11th International Conference on Customization and Personalization MCP 2024
The Power of Customization and Personalization in the Digital Age
September 25-26, 2024, Novi Sad, Serbia

Individual Thinking Style, Salience Bias, and the Mass Customization Co-Design Experience

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Abstract: *The focus of Industry 5.0 is society and individual wellbeing. Consumer wellbeing (CWB) arises from the consumption of offerings that satisfy personal needs. Enabling consumers to make good decisions optimizes selection of these fulfilling offerings. Enhancing the value of the mass customization (MC) co-design experience between consumer and provider should yield CWB. Behavioral economics (BE) sheds light on the nature of decision choices and MC co-design toolkit features to evoke and provide optimal consumer value. Individual differences contribute to forming consumer perceptions of value across domains. Specifically, individual thinking style influences consumer value of the MC co-design experience and its offerings. Via feedback from a thinking style tool, educating and equipping the consumer to identify and capture insights into her unique decision style, cognitive biases and heuristics, and their effects on perceived value, empowers her to discern and choose providers whose offerings appeal to and best address her individual preferences. Knowing consumers possess this knowledge should motivate providers to compete for patronage and nurture collaborative relationships enabled by the MC co-design toolkit. Exploring BE concepts of salience bias and experimental interventions such as real-time feedback, reminders, personalized nudges and defaults, and boosts, CWB is achievable by motivating the consumer's use of individual thinking style to enhance the value of the MC co-design experience. We propose a randomized controlled trial (RCT) for empirical study.*

Keywords: ***Mass Customization, Behavioral Economics, Individual Thinking Style, Individual Differences, Salience Bias, Industry 5.0***

1. INTRODUCTION

The foundations of Industry 5.0 are threefold - human centricity, resilience, and sustainability (European Commission, 2021). The first of these focuses on society and individuals' wellbeing. "At its heart, Industry 5.0 reflects a shift from a focus on economic value to a focus on societal value, and a shift in focus from welfare to wellbeing … a shift in perspective from people serving organizations, to organizations serving people" (Kraaijenbrink, 2022). Wellbeing arises from the consumption of offerings that satisfy a person's needs. Enabling consumers to make good decisions optimizes the selection of fulfilling offerings. Enhancing the value of the MC co-design experience between consumer and provider may yield consumer wellbeing (CWB). Behavioral economics (BE) sheds light on the nature of decision choices and ideal MC co-design toolkit features that evoke and provide optimal value to the consumer.

Individual differences in thinking style contribute to forming MC consumer perceptions that influence the value of the MC co-design experience and its offerings (Turner et al., 2020). Via feedback from a thinking style tool, educating and equipping consumers to identify and capture insights into their unique decision styles, cognitive biases and heuristics, and their effects on perceived value empowers them to discern and choose providers whose offerings appeal to and best address individual preferences. This should motivate providers to compete for patronage and nurture collaborative relationships enabled by the MC co-design toolkit.

How one processes information is unique to each person, and the experiences, perceptions, and perspectives one forms derive from the influence of a variety of factors. Helping the consumer to heighten awareness of how she thinks can assist and increase her confidence in making choices most beneficial to what she values. We suggest MC toolkits be structured to 1) increase the awareness of individual thinking styles to enhance perceived value of the MC co-design experience, and 2) prompt behavioral biases and heuristics as advantageous to consumer decision-making during the MC co-design experience.

Of the biases and heuristics identified in the BE literature, several are apropos for MC study and toolkit design. Turner and Faga (2022) considered how comparative features of MC toolkits (Turner et al., 2011) can address distinction bias (Hsee and Zhang, 2004). This bias occurs when we overestimate the value of the differences between simultaneous choices, but when each alternative is examined independently, we focus on features most important to satisfying our needs (Pilat and Krastev, n. d.). Turner and Watts (2023) proposed MC toolkits could help reduce harmful outcomes for patients by mitigating cognitive biases affecting healthcare providers. This paper extends these works by suggesting MC co-design toolkits can address salience or perceptual bias, the tendency of human beings to focus on attention-grabbing information over less prominent data equally or more relevant to the decision at hand (Pilat and Krastev, n.d. 2).

In this paper, we contend that raising consumer awareness of individual thinking style during the MC co-design experience should increase perceived value of the process, especially when the experience is salient to individual thinking style. Such leads to satisfaction with the experience and its offering and generates wellbeing for the consumer. The MC consumer's awareness of her thinking style salience improves her ability to choose the MC providers who best serve her needs and preferences. We proceed to explore how BE's concept of salience bias and associated experimental interventions - real-time feedback, reminders, personalized nudges, defaults, and boosts - may increase consumer use of individual thinking style to enhance value of the MC co-design experience and prompt providers to structure MC toolkits to optimize consumer wellbeing. Though we offer preliminary assumptions to consider, the goal of this paper is not to test hypotheses. Rather, we propose a randomized controlled trial (RCT) as a method whose results may inform development of a framework for the purposeful design of value-laden MC toolkits incorporating features informed by both MC and BE.

We continue as follows: Section 2 reviews extant literature addressing consumer wellbeing, the evolution of BE and MC scholarship on behavioral drivers. Section 3 presents the concepts of individual differences, specifically thinking style, salience bias and related BE tools useful to enhance thinking style. Section 4, discusses methodology, offers preliminary hypotheses but focuses on a proposed RCT. Section 5 presents conclusions, limitations, and suggestions for future research.

2. LITERATURE REVIEW

2.1 Consumer Wellbeing

Consumer wellbeing (CWB), a multifaceted construct, is the satisfaction of needs derived from the consumption of offerings (Daskalopoulou, 2014). Two components comprise CWB, physical health and economic wealth. Since consumption affects society, the role CWB plays is of significance. For example, people's decisions to consume eco-friendly products promotes sustainable use of the earth's resources. Daskalopoulou (2014) posits that a person's quest for quality of life generates pursuit of health and happiness, stability, and social responsibility, respectively, such that CWB is the product of the individual's lifelong cