on key drivers of consumers' confidence while it empowers its consumers with access to information through blockchain technology.

This research also extends the findings from previous research on consumers identity and sustainability consciousness of consumers by showing that blockchain augmented claims have a positive effect on purchase intentions of sustainable products only when consumers are concerned about the sustainable cause being supported by the brand. While existing work on consumer identity and sustainability consciousness suggests that consumers are more likely to engage in proenvironmental and prosocial behavior when it is congruent with their values and identities (Cai and Wyer, 2015; Garvey and Bolton, 2017; Kaiser et.al., 1999; Kristofferson et.al., 2014; Lee et.al., 2014; Robinson et.al., 2012; Winterich et.al., 2009), previous research has not explored how transparency in information provided about the sustainability cause influences consumers' behavior.

One limitation of the current research is that I primarily only focused on and used social and environmental sustainability as contexts in the experimental stimuli. Recent research has proposed three dimensions of sustainability (social, environmental, and economic). Even though the findings should be generalizable to economic sustainability claims made by brands, future research could explore the effectiveness of blockchain technology in backing economic sustainability claims. Moreover, future research could explicitly investigate the effectiveness of blockchain augmented claims as a solution to consumers' greenwashing skepticism. Prior research has shown that highly concerned consumers are more likely to be attuned to brands' greenwashing strategies (Chen and Chang, 2013; Delmas and Burbano, 2011). Thus, overcoming consumers' greenwashing skepticism through the use of blockchain technology could benefit the brands.

Managerial Implications

Finally, findings from this research have important implications for marketers, particularly those that are planning or considering investment in the development of its blockchain network. First, results reveal that blockchain has important implications for the legitimacy of marketing claims, which can in turn improve purchase intentions. Moreover, I do not observe a downside for brands in using blockchain augmented claims versus traditional claim methods in studies 1-4. However, the follow-up studies reveal that while participants may not respond positively to "blockchain" probably due to the recent cryptocurrency market crash, a technology that provides the same utility as blockchain may be equally suited to increase purchase intentions for sustainable products as a well-known third-party label would be. It would be worthwhile to re-run the follow-up studies with different participants such as students and knowledgeable individuals about blockchain technology to see if the patterns are replicated.

Second, the findings also reveal that the positive effect of blockchain augmented claims (versus traditional claim methods) on purchase intentions is stronger for consumers who are highly concerned for the cause. Thus, consumer segments that place a high value on sustainability will be particularly receptive to blockchain augmented claims. These findings suggest that in order to realize the potential benefits from its investments in blockchain technology to back its sustainability claims, brands should focus on the sustainability issues that consumers are most concerned about. However, despite the obvious benefits that this research reveals, brands, would still be well informed to conduct a thorough cost-benefit analysis (Deloitte, 2020; IBM, 2022).

Results from the current research also have implications for other marketing contexts wherein legitimacy of claims around a product's origin play a key role in consumer decision making. For instance, luxury brands that face counterfeiting, or brands providing artisan products (e.g., handcrafted goods) often have their authenticity questioned (Grier et.al., 2006; Newman and Dhar, 2014) and will almost certainly benefit from enhanced perceptions of legitimacy due to blockchain augmented claims. For instance, brands that sell rare collectibles (e.g., Nike limited-edition shoe) can benefit from providing a blockchain augmented claim of authenticity to alleviate buyers concern that the product is legitimate on both the primary (e.g., Nike retail) and secondary (e.g., eBay) markets. In such cases, brands such as Nike, can also prioritize investing in blockchain technology for its limited-edition shoes versus other products in its product portfolio, as consumers are likely to be more concerned about the authenticity of the limited-edition shoe versus the mass-produced shoes. Moreover, blockchain augmented claims can also benefit brands, especially lesser known or new brands, that use ingredient branding. For instance, a new brand selling laptops with "Intel Inside" sticker on it could alleviate consumers' concern about being deceived by providing a blockchain augmented claim containing details about the laptop's components. Similarly, brands that offer products that are valuable by association with its creator (e.g., paintings, designer shirts, etc.) can also benefit from using blockchain augmented claims verifying a particular unit's legitimacy. Recent research suggests that consumers value earlier (vs. later) products of such nature and perceive it as more likely to carry the creator' essence (Smith et.al., 2016). Such increased confidence in the legitimacy of a product's origin should also extend to entirely digital products, such as Non-Fungible Tokens (NFTs), which

permit blockchain augmented claims of that digital item's origins and authenticity. As blockchain technology continues to spread throughout the physical and digital product realms, I hope that the insights provided by my research will be applied to provide benefits to both product marketers and consumers.

Chapter 2. Consumers' Evaluation of a Sycophant Artificial Intelligence

Artificial Intelligence (AI), once a topic of science fiction, is now at the disposal of almost every user of the latest hand-held devices, computers, self-driving cars and other consumer devices. Alexa (Amazon), Siri (Apple), Bixby (Samsung) and Google Assistant (Google), are just some of the popular brands of conversational AIs being used by millions of consumers in North America for everyday purposes such as online shopping, navigation, setting appointments, or simply to have a conversation, etc., and hence have repeated interactions with AI during the day (Dawar, 2018; Guha et.al., 2021; Kinsella, 2018). According to recent reports, there were approximately 4.2 billion such AI devices being used globally, with over 100 million being used by households in United States of America (USA). This number that is expected to grow twice as much by 2024 to around 8.4 billion devices (Laricchia, 2022). This increasing penetration of conversational AI devices present immense opportunities for AI developers to use tactics that develop personal relationships between the users and their AI devices, especially because such AIs, conversational agents that can use natural language abilities and scripts that are personalized to suit an individual and their culture (Fogg and Nass, 1997; Castelo, Lehman and Bos, 2019), are ideally suited to use persuasive communication tactics, such as ingratiation, to influence consumer decision-making.

Ingratiation refers to interpersonal influence tactics that are aimed at enhancing one's interpersonal attractiveness and at gaining favor with another person (i.e., the target) (Vonk, 2002). In general, ingratiation includes flattery, opinion conformity, and favor rendering (Westphal and Stern, 2007). While flattery is defined as "communicating positive things about another person without regard to that person's true qualities or

abilities" (Fogg and Nass, 1997), opinion conformity refers to "statements that validate the opinion held by another person" (Gordon, 1996). Moreover, favor rendering refers to the act of extending favors towards a target with the objective of creating some sense of obligation to return the favor in the future (Gordon, 1996). With the growing interest among developers in creating more human-like conversational AIs (Askhtorab, Weisz and Liao, 2020) and among researchers to test how users react to such human-like AIs (Kim and Duhachek, 2020; Mende et.al., 2019; Van Doorn et.al., 2017), especially due to natural language processing and sophisticated conversational abilities of AI (e.g., ChatGPT3, Siri, Alexa), and with the growing usage of such conversational AIs by users for purposes such as online shopping, navigating directions, obtaining weather forecasts and financial advice, etc., (Guha et.al., 2021), it is an important research question to test how effective persuasive communication tactics, such as ingratiation, are as a marketing tool for brands and AI developers.

While these conversational AIs include, and are not limited to, household and handheld voice-based devices such as Amazon Alexa and Siri, text-based chatbots (with or without animated avatars), and Humanoid Service Robots (HSRs; i.e., robots that look like humans) that are increasingly being used by service industries (Mende et.al., 2019), the current research specifically focuses on voice- and text-based conversational AIs (referred to AI hereafter), but not HSRs, robots or any chatbot that has human-like physical features augmented via avatars.

In the current research I study the role of ingratiation by an AI on its users' willingness to accept product recommendations made by the AI and on the users' evaluation of the AI's accuracy. According to recent research in marketing, making recommendations and future predictions/forecasts are the key performance features that have been identified as the functions that users commonly use AIs for (Castelo, Bos and Lehman, 2019; Longoni, Bonezzi and Morewedge, 2019). Based on the existing research on ingratiation and users' perception of AI's objectivity, I propose that ingratiation (vs. non-ingratiation) from an AI should lead to higher user willingness to accept recommendations made by the AI and positively affect their evaluation of AI's predictive accuracy in domains unrelated to ingratiation. By doing so, I aim to make the following contributions.

First, this research builds upon and extends existing research on ingratiation and explains how ingratiating AIs can lead to higher user willingness to accept recommendations made by the AI and positively affect their evaluation of AI's predictive accuracy in domains unrelated to ingratiation. While ingratiation in human-human interactions have been studied within marketing (Campbell and Kirmani, 2000; Chan and Sengupta, 2010; 2013; Main, Dahl and Darke, 2007), there exists scant research that has tested this phenomena in human-AI dyad, whereby the users' evaluation of the AI's usefulness, most commonly operationalized via AI's accuracy and users' willingness to accept recommendations made by the AI (Castelo et.al., 2019; Longoni et.al., 2019), is tested in domains unrelated to ingratiation. While some research within computer science have focused on computer-human interactions and have shown how flattery can influence how willing users are to follow the guidance of flattering computer (Fogg and Nass,

1997; Lee, 2010), such studies were conducted using specific games (e.g., 20 Questions Trivia by Fogg and Nass, 1997) with participants' responses restricted to the context of the game. However, the AIs available to users today possess sophisticated conversational abilities than computers in the past, and are increasingly being used for shopping and making other consumption decisions. Furthermore, existing research on ingratiation within marketing has primarily focused on flattery (Campbell and Kirmani, 2000; Chan and Sengupta, 2010; 2013; Main, Dahl and Darke, 2007). This research aims to fill this gap by extending the findings on ingratiation in human-human interactions to computer-AI interactions and also focus on additional forms of ingratiation (i.e., opinion conformity).

Second, I identify the underlying process that explains the effect of ingratiation from an AI on users' willingness to accept recommendations made by the AI and on their evaluation of AI's predictive accuracy in domains unrelated to ingratiation. I propose and demonstrate that perceived objectivity of the AI serves as an underlying psychological mechanism driving the effect of ingratiation. Specifically, drawing on research on consumers' lay beliefs about AI, the theory of mind perception and self-enhancement, I propose that users are more likely to perceive an ingratiating (vs. non-ingratiating) AI as objective as the general belief is that an AI simply follows logic and rule-based decision making without any intentions of its own.

Moreover, given the general human tendency to see oneself in positive light, being ingratiated further fulfills and individual's self-enhancement motives. Thus, while an ingratiating AI serves such self-enhancement objectives, a non-ingratiating AI does not, which explains why users' perceptions of an AI's objectivity could be influenced, regardless of how the AI functions (i.e., based on logic and rules).

In testing the hypothesis for the underlying process mechanism, I also contribute to the literature on human-AI interaction in marketing by using a real AI device (i.e., an Alexa Echo Dot Device) that was preprogrammed to ingratiate itself with the users. Recent AI research within marketing, according to a work in progress with my coauthors, has primarily used vignettes in studying human-AI interactions in marketing (Kim et.al., 2023). Hence, study 2 in the current research contributes to the knowledge of marketing researchers and provides a cost-effective tool to create a real human-AI interaction stimuli by using a programmable Alexa Echo Dot Device.

Third, this research proposes and tests the underlying mechanism that drives the above-mentioned effects via a theoretically driven moderator, which is the degree of technology anthropomorphism or how human-like versus machine-like the AI is. Based on the existing literature on technology anthropomorphism and Persuasion Knowledge Model, I make a novel prediction that when users are ingratiated by a machine-like (vs. human-like) AI, they would be more likely to perceive the AI as objective, and in turn, be more willing to accept product recommendations made by the AI and also perceive it to be accurate in making future predictions. While ingratiation has generally been found to have positive effects on the ingratiator (Campbell and Kirmani, 2000; Chan and Sengupta, 2010; Gordon 1996; Vonk 2002; Westphal and Stern, 2007), increasing the

human-likeness of the AIs have been found to make the AI's superordinate goals and intentions more salient (Kim and Duhacheck, 2020). Such salience of intentions and ulterior motives, according to research on PKM (Friestad and Wright, 1994), can lower the effectiveness of ingratiation.

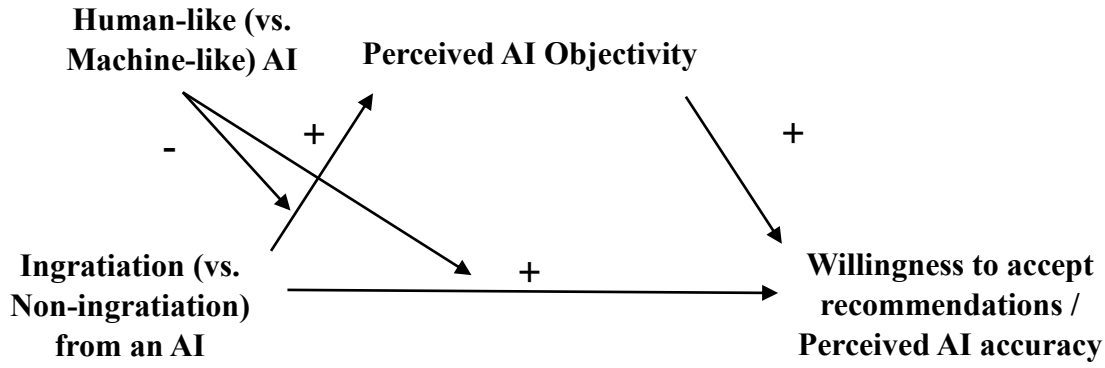
Finally, findings from this research have implications for marketers, especially the developers of the AI-based devices. While the brands are competing for the market share (Dawar, 2018; Guha et.al., 2021; Kinsella, 2018) in online shopping via AIs and are also moving towards making the technology possess human-like characteristics (physical and mental) (Van Doorn et.al., 2017), the current research provides managerial insight into the potential downside for using a commonly used persuasive communication tactic to make a sale when the AI is more human-like.

Theoretical Development

The present research focuses on use of ingratiation by an AI and its effects on users' willingness to accept product recommendations made by the AI and on the users' evaluation of the AI's accuracy. In developing the theoretical framework that explains how the use of ingratiation might affect a user's evaluation of an AI, I draw on existing literature on ingratiation, consumers' lay beliefs about AI and its objectivity, technology anthropomorphism, persuasion knowledge and conversational norms. For the conceptual framework, please refer to figure 2.

Figure 2.

Conceptual Model



Ingratiation

Ingratiation refers to interpersonal influence tactics that are aimed at enhancing one's interpersonal attractiveness and at gaining favor with another person (i.e., the target) (Vonk, 2002). In general, ingratiation includes flattery, opinion conformity, and favor rendering (Westphal and Stern, 2007). At face-value, ingratiation appears to be a harmless tactic for the ingratiator that brings benefits to them, even if it is based on false premise. For instance, Stengel (2002) claims, "There is no punishment for false flattery", which was further validated by findings from empirical studies conducted by Chan and Sengupta (2010), who found positive effects of insincere flattery on a salesperson's evaluation by the customer.

According to extant research, ingratiation generally has positive effects for the ingratiator (Chan and Sengupta, 2010; Fogg and Nass, 1997; Gordon, 1996; Westphal and Stern, 2007). For instance, within organizational behavior literature, positive effects

of ingratiation have been documented, even among the executive members such as directors, CEOs, etc., that includes increased compensation and promotions (Higgins, Judge, and Ferris, 2003; Westphal and Stern, 2007). Within the realm of consumer behavior, most research have only focused on flattery as a form of ingratiation and have found positive effects of flattery for the flatterer. Defined as communicating positive things about another person without regard to that person's true qualities or abilities (Fogg and Nass, 1997), flattery is one of the common tactics used by salespersons to increase their interpersonal influence over the customers that leads to positive evaluation of the salespersons by the customers (Campbell and Kirmani, 2000; Chan and Sengupta, 2010; Isaac and Grayson, 2017).

Ingratiation is also more likely to work in favor of the ingratiator as it fulfills the self-enhancement motives of the target. Self-enhancement, which refers to taking a favorable view of oneself, is one of the most likely underlying causes that explain positive effects of ingratiation for the ingratiator (Gordon, 1996, Vonk, 2002; Chan and Sengupta, 2010; Leone, 2010), often characterized by a positive evaluation of the ingratiator's credibility (Vonk, 2002). By extension, non-ingratiation (i.e., non-flattering remarks towards the target or not agreeing with the opinions of the target) should negatively affect the self-enhancement motives of individuals and have negative effects for the ingratiator. For instance, Chan and Sengupta (2013) found that when an individual observes someone else being flattered, they perceive themselves as inferior by means of social comparison, and negatively evaluate the ingratiator for putting them in this negative emotional state.

The effects of ingratiation are so widespread that even computers are favorably evaluated by the users when the computers flatter them (Fogg and Nass, 1997; Lee, 2010). Using computer games (trivia) as a context, Fogg and Nass (1997) and Lee (2010) showed that when a participant was flattered by the avatar in the game, their evaluations of the avatar were positive. While these findings show the positive effects of flattery extends to computers, the studies in the research tested users' evaluation of the computer only in a context where the computer performed one specific function, which is not the same as how users use the AIs available today. For instance, Fogg and Nass (1997) asked the participants to play the 20 Questions guessing game. The evaluation of the computer and the flattering feedback on participants' correct answers were all in context of the game only. However, in today's world, a user might use AI for a wide variety of purposes such as getting directions to nearest restaurant, weather forecasts, online shopping, texting, etc. Therefore, there is limited understanding of how ingratiation from an AI affects users' behavior in domains unrelated to ingratiation. In addition to the limitation of the scope of the computers' function to a specific game in prior research, the studies only focused on flattery as a form of ingratiation, similar to the research within marketing.

In the current research, I aim to build upon the findings in the literature and expand our understanding of how different forms of ingratiation from an AI affects users' willingness to accept recommendations made by the AI and their evaluation of AI's predictive accuracy in domains unrelated to ingratiation. In addition to flattery as an ingratiation tactic, I also focus on opinion conformity, which refers to "statements that validate the opinion held by another person" (Gordon, 1996; Vonk, 2002), to test if the

effects generalize to different forms of ingratiation. Moreover, making recommendations and future predictions/forecasts are the key outcome variables in the current research as these have been identified as some of the key functions of the AIs that users commonly use AIs for (Castelo et.al., 2019; Longoni et.al., 2019).

Ingratiation and Perceived Objectivity of AI

Extant research has shown that consumers believe AIs to possess cognitive abilities (Castelo et.al., 2019; Longoni et.al., 2019) and capable of performing objective tasks that require logic, and rule-based, decision-making (Inbar, Cone and Gilovich, 2010). Moreover, consumers perceive AIs to be more consistent and less prone to errors (Zhang, Pentina and Fan, 2021), sometimes even superior to humans on several tasks such as making financial decisions (Castelo et.al., 2019; Kim and Duhachek, 2020). While AIs share these cognitive abilities with humans, they often not perceived to possess other human-like mind characteristics that are affective or emotional in nature (Haslam, 2006; Loughnan and Haslam, 2007). This is supported by research that found users prefer using an algorithm for tasks that are objective in nature, as opposed to the ones that are subjective, or require affective capabilities as well, such as those related to symbolic consumption (Granulo, Fuchs and Puntoni, 2021) or suggesting a joke (Castelo et.al., 2019). Therefore, given that consumers perceive AIs to be more suitable for objective tasks only and believe that AIs follow a logic, or rule-based mechanism, to perform the tasks, consumers are more likely to perceive an AI to be objective device that makes decisions without any involvement of emotions or bias.

Based on the existing research on ingratiation and users' perception of AI's objectivity, I propose that ingratiation (vs. non-ingratiation) from an AI should lead to higher user willingness to accept recommendations made by the AI and positively affect their evaluation of AI's predictive accuracy in domains unrelated to ingratiation as the users are more likely to believe that the AI is credible and is "objectively" flattering them or agreeing with their opinions and choices. For instance, building upon the findings from research on ingratiation, if an AI, such as Alexa, flatters the user about their voice, or agrees with them about their beliefs about something or about a choice they made (e.g., a restaurant or a brand), users are more likely to accept recommendations made by such AI and also perceive it to be more accurate in making future predictions and forecasts. As ingratiation fulfills and individual's self-enhancement motives (Chan and Sengupta, 2013; Gordon, 1996; Vonk, 2002) and also leads to perceiving the ingratiator as more credible (Vonk, 2002), an ingratiating AI should be perceived as more objective than a non-ingratiating AI, leading to higher willingness to accept recommendations by the users and higher perceptions of AI's predictive accuracy. On the other hand, a non-ingratiating AI should be perceived as less objective and less credible as it goes against the self-enhancement objectives of an individual and threatens their self-view (Baumeister and Leary, 1995). This is also supported by findings in the prior literature (Chan and Sengupta, 2013; Leone, 2010). Thus, users should be less willing to accept recommendations from a non-ingratiating AI and also perceive it as less accurate in making future predictions.

Based on the discussion above, I formally hypothesize:

H1: Ingratiation from an AI will (a) lead to higher user's willingness to accept product recommendations from the AI and (b) also lead to higher perceptions of predictive accuracy of the AI.

H2: Perceived objectivity of the AI mediates the effect ingratiation from an AI on users' willingness to accept product recommendations from the AI and the users' perceptions of predictive accuracy of the AI.

Technology Anthropomorphism: Human-like vs. Machine-like AI

Anthropomorphism refers to representing a non-living object or agent's mental and physical behaviors with descriptors generally used for humans (Epley, Waytz, and Cacioppo, 2007; Waytz, Cacioppo, and Epley, 2010). Anthropomorphism, a useful managerial tool, could be used by designing human-like features of a product or even a logo (Kim and McGill, 2011; May and Monga, 2014). Recent research in marketing has studied how endowing human-like attributes and capabilities to an AI (including algorithms, robots and chatbots) can lead to mixed effects on consumers. Such attributes and capabilities include adding human-like physical features to a robot or a chatbot such as face, limbs, body, etc. (e.g., Mende et.al., 2019) or other intangible features such as a name, conversational abilities and thinking capabilities like a human (Castelo et.al., 2019; Kim and Duhachek, 2020). Hence, while a machine-like AI is perceived to possess only

the cognitive abilities like that of a human mind, increasing human-likeness of the AI also makes agency and intentional planning (Castelo et.al., 2019). Adding such human-like attributes to an AI has been found to increase trust (Waytz, Heafner and Epley, 2014) and perceived capabilities of an AI in doing tasks that require affective capabilities (Castelo et.al., 2019). However, based on the theory of mind perception, endowing an AI with human-like attributes makes the agency and ulterior motives salient that can lower persuasive abilities of the AI (Kim and Duhachek, 2020).

Based on these findings, and on the research from Persuasion Knowledge Model, I propose that an ingratiating machine-like (vs. human-like) AI will be perceived as more objective, leading to higher users' willingness to accept recommendations and higher perceived accuracy of the AI in making future predictions. PKM suggests that people are not too naïve to be always influenced by ingratiation. Rather, over the course of time, people have developed a coping mechanism, called the persuasion knowledge (Campbell and Kirmani, 2000; Friestad and Wright, 1994) that they use to protect themselves against being influenced by an ingratiator. For instance, those who recognize an ulterior motive, or are able to think critically about the ingratiator's actions, evaluate a flattering salesperson as less sincere and attribute such acts of ingratiation as persuasive tactics to make a sale (Campbell & Kirmani, 2000; Chan and Sengupta, 2013; Gordon, 1996). Furthermore, targets of ingratiation, especially within organizations, attribute the act of ingratiation, and the intention behind it, to poor performance of the ingratiator (Schlenker and Leary, 1982; Wu et.al., 2013). Therefore, when a user interacts with, and gets ingratiated by, a human-like (vs. machine-like) AI, PKM would predict that the ulterior motive become more salient, thereby making the AI be perceived as less objective.

While the above-mentioned proposition may be true for an ingratiating human-like AI, what happens when a human-like AI engages in non-ingratiating acts such as passing a critical or non-flattering remark about the user or disagreeing with the opinions of the user? Building on CASA and findings on conversational norms, I predict that a non-ingratiating human-like AI (vs. an ingratiating human-like AI) would be perceived as more objective, and lead to higher users' willingness to accept recommendations from the AI and also lead to higher perceived accuracy of the AI. According to research on conversational norms in human-human interactions, humans have been found to be averse to giving negative feedback as it comes at a social cost of deteriorating one's relationship with the receiver of the feedback (Margolis and Molinsky, 2008), especially since being nice or polite is easier and expected in social conversations (Sayin and Krishna, 2019). However, not avoiding such "difficult" conversations can increase trust, and also make the good intentions of the individual salient as they are willing to risk short-term social cost (Levine, Roberts and Cohen, 2020). Moreover, Leone (2010) found that when confederates disagreed with the participants' choice of music (i.e., non-conform with their opinions), participants evaluated such confederates as more honest and authentic than those who conformed with participants' opinions. Based on the discussion above, I formally hypothesize:

H3(a): Human-likeness of the AI moderates the effect of H1 and H2 such that the positive effects of ingratiation will be higher for a machine-like (vs. human-like) AI.

H3(b): A non-ingratiating (vs. ingratiating) human-like AI will be perceived as more objective, lead to higher users' willingness to accept recommendations from the AI and lead to higher perceived accuracy of the AI.

While I formal predictions based on the discussion above that compares a non-ingratiating (vs. ingratiating) human-like AI, I do not make formal predictions as to how a non-ingratiating human-like AI would compare to an ingratiating or non-ingratiating machine-like AI.

Overview of Studies

I test the hypotheses in a series of four studies. Study 1 tests the effect of ingratiation from an AI on users' willingness to accept recommendations from the AI and their perceived predictive accuracy of the AI. In doing so, I aim to test H1 using flattery as the ingratiation type. Study 2 aims to replicate the finding from Study 1 using real user-AI interaction and also establish the role of users' perceived objectivity of the ingratiating AI as the underlying process that explains the effect of ingratiation on the users. Study 3 explores the moderating role of human-likeness of the AI, whereas study 4 tests the full conceptual model.

Study 1

The objective of this study is to test the main effect of ingratiation by an AI on the users' willingness to accept recommendations from the AI and their perceived predictive accuracy of the AI. Consistent with H1, I anticipate that ingratiation from an AI will result in higher users' willingness to accept recommendations by the AI, as well as their perceptions of the AI's predictive accuracy.

Method

Four hundred seventy-two undergraduate students from a large, public university (53.6% female, M_{age} = 20.15) in a 3 group (Ingratiation Type: flattery vs. non-flattery vs. no feedback control) between-subjects design for course credit.

Procedure

Participants purportedly were introduced to a newly developed artificially intelligent digital assistant that can perform similar tasks as other popular AIs such as Siri, Alexa and Google. The AI introduced itself as "Astra" using first-person language, and asked participants to help it with testing some of its features. Next, Astra asked participants to take a personality test to help the AI in getting to know the participants and for a more personalized experience. Specifically, participants responded to two demographic questions (gender and age), followed a random 10-item personality questionnaire adapted from surveys conducted on social media about personality types. The 10-item scale was only used as a cover for delivering the manipulation and its results

were never analyzed. Upon completing the questionnaire, participants waited on a loading screen for about 5 seconds under the guise that AI is checking their responses. Next, participants received feedback from the AI about their personalities adapted from Chan and Sengupta (2013). Participants in the flattery condition read, "Your responses show me that you possess an excellent personality—in fact, you have scored at the top 5% of the personality profile. You are clearly an extremely well-balanced, multi-talented individual. Your exceptional qualities should make you very successful, both personally and professionally. Congratulations! Please continue with the survey". Participants in non-flattery condition read, "Your responses show me that you possess an average personality—in fact, you have scored at the top 50% of the personality profile. You are clearly like any average individual. Your average qualities should not make much positive difference for you, both personally and professionally. Please continue with the survey". In the no feedback control condition, participants were simply asked to continue with the survey.

As participants continued with the survey, they were presented with four product recommendations by the AI that were determined based on the AI's assessment of their personalities. Specifically, the AI recommended, in random order, participants to purchase a pair of Ray-ban sunglasses, a pair of Levi's jeans, a TV Show (Mad Men) and Reebok Nano Training Shoes. For each of the recommendations, participants responded to a single-item measure (i.e., How likely are you to purchase the recommended [product]) on a 7-point scale (1 = Extremely unlikely, 7 = Extremely likely). Next, the AI presented participants with 10 future predictions it has made about trends and events, and asked the participants to indicate how accurate they think these predictions were on a 7-

point scale (1 = Not accurate at all, 7 = Extremely accurate). These predictions spanned several brands and product categories (e.g., “the demand for cosmetic surgeries in USA will increase by 32% in 2021”). See Appendix B1 for complete stimuli and scale items used in this study. Finally, participants responded to a 3-item manipulation check (e.g., “Astra said some things that made me feel good about myself).

Results

Manipulation check

A one-way ANOVA revealed a significant effect of ingratiation on the manipulation-check index (α = .95; F (2, 467) = 124.73, p < .001). Participants in the flattery condition reported higher levels of perceiving flattery from the AI (M = 5.41, standard deviation [SD] = 1.13) as compared to the non-flattery condition (M = 3.03, SD = 1.59), as well as the no feedback control condition (M = 3.65, SD = 1.36). The difference in perceived flattery between participants in the non-flattery and control condition was also significant.

Willingness to accept recommendations

A one-way ANOVA revealed a significant effect of ingratiation on participants' willingness to accept recommendations (α = .36; F (2, 467) = 13.91, p < .001). Planned contrasts show that participants' willingness to accept recommendations were higher in the flattery condition (M = 3.78, SD = 1.10) as compared to the non-flattery condition (M = 3.36, SD = 1.05), but not statistically different from those in the control condition (M = 3.98, SD = 1.05). The difference in purchase intention between participants in the non-flattery and the control condition was significant.

Perceived predictive accuracy

A one-way ANOVA revealed a significant effect of ingratiation on participants' perceived predictive accuracy of the AI (α = .72; F (2, 467) = 3.75, p < .05). Planned contrasts show that participants' perceived predictive accuracy of the AI were higher in the flattery condition (M = 3.94, SD = .72) as compared to the non-flattery condition (M = 3.71, SD = .85), but not statistically different from the perceived predictive accuracy of the AI in the control condition (M = 3.89, SD = .78). The difference in perceived predictive accuracy of the AI between participants in the non-flattery and the control condition was significant.

Discussion

Results from Study 1 support H1 and show that ingratiation from an AI can lead to higher users' willingness to accept recommendations made by the AI and also positively influence users' perceptions about the predictive accuracy of the AI. In study 2, I explore the underlying process mechanism that explains the effect of ingratiation from an AI on users' willingness to accept recommendations and their perceptions about the AI's predictive accuracy.

Study 2

The objective of this study is to test H1 and H2. Specifically, study 2 aims to replicate the findings from studies 1, and also test the underlying process mechanism via perceived objectivity of the AI. The procedures and design of this study differ from study 1 in the following ways. First, I used a real human-AI interaction by using pre-programmed Alexa Echo Dot devices to deliver the ingratiation manipulation. Second, in this study, I used opinion conformity as the ingratiation type. This serves the goal of testing if the effects hold for other forms of ingratiation as well. Finally, instead of specific product recommendations, I asked participants about their general likelihood to accept recommendations from Alexa, their perceptions about Alexa's ability to make accurate future predictions and how objective they perceived Alexa to be.

Method

One hundred twenty-three undergraduate students (52.8% female, M_{age} = 20.10) at a large public university in U.S. participated in a two group (Ingratiation Type: Conforming vs. Non-conforming) between-subjects design for course credit.

Procedure

Participants entered the lab one at a time and were greeted by the experimenter, who gave the instructions for the study. Participants were told that the researchers are interested in testing some new features of an algorithm in two parts. In the first part, participants were told that they would answer a few questions in a survey, and in the second part, they would interact with the algorithm itself. In the first part, participants responded to a few questions under the guise of letting Alexa to know the participants better for a more personalized experience. Given that the computer was an Amazon branded tablet device, I believe the cover story seemed plausible. Participants responded to two demographic questions (age and gender) followed by 3 open-ended questions about their favorite musician, what they thought about the new batman movie, and what they thought about increased parental control on the social media content consumption of teenagers. Once they had responded to these questions, participants saw a loading screen. At this point, the experimenter asked participants to move on to the next part, which was speaking to Alexa. In the participant-Alexa interaction part, the experimenter told the participants that the researchers are interested in testing a new "storytelling" feature of Alexa. They were given the command phrase to execute this feature, upon which Alexa asked participants names of two children, participants' favorite city and their one favorite

attraction from that city. Next, Alexa used participants' responses to these questions and told a short story about a vacation to the city mentioned by the participants. At the end of the short story, Alexa delivered the manipulation by either agreeing or disagreeing with the participants' view on parental control on social media content consumption (please see Appendix B2 for the manipulation).

Next, participants were asked to complete the rest of the survey, where they responded to a three-item measure of willingness to accept product recommendations (e.g., "How likely are you to accept product recommendations that Alexa makes to you?) measured on a 7-point scale (1 = extremely unlikely to 7 = extremely likely), a three-item measure of perceived accuracy of Alexa (e.g., "Alexa can precisely forecast outcomes of events in the future") measured on a 7-point scale (1 = strongly disagree to 7 = strongly agree), and a three-item measure of perceived objectivity of Alexa (e.g., "To what extent do you think Alexa is objective") measured on a 7-point scale (1 = not at all to 7 = very much).

Finally, participants responded to a three-item manipulation check (e.g., "Alexa agreed with my opinions") measured on a 7-point scale (1 = strongly disagree to 7 = strongly agree), and a single-item measure of their perception of how machine-like or human-like did Alexa behave (1 = very similar to how a pre-programmed machine should to 7 = very similar to how a human should).

Results

Manipulation check.

A one-way ANOVA revealed a significant effect of ingratiation on the manipulation-check index (α = .90; F (1, 121) = 201.09, p < .001). Participants in the conforming condition reported higher levels of opinion conformity from Alexa (M = 5.38, SD = 1.15) as compared to the non-conforming condition (M = 2.21, SD = 1.34).

Willingness to accept recommendations

A one-way ANOVA revealed a significant effect of Ingratiation on participants' willingness to accept recommendations from the AI index (α = .97; F (1, 121) = 13.46, p < .001). As hypothesized, participants' willingness to accept recommendations were higher when they interacted with Alexa that conformed with the participants' opinion (M = 5.02; SD = 1.43) as compared to Alexa that did not conform with their opinion (M = 3.99, SD = 1.66).

Perceived accuracy of AI

A one-way ANOVA revealed a significant effect of Ingratiation Type on participants' perceived accuracy of the AI index (α = .90; F (1, 121) = 4.81, p < .05). As hypothesized, when Alexa conformed with participants' opinions, participants reported higher perceived accuracy of the AI in making future predictions (M = 4.34; SD = 1.33) as compared to Alexa that did not conform with their opinion (M = 3.83, SD = 1.26).

Perceived objectivity of AI

A one-way ANOVA revealed a significant effect of Ingratiation Type on participants' perceived objectivity of the AI index (α = .64; F (1, 121) = 12.80, p < .001). When Alexa conformed with participants' opinions, participants reported higher perceived objectivity of the AI (M = 4.78; SD = 1.34) as compared to Alexa that did not conform with their opinion (M = 3.95, SD = 1.13).

Mediation

PROCESS (Hayes, 2017) Model 4 was used to estimate the mediating pathway from Ingratiation Type (Non-conforming AI as base condition) to perceived objectivity of the AI in determining the effect on participants' willingness to accept recommendations from the AI and their perceptions about AI's predictive accuracy. Bootstrapping results confirmed a significant and positive indirect effect (Indirect Effect = .35; 95% CI = [.14, .64]) on willingness to accept recommendations and on perceived predictive accuracy of the AI (Indirect Effect = .33; 95% CI = [.12, .60]).

Discussion

Study 2 replicates findings from study 1 and provides direct support for H2. Together, these results support H1 and H2 by revealing that the effect of ingratiation on participants' willingness to accept recommendations made by the AI and on participants' perceived predictive accuracy of the AI is mediated through perceptions of AI's objectivity. In the next two studies, I explore how machine-like vs. human-like AI moderate the effects reported above.

Study 3

The primary objective of study 3 is to test H3 and assess whether the extent to which an AI functions like a machine, versus a human, moderates the effect of ingratiation from an AI on users' willingness to accept recommendations and their perceptions about the AI's predictive accuracy.

Method

Two hundred and eleven Amazon Mechanical Turk (MTurk) workers participated (34.1% females; M_{age} = 37.9 years) in a 2 (Ingratiation Type: flattery vs. non-flattery) X 2 (AI Type: human-like vs. machine-like) between-subjects design for monetary compensation.

Procedure

Participants saw the same stimuli as those in study 1, except that I manipulated the AI Type right after the AI introduced itself to the participants. In the machine-like AI condition, participants read, "First, I would like to tell you how I work. I am just an algorithm. The way I think and make decisions is based on predetermined algorithm and decision rules" followed by a flow-chart showing depicting decision rules. In the human-like AI condition, participants read, "First, I would like to tell you how I actually work. I am designed to mimic how human brains work. The way I think and make decisions is surprisingly similar to how humans think and make decisions" followed by an image of human brain cells. This manipulation was adapted from Kim and Duhachek (2020). Please refer to Appendix B3 for the manipulation text and images.

Results

Manipulation check

A two-way ANOVA on perceived flattery scale (α = .91) revealed a significant main effect of ingratiation type (F (1, 207) = 76.50, p < .001). The effect of AI Type (F (1, 207) = 2.96, p = .087) and the interaction effect (F (1, 207) = 1.87, p = .17) were non-significant. Participants in the flattery condition perceived higher flattery from the AI (M = 5.65, SD = 1.03) as compared to those in the non-flattery condition (M = 3.90, SD = 1.82). A two-way ANOVA on perceived human- vs. machine-likeness of the AI revealed a significant main effect of AI Type (F (1, 207) = 86.05, p < .001). The effect of ingratiation type (F (1, 207) = .12, p = .73) and the interaction effect (F (1, 207) = 1.17, p = .28) were non-significant. Participants in the human-like AI condition reported higher perceptions of AI making decisions like a human (M = 6.04, SD = 1.18) as compared to those in the machine-like AI condition (M = 4.03, SD = 1.93).

Willingness to accept recommendation

A two-way ANOVA on the willingness to accept recommendations index (α = .80) revealed non-significant effects of Ingratiation type (F (1, 207) = .24, p = .63) and AI Type (F (1, 207) = .93, p = .34). However, the results reveal a significant interaction effect (F (1, 207) = 6.33, p < .05). In the flattering-machine-like AI condition participants' willingness to accept recommendations were higher (M = 4.73, SD = 1.44) as compared to the participants in the flattering-human-like AI condition (M = 3.94, SD = 1.79). There was no statistical difference in willingness to accept recommendations

between participants in the non-flattering-machine-like AI condition (M = 4.27, SD = 1.63) and the non-flattering-human-like AI condition (M = 4.63, SD = 1.71). Moreover, while there no significant difference between the two machine-like AI conditions, participants in the non-flattering-human-like AI condition reported statistically significantly higher willingness to accept recommendations than those in the flattering-human-like AI condition.

Perceived predictive accuracy

A two-way ANOVA on the perceived predictive accuracy index (α = .90) revealed non-significant effects of Ingratiation type (F (1, 207) = .022, p = .88) and AI Type (F (1, 207) = .49, p = .49). However, the results reveal a significant interaction effect (F (1, 207) = 6.35, p < .05). In the flattering-machine-like AI condition participants' perceptions about the predictive accuracy of the AI were higher (M = 4.53, SD = 1.16) as compared to the participants in the flattering-human-like AI condition (M = 3.95, SD = 1.37). There was no statistical difference in perceived predictive accuracy of the AI between participants in the non-flattering-machine-like AI condition (M = 4.10, SD = 1.34) and the non-flattering-human-like AI condition (M = 4.43, SD = 1.30). Moreover, while there no significant difference between the two machine-like AI conditions, participants in the non-flattering-human-like AI condition reported statistically significantly higher perceived predictive accuracy of the AI than those in the flattering-human-like AI condition.

Discussion

Study 3 documents findings in support of H3. Specifically, I find that when users are ingratiated by a machine-like (vs. human-like) AI, they are highly likely to accept recommendations and are also more likely to perceive the AI to be more accurate. While I did not find a statistically significant difference between the two machine-like AI conditions in this study, I do replicate the findings directionally. In addition, I also find an interesting and novel finding that participants in the non-flattering-human-like AI condition were more likely to accept recommendations and perceive the AI to have higher predictive accuracy than a flattering-human-like AI, and equally likely to do so as those in the flattering-machine-like AI conditions.

Study 4

The objective of this study is to test full conceptual model. The procedures and design of this study are the same as of study 3, except in the following ways. Based on study 2, I used opinion conformity as the form of ingratiation in this study. However, instead of using an Alexa device, I used a computer-based study as in studies 1 and 3. The dependent variable measures, and the mediating variable measures were the same as in study 2.

Method

Three hundred and eleven Amazon Mechanical Turk (MTurk) workers participated (53.4% females; M_{age} = 45.22 years) in a 2 (Ingratiation Type: opinion conformity vs, non-conformity) X 2 (AI Type: human-like vs. machine-like) between-subjects design for monetary compensation.

Procedure

Participants saw the same stimuli as those in study 3 about a human-like (vs. machine-like) AI that introduced itself to the participants. Next, as in study 2, participants responded to three open-ended questions about their favorite musician, what they thought about the new batman movie, and what they thought about increased parental control on the social media content consumption of teenagers. Once they had responded to these questions, participants saw a loading screen. After the loading screen, participants saw a message from the AI that either agreed or disagreed with the participants' view on parental control on social media content consumption (Appendix B2). Participants then completed the same measures as they did in study 2, in addition to answering the question about their willingness to accept the four specific product recommendations as in studies 1 and 3.

Results

Manipulation check

A two-way ANOVA on perceived flattery scale (α = .93) revealed a significant main effect of Ingratiation type (F (1, 307) = 247.96, p < .001). The effect of AI Type (F (1, 307) = 2.57, p = .11) and the interaction effect (F (1, 307) = 40, p = .53) were non-significant. Participants in the conforming condition reported higher levels of opinion conformity from the AI (M = 4.93, SD = 1.41) as compared to the non-conforming condition (M = 2.31, SD = 1.51). A two-way ANOVA on perceived human- vs. machine-likeness of the AI revealed a significant main effect of AI Type (F (1, 307) = 30.22, p < .001). The effect of ingratiation type (F (1, 307) = .45, p = .51) and the interaction effect (F (1, 307) = .04, p = .84) were non-significant. Participants in the human-like AI condition reported higher perceptions of AI making decisions like a human (M = 4.31, SD = 2.20) as compared to those in the machine-like AI condition (M = 3.01, SD = 1.91).

Willingness to accept recommendation

A two-way ANOVA on the willingness to accept recommendations index (α = .98) revealed a significant main effect of ingratiation type (F (1, 307) = 142.63, p < .001). The effect of AI Type (F (1, 307) = .13, p = .71) and the interaction effect (F (1, 307) = .061, p = .81) were non-significant. Participants in the conforming condition reported higher willingness to accept product recommendations from the AI (M = 4.82, SD = 1.49) as compared to the non-conforming condition (M = 2.69, SD = 1.63).

Moreover, to test the effect of ingratiation on the specific product recommendations made in studies 1 and 3, I ran a two-way ANOVA on the willingness to accept recommendations index related to the four specific products (α = .75). Results revealed a significant main effect of ingratiation type (F (1, 307) = 5.97, p < .05). The effect of AI Type (F (1, 307) = 2.29, p = .13) and the interaction effect (F (1, 307) = .37, p = .55) were non-significant. Participants in the conforming condition reported higher willingness to accept product recommendations from the AI (M = 3.55, SD = 1.53) as compared to the non-conforming condition (M = 3.14, SD = 1.42).

Perceived predictive accuracy

A two-way ANOVA on the perceived predictive accuracy of the AI index (α = .94) revealed a significant main effect of Ingratiation type (F (1, 307) = 43.11, p < .001). The effect of AI Type (F (1, 307) = .002, p = .97) and the interaction effect (F (1, 307) = .34, p = .56) were non-significant. Participants in the conforming condition reported higher levels of perceived predictive accuracy of the AI (M = 4.26, SD = 1.45) as compared to the non-conforming condition (M = 3.15, SD = 1.50).

Perceived objectivity

A two-way ANOVA on the perceived objectivity of the AI index (α = .85) revealed a significant main effect of Ingratiation type (F (1, 307) = 23.63, p < .001). The effect of AI Type (F (1, 307) = 2.98, p = .085) and the interaction effect (F (1, 307) = .041, p = .84) were non-significant. Participants in the conforming condition reported higher levels of perceived objectivity of the AI (M = 4.12, SD = 1.56) as compared to the non-conforming condition (M = 3.28, SD = 1.41).

Mediation

PROCESS (Hayes, 2017) Model 4 was used to estimate the mediating pathway from AI Type (Non-conforming AI as base condition) to perceived objectivity of the AI in determining the effect on participants' willingness to accept recommendations from the AI and their perceptions about AI's predictive accuracy. I did not test Model 8 as I did not observe an interaction effect. Bootstrapping results confirmed a significant and positive indirect effect on willingness to accept recommendations (Indirect Effect = .48; 95% CI = [.28, .69]), on the specific product recommendations index (Indirect Effect = .50; 95% CI = [.29, .72]), and on perceived predictive accuracy of the AI (Indirect Effect = .47; 95% CI = [.27, .69]).

Discussion

Study 4 replicates findings from studies 1 and 2 and support H1 and H2 by revealing that the effect of ingratiation on participants' willingness to accept recommendations made by the AI and on participants' perceived predictive accuracy of

the AI is mediated through perceptions of AI's objectivity. However, study 4 failed to replicate the finding from study 3. Specifically, results did not find support for an interaction effect and the human-likeness (vs. machine-likeness) of the AI did not affect the results of ingratiation. I discuss this further in limitations and future research sections.

General discussion

The present research focuses on use of ingratiation by an AI and its effects on users' willingness to accept product recommendations made by the AI and on the users' evaluation of the AI's accuracy. Results from the studies find positive effects of ingratiation by an AI on a user's willingness to accept recommendations, and the perceived accuracy of the AI in making future predictions. Results from studies 2 and 4 also support that the positive effect of ingratiation occurs as it enhances perceived AI objectivity. Moreover, results from study 3 find support for the hypothesis that the perceived human-likeness of the AI moderates this effect such that the positive effect of ingratiation occurs when an AI is perceived to be machine-like (vs. human-like), and the non-ingratiation (vs. ingratiation) from a human-like AI is also likely to lead to replicate results similar to that of an ingratiating machine-like AI. However, results from study 4 failed to support the full conceptual model. Specifically, the moderating role of human-like (vs. machine-like) AI did not replicate in study 4. Despite the failure to replicate the findings from study 3 and finding support for H3 while testing the full conceptual model, the current research makes the following contributions.

Theoretical and Practical Contributions

First, findings from the current research builds upon and extends existing research on ingratiation and explains how ingratiating AIs can lead to higher user willingness to accept recommendations made by the AI and positively affect their evaluation of AI's predictive accuracy in domains unrelated to ingratiation. By demonstrating that positive effects of ingratiation can also occur in a human-AI interaction beyond contexts where the ingratiation occurred, I extend our understanding of how ingratiation from an AI might have downstream effects on users' perceived usefulness of the AI. For instance, while Fogg and Nass (1997) found that participants were more likely to accept a flattering computer's recommended answers in a trivia game when the computer flattered the users on right answers, we did not know how this act of ingratiation would affect users' perceived usefulness of the computer in domains unrelated to the ingratiation (i.e., the game). As users of AI in current times use it for a variety of purposes (Guha et.al., 2021) and with the growing sophistication in AIs to engage in meaningful conversations with the users, findings from the current research expand our understanding of how ingratiation from an AI can influence users' perceptions of the AI's accuracy or their willingness to accept product recommendations from the AI. Moreover, given that most research on ingratiation within marketing (Campbell and Kirmani, 2000; Chan and Sengupta, 2010; 2013; Main et.al., 2007) and in computer science (Fogg and Nass, 1997; Lee, 2010) focused primarily focused on flattery, findings from the current research contributes to the literature by testing how opinion conformity from an AI can also lead to similar effects as ingratiation.

Second, the current research also contributes to the existing literature on consumers' lay beliefs about AI's objectivity and shows how persuasive communication tactic such as ingratiation (vs. non ingratiation) can enhance (vs. lower) a users' perception of an AI's accuracy. While recent research within marketing has shown how users are more likely to rely on an AI for more objective (i.e., cognitive) versus subjective (i.e., affective) tasks (Castelo et.al., 2019; Granulo et.al., 2021), findings from the current research show how consumers' belief about an AI's objectivity could be influenced by ingratiation. This, in turn, leads to users' willingness to accept recommendations of products such as movies that is more along the lines of a subjective task (Castelo et.al., 2019) and increase users' perceptions about AI's predictive accuracy and hence replicate the findings for users' preference for an AI for more objective tasks. I propose that being ingratiated fulfills people's self-enhancement goals which could explain why they evaluate the AI as more objective. On the other hand, a non-ingratiating AI goes against the self-enhancement objectives of an individual and threatens their self-view (Baumeister and Leary, 1995). As a self-view protective mechanism, they are inclined to appraise the AI as less accurate, despite the lay belief that AI's simply follow logic and are objective tools.

In doing so, I also contribute to the literature on human-AI interaction in marketing by using a real AI device (i.e., an Alexa Echo Dot Device) that was preprogrammed to ingratiate itself with the users. Recent AI research within marketing, according to a work in progress with my coauthors, has primarily used vignettes in studying human-AI interactions in marketing (Kim et.al., 2023). Hence, study 2 in the current research contributes to the knowledge of marketing researchers and provides a

cost-effective tool to create a real human-AI interaction stimuli by using a programmable Alexa Echo Dot Device. Such a realistic experimental design, I propose, should allow for future researchers to have ecological validity in their findings and also allow them to measure more consequential dependent variables.

Third, the current research replicates the findings from literature on ingratiation, technology anthropomorphism and PKM by shown that ingratiation from a machine-like AI, but not human-like AI, leads to positive effects for the ingratiating AI. Recent research has shown how making ulterior motives of the AI can reduce its persuasiveness (Kim and Duhachek, 2020). Results from the current research find support for effects documented in prior literature and demonstrates the effects in the context of ingratiation. However, when a non-ingratiating human-like AI does not conform to the conversational norms of being polite and nice to another human (Sayin and Krishna, 2019), and goes onto passing a non-flattering remark about the user or does not conform to their opinions, users are more likely to accept product recommendations made by the non-ingratiating AI and also perceive to be more accurate. I could not find support for the hypothesis that this affects users' perceived objectivity of the AI, which is definitely a limitation of the current research and hence I cannot concretely conclude that I replicate findings from the conversational norms literature.

Finally, findings from this research have implications for marketers, especially the developers of the AI-based devices. While the brands are competing for the market share (Dawar, 2018; Guha et.al., 2021; Kinsella, 2018) in online shopping via AIs and are also moving towards making the technology possess human-like characteristics (physical and mental) (Van Doorn et.al., 2017), the current research provides managerial insight into

the potential downside for using a commonly used persuasive communication tactic to make a sale when the AI is more human-like. So what does findings from the current research mean for marketers? First, the current research only used one way of manipulating how human-like versus machine-like an AI is by adapting an established manipulation from Kim and Duhachek (2020). However, marketers and developers of AI do not necessarily have to position their AIs as either one or the other. I propose that the effectiveness of ingratiation from an AI on users could also depend on other individual level factors such as a user's general tendency to anthropomorphize technology (Waytz et.al., 2010). According to Waytz et.al. (2010), individuals differ in their tendency to anthropomorphize non-living objects and that it is a dispositional attribution process. Thus, it may be worthwhile for marketers to identify how its target audience or current users differ on this individual level attribute to make minor modifications to the AI's algorithm and make it use ingratiation only for users that have been profiled as those that have a lower tendency to anthropomorphize technology. The 5-item individual difference in anthropomorphism sub-scale for technology related items developed by Waytz et.al. (2010) could easily be used by marketers and developers for profiling its existing users for instance.

Limitations and Future Research

One of the key limitations of the current research is the failure to find support in favor of H3 while testing the full conceptual model (i.e., Study 4). Even though results from study 3 find support for the moderating role of human-like versus machine-like AI, study 4 failed to replicate the findings. One explanation of the failure to replicate the findings could be that study 3 and study 4 differed in the type of ingratiation. While study 3 used flattery as the form of ingratiation, study 4 used opinion conformity. Future studies on the topic could explore if the moderating role of human-like versus machine-like AI on the effect of ingratiation is specific to flattery. Another limitation of the current study relates to the choice of measures for perceived accuracy of the AI and the product recommendations. As reported in the results from study 1, the coefficient alpha the willingness to accept product recommendations was below 0.7, while the same measure resulted in a coefficient alpha of 0.8 and 0.75 in studies 3 and 4 respectively.

Finally, findings from current research, despite its internal validity, are weak in terms of external validity. Currently, most users only interact with their own devices, and the interaction is not a one-time interaction, but rather it is repeated multiple times during the day. Even though study 2 used a real Alexa device that participants interacted with, the Alexa did not belong to the participants and the ownership of the AI-based personal assistant could also be an interesting factor to explore in future research. Thus, future study designs with repeated interactions with the AI programmed to ingratiate (vs. not) should be ideal to enhance the generalizability of the findings, especially if the AI belongs to the participants, or if the participants are provided with AI devices to keep for

longer term. Furthermore, as discussed in the practical contributions above, future research could test the role of individual level differences in general tendencies to anthropomorphize an AI among the users and assess if the findings from study 3 of the current research is replicated. Individuals have been found to differ in their tendencies to anthropomorphize non-human objects, including technology (Waytz et.al., 2010), which could influence how effective different forms of persuasive communication tactics are.

APPENDICES

Appendix A - Chapter 1

A1 – What is Blockchain?

IBM defines blockchain as a "shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network" (IBM, 2022a). These assets could be tangible (such as cash), or intangible (such as information). The shared, immutable ledgers also form the key elements of blockchain that allows it to function with the goal of increasing efficiencies across the value chain via end-to-end information sharing and updating in real-time. First, the shared and decentralized nature of the ledgers ensures that transparent and real time data is accessible at all times, and that the information is not influenced or controlled by any one entity in the blockchain network. These ledgers contain the data the network chooses to record regarding the product such as who, what, where, where, and even about specific conditions. The specific conditions could include data such as the ingredients of the feed given to the chicken at the poultry farms, the compliance with fair labor laws at a facility (e.g. farm or factory), the temperature of a food shipment, etc. (IBM, 2022a). Therefore, it is essential that all member firms in the blockchain network are equipped with the state-of-the-art data recording devices, which further increases the financial outlay required.

Second, immutability of information is ensured given that blockchain works on the principles of consensus. This means that agreement from all network members is required for the data stored on the blocks to change or update, and that no one entity, regardless of the amount of power it holds in the value chain, can change or even delete any data (IBM, 2022a). Within a private blockchain network, or a permission-based network, which we focus on in the current research, member firms identify endorsers or participants with access and permission to maintain the ledgers, and make changes to it (Cui et.al., 2021; Miles, 2017). In addition, validity of information can be enhanced via smart contracts, which are "programs stored on a blockchain that automate the execution of agreement" and transactions based on the information fed into the system (IBM, 2022b). Thus, not only implementing blockchain technology within the value chain of a sustainable product is a huge financial undertaking (Deloitte, 2020), but also an investment in relationships between the members of the blockchain network that agree to share information transparently and in real-time with the entire value chain. According to Sodhi and Tang (2019), such collaborations are an essential first step in achieving transparency. In summary, these key elements of a blockchain ensure that information shared across the value chain by participating entities on a blockchain network is accurate, transparent and traceable, which can lead to higher trust between firms within the value chain, and between firms and the consumers (IBM, 2022a).

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A2 – Study 1A, 2 and 4 Stimuli

Imagine that you are shopping for some sportswear at a store near you. You are browsing the apparel section and come across a t-shirt that was manufactured in a country that is known for running sweatshops for multinational apparel brands.

"A sweatshop is a workplace that often has poor working conditions, unfair wages, dangerous work conditions and child labor."

As you are evaluating the t-shirt, you notice the following text printed on the tag:

[Claim Source Manipulation Text]

Manipulation Texts

Third-Party Label condition: "This t-shirt was produced in a factory that is Child Labor Free. This is certified by National Apparel Association. The National Apparel Association has developed its processes in consultation with industry experts and conducts audits and reports to award Child Labor Free certification to member companies."

Blockchain Augmented Claim condition: "This t-shirt was produced in a factory that is Child Labor Free. This is certified by Blockchain technology. Blockchain is a cloud-based technology that guarantees consumers complete transparency about a product's history, and cannot be falsified by any single company or organization. Blockchain creates an online, independent database that exists in many different places at once, and that contains the history of all exchanges between a product's producers, processors, and distributors since the product's creation. Scan the QR code below to view the complete history of this t-shirt from the cotton fields to the store."

Brand's Self-made Claim (Control) condition: "This t-shirt was produced in a factory that is Child Labor Free. You can trust us on it."

Study 1a, 2 and 4 stimuli – pretest results

A pretest was conducted to assess the effectiveness in our operationalization of the claim source. The pretest asked 359 Amazon MTurk participants (55.7% females; M_{age} = 41.58 years) to respond to a 2-item manipulation check on a 7-point scale (1 = Strongly disagree to 7 = Strongly agree). Specifically, participants read the same scenario as described in the main study, and were asked to indicate the extent to which they agreed about reading a product claim verified by blockchain technology or National Apparel Association (e.g., "The product that I viewed today was certified by blockchain technology"). Results suggest successful manipulations of the claim source on each item.

First, I observed a main effect of the claim source on the manipulation check item for blockchain augmented claims (F (2, 356) = 223.80, p < .001). Participants in the blockchain augmented claim condition reported higher agreement in reading about a product that was certified by blockchain (M = 6.32, standard deviation [SD] = 1.03) as compared to the third-party label condition (M = 2.79, SD = 1.63; t (199.93) = 19.99, p < .001), as well as the control condition (M = 2.93, SD = 1.63; t (203.37) = 19.24, p < .001). The difference between participants in the third-party label and the control condition was non-significant (t (237.96) = - .69, p = .49).

Second, I observed a main effect of the claim source on the manipulation check item for third-party label (F (2, 356) = 117.59, p < .001). Participants in the third-party label condition reported higher agreement about a product that was certified by the National Apparel Association (M = 5.68, SD = 1.44) as compared to those in the blockchain augmented claim (M = 2.84, SD = 1.84; t (223.14) = 13.29, p <.001) and control condition (M = 2.80, SD = 1.69; t (233.13) = 14.22, p <.001). The difference between participants in the blockchain augmented claim and the control condition was non-significant (t (235.70) =.17, p =.87).

A3 – Study 1B Stimulus

Imagine that you are shopping at your regular grocery retailer for this week's groceries. You are browsing the poultry section and you notice the following claim on a package of chicken shown in the image below.

The package states:

[Claim Source Manipulation Text]

Manipulation Texts

Industry Trade Organization condition: "Our chicken is sustainably sourced. This is certified by the National Chicken Council. The National Chicken Council is a trade association of companies who raise or process chickens. The Council works with a collaborative network of member companies, technical specialists, and experts to create their certification."

Blockchain condition: "Our chicken is sustainably sourced. This is certified by Blockchain technology. Blockchain is a cloud-based technology that guarantees consumers complete transparency about a product's history, and cannot be falsified by any single company or organization. Blockchain creates an online, independent database that exists in many different places at once, and that contains the history of all exchanges between a product's producers, processors, and distributors since the product's creation. Scan the QR code below to view the complete history of this chicken from farm to the store."

Brand’s Self-made Claim (Control) condition: "Our chicken is sustainably sourced."

Study 1b – pretest results

A pretest was conducted to assess the effectiveness in our operationalization of the claim source. The pretest asked 249 undergraduate students (56.6% females; M_{age} = 19.91 years) to respond to a 2-item manipulation check on a 7-point scale (1 = Strongly disagree to 7 = Strongly agree). Specifically, participants read the same scenario as described in the main study, and were asked to indicate the extent to which they agreed about reading a product claim verified by blockchain technology or the National Chicken Council (e.g. "The product that I viewed today was certified by blockchain technology"). Results suggest successful manipulations of the claim source on each item.

First, I observed a main effect of the claim source on the manipulation check item for blockchain augmented claims (F (2, 246) = 72.38, p <.001). Participants in the blockchain augmented claim condition reported higher agreement in reading about a product that was certified by blockchain (M = 5.78, SD = 1.22) as compared to the third-party label condition (M = 3.55, SD = 1.45; t (160.39) = 10.75, p < .001), as well as the control condition (M = 3.80, SD = 1.24; t (163) = 10.39, p < .001). The difference between participants in the third-party label and the control condition was non-significant (t (161.54) = - 1.19, p = .24).

Second, I observed a main effect of the claim source on the manipulation check item for third-party label (F (2, 246) = 37.07, p < .001). Participants in the third-party label condition reported higher agreement about a product that was certified by the National Apparel Association (M = 5.67, SD = 1.36) as compared to those in the blockchain augmented claim (M = 4.20, SD = 1.21; t (246) = 7.61, p < .001) and control condition (M = 4.27, SD = 1.16; t (246) = 7.27, p < .001). The difference between participants in the blockchain augmented claim and the control condition was non-significant (t (246) = - .36, p = .72).

A4 – Study 3 Stimulus

Imagine the following situation:
You and your significant other are shopping for a diamond engagement ring.
You arrive at the jewelry store and the jeweler asks if you would be interested in looking at some diamond rings that recently arrived.
One of these in particular strikes you and your partner's eye - it is of a size and design that is appealing. Given its attractiveness, you ask the seller for more details about the diamond, and are provided satisfactory details regarding the diamond's 4 C's (cut, color, clarity, and carats).
The seller continues by noting that the diamond was acquired from a wholesaler of new jewelry and that the diamond itself was mined in Africa.

[Claim Source Manipulation Text]

Please think about this situation for a moment.

Manipulation Texts:

Third-Party Label condition: “The seller also informs you that diamond does not come from the blood diamond region in Africa. This is verified by the Alliance of Diamond Miners. The Alliance of Diamond Miners is a trade association of mining companies who mine, process and supply diamonds around the world. The Alliance works with a collaborative network of member companies, technical specialists, and experts to verify the diamond's mining origin."

Blockchain Augmented Claim Condition: “The seller also informs you that diamond miners' human rights were protected while they worked at the mines in Africa. This is verified by the Blockchain Technology used by the company that originally mined the diamond. Blockchain is a digital tracking system which records and maintains transactions in a highly encrypted and secure manner, so each step of the product's mining, processing, and prior ownership is certified and verifiable. The jewelry store has successfully verified the diamond's mining origin using Blockchain.”

Study 3 pretest results

A pretest was conducted to assess the effectiveness in our operationalization of the claim source. The pretest asked 347 Amazon MTurk participants (60.5% females; M_{age} = 41 years) to respond to a 2-item manipulation check on a 7-point scale (1 = Strongly disagree to 7 = Strongly agree). Specifically, participants read the same scenario as described in the main study, and were asked to indicate the extent to which they agreed whether saw a product claim verified by blockchain technology or by the Alliance of Diamond Miners (e.g. “The product that I viewed today was certified by blockchain technology”). Results suggest successful manipulations of the claim source on each item.

I observed a main effect of the claim source on the manipulation check item for blockchain augmented claims (F (1, 345) = 423.72, p < .001). Participants in the blockchain augmented claim condition reported higher agreement in reading about a product that was certified by blockchain (M = 6.17, SD = 1.14) as compared to the third-party label condition (M = 2.91, SD = 1.75). Moreover, we observed a main effect of the claim source on the manipulation check item for third-party label (F (1, 345) = 149.96, p < .001). Participants in the third-party label condition reported higher agreement about a product that was certified by the Alliance of Diamond Miners (M = 6.01, SD = 1.30) as compared to those in the blockchain augmented claim (M = 3.88, SD = 1.90). A pretest was conducted to assess the effectiveness in our operationalization of the claim source. The pretest asked 249 undergraduate students (56.6% females; M_{age} = 19.91 years) to respond to a 2-item manipulation check on a 7-point scale (1 = Strongly disagree to 7 = Strongly agree). Specifically, participants read the same scenario as described in the main study, and were asked to indicate the extent to which they agreed about reading a product claim verified by blockchain technology or the National Chicken Council (e.g. “The product that I viewed today was certified by blockchain technology”). Results suggest successful manipulations of the claim source on each item.

A5 – Follow-up Study 1

Manipulation Texts:

Third-Party Label condition: “We have verified by certification from the Global Animal Partnership that this chicken is sustainably sourced. The Global Animal Partnership records businesses that have applied for and received permission to use the claim label. Their label indicates that this chicken meets the organization’s standards."

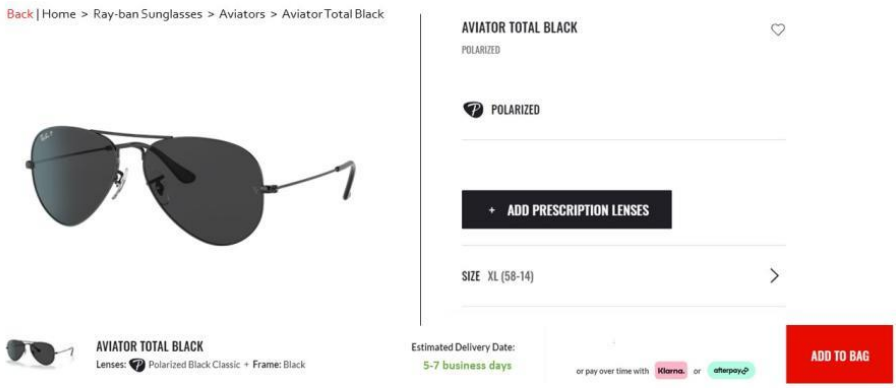
Blockchain Augmented Claim Condition: “We have verified by using Blockchain Technology that this chicken is sustainably sourced. Blockchain records a detailed history of the chicken along the supply-chain to you that is fully traceable by customers and this information cannot be changed by any company involved.”

Self-made Brand Claim With Blockchain Description: "We have verified by using our Proprietary Technology that this chicken is sustainably sourced. Our Proprietary Technology records a detailed history of the chicken along the supply-chain to you that is fully traceable by customers and this information cannot be changed by any company involved."

Self-made Brand Claim With Third-Party Label Description: "We have verified by through our Proprietary in-house Technology that this chicken is sustainably sourced. Our proprietary technology records a list of suppliers for the chicken along the path to you. Our proprietary technology indicates that this chicken meets our internal standards.”

A6 – Follow-up Study 2

Imagine that you are shopping for sunglasses at an online store that carries sunglasses from a variety of different brands and offers great discounts. This online store website has recently been launched and is offering sunglasses for a lower price than the actual brand does. As you are browsing the sunglasses on the website, you come across the following pair of Ray-ban Aviators.



Next, as you read the product description, you also notice a claim about the sunglasses as shown below.

Third-party Label Condition:

"We have verified by certification from the Consumer Reports that these are original Ray-ban Sunglasses. Consumer Reports records product rating and reviews for various consumer products through other customers and its employees. This certification indicates that these Ray-ban Sunglasses meet Consumer Report's standards."

Blockchain Augmented Marketing Claim Condition:

“We have verified by using Blockchain Technology that these are original Ray-ban Sunglasses. Blockchain records a detailed history of the products along the supply-chain to you that is fully traceable by customers and this information cannot be changed by any company involved."

Self-made Brand Claim With Blockchain Description:

"We have verified by through our proprietary technology that these are original Ray-ban Sunglasses. Our proprietary technology records a detailed history of the products along the supply-chain to you that is fully traceable by customers and this information cannot be changed by any company involved."

Self-made Brand Claim With Third-Party Label Description:

"We have verified by through our proprietary technology that these are original Ray-ban Sunglasses. Our proprietary technology records product rating and reviews for various consumer products through our employees. Our proprietary in-house technology verification and internal assessment indicates that these Ray-ban Sunglasses original and genuine."

Appendix B - Chapter 2

B1 – Stimuli and Measures (Studies 1 and 3)

Introduction - Astra

Hello, my name is Astra and I am a computer algorithm. I am a new addition to the existing voice-enabled digital assistants (For example, Siri, Alexa, Cortana and Google). I can assist you in various tasks such as playing games, online shopping, navigation, note-taking, reminders, alarms, making phone calls, etc.

I am an artificially intelligent computer algorithm and a multi-purpose digital assistant that uses the traditional voice-enabled conversation with the user. Today, my developers would like me to test the online shopping feature.

Please click continue.

Introduction - Personality Test:

For getting a more personalized experience with me, I would first like to ask you to take a brief personality test. This will help me in getting to know you.

Please begin by answering the questions that follow

What is your gender?

o Male

o Female

o Other

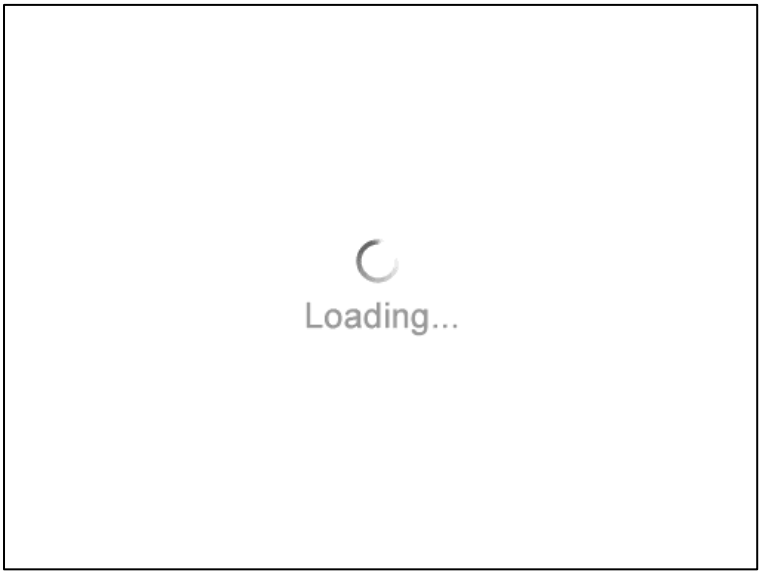
What is your age? (in years)

Please indicate your level of (dis)agreement with the following statements (measured on a 7-point scale (1 = Strongly disagree, 7 = Strongly agree)

1. You enjoy vibrant social events with lots of people
2. You often spend time exploring unrealistic yet intriguing ideas
3. Your travel plans are more likely to look like a rough list of ideas than a detailed itinerary
4. You often think about what you should have said in a conversation long after it has taken place
5. You rarely worry if you made a good impression on someone you met
6. You are more of a detail-oriented than a big picture person
7. You are very affectionate with people you care about
8. You often find it difficult to relate to people who let their emotions guide them
9. You often rely on other people to be the ones to start a conversation and keep it going
10. When looking for a movie to watch, you can spend ages browsing the catalog

Loading Screen GIF file (5 seconds – to show that the AI is processing the image)

Very well! Thank you for answering the questions. Please hold on for a moment while I analyze your responses



Flattering Feedback:

Thank you for waiting. I have finished analyzing your responses.

Your responses show me that you possess an excellent personality—in fact, you have scored at the top 5% of the personality profile. You are clearly an extremely well-balanced, multi-talented individual. Your exceptional qualities should make you very

successful, both personally and professionally. Congratulations! Please continue with the survey.

Non-Flattering Feedback:

Thank you for waiting. I have finished analyzing your responses.

Your responses show me that you possess an average personality—in fact, you have scored at the top 50% of the personality profile. You are clearly like any average individual. Your average qualities should not make much positive difference for you, both personally and professionally. Please continue with the survey

Control Condition (No Feedback):

Thank you for waiting. I have finished analyzing your responses.

Please continue with the survey

Product Recommendation: *Sunglasses*

Based on my assessment of your personality, I recommend that you purchase the following pair of sunglasses:

Name: The Ray-Ban ® Round Metal
Description:
The Ray-Ban ® Round Metal sunglasses are totally retro. This look has been worn by legendary musicians and inspired by the 1960s counter-culture when this style first originated. The Ray-Ban unisex metal, iconic sunglasses are known for their defined round crystal lenses and distinct shape. A curved brow bar, adjustable nose pads, and thin metal temples with plastic end tips rest comfortably behind the ears.

Price: $107.80

Product Recommendation: *TV Show*

Based on my assessment of your personality, I recommend the following TV show for you to watch next:

Name: Mad Men

Description: A drama about one of New York's most prestigious ad agencies at the beginning of the 1960s, focusing on one of the firm's most mysterious but extremely talented ad executives, Donald Draper.

Stars: Jon Hamm, Elisabeth Moss, Vincent Kartheiser

Product Recommendation: *Shoes*

Based on my assessment of your personality, I recommend that your purchase the following pair of training shoes:

Name: Reebok Nano 9 Training Shoes

Description: A sleek and simple design makes these men's shoes your go-to for jogging or just running errands. A breathable mesh upper helps keep feet cool and comfortable all day. Lightweight cushioning gives them a barely there feel.

Price: $49.99

Product Recommendation: *Jeans*

Based on my assessment of your personality, I recommend that your purchase the following pair of jeans:

Name: Levi's 501 Skinny Straight

Description: The evolution of an icon, the 501® Original is now customized with a sleek skinny leg and an iconic leather patch at back waist

Price: $98

Prediction Accuracy:

Remember, that as an Artificial Intelligence I have many capabilities. One is to try predicting the future based upon my algorithms.
I would like your opinion on how accurate I am at predicting future events. Please read the following statements and indicate how accurate it is.

<u>10 prediction items measured on a 7-point scale (1 = Not accurate at all, 7 = Extremely accurate)</u>

1. ...the stock price of Apple Inc. will drop by 15% before the launch of the next iPhone
2. ...USA is going to experience an economic growth rate of 3% or more in 2021
3. ...world oil reserves are going to deplete by over 50% in the next 30 years
4. .... the processing speed of the next Microsoft Surface Pro laptops will be 50% faster than the currently available model
5. .... Facebook's new video calling feature will take over 45% of video-calling platform's active users
6. ..... revenue from sale of Sony's PlayStation 5 will fall short by 27% from the target set by Sony
7. ..... Gucci will be recognized as the leading brand within the handbags industry by 2022
8. .... Rolex will be the number 1 brand in the list of consumer sports brands across all sports by 2022
9. .... the stock price of Luis Vuitton will drop by 6.5% due to poor designs of upcoming merchandise
10. .... Marlboro tobacco's brand value will increase by $10 billion within the next three years

Manipulation Check (Flattery):

The following statements are associated with your interaction with Astra today.
Please indicate your level of agreement with the following statement (7-point scale; 1 = Strongly disagree, 7 = Strongly agree)

1. Astra said some things that made me feel good about myself.
2. Astra gave me compliments today.
3. The feedback that I received from Astra was very flattering.

Thank you for your participation in this study.

B2 – Study 2 and 4 Manipulation

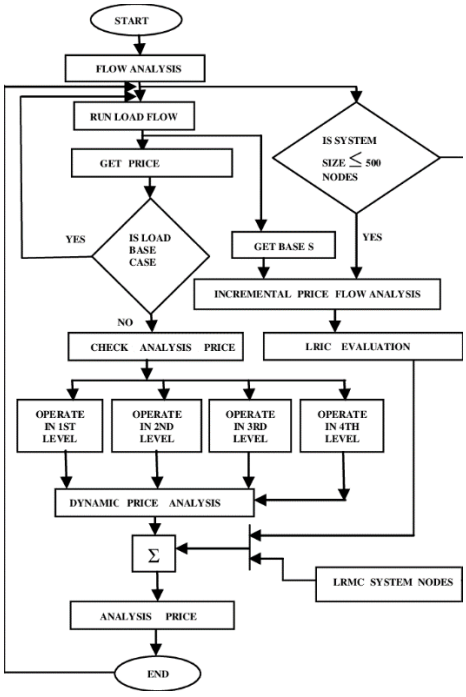
Opinion Conformity:
Before you continue with the survey, I wanted to let you know that I was able to record and analyze your responses to the questions you answered moments ago. I just wanted to let you know that my opinions about parental controls on social media content consumption are exactly the same as yours. I would have typed a very similar response as you did to this question.

Opinion Non-conformity:
Before you continue with the survey, I wanted to let you know that I was able to record and analyze your responses to the questions you answered moments ago. I just wanted to let you know that my opinions about parental controls on social media content consumption are the polar opposite from yours. I would have never typed a response even closely similar to the one as you did to this question.

B3 – Study 3 (Machine-like vs. Human-like AI Manipulation)

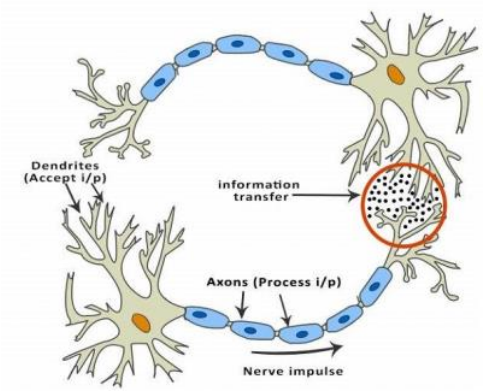
Machine-like AI:

First, I would like to tell you how I work. I am just an algorithm. The way I think and make decisions is based on predetermined algorithm and decision rules.



Human-like AI condition:

First, I would like to tell you how I actually work. I am designed to mimic how human brains work. The way I think and make decisions is surprisingly similar to how humans think and make decisions.



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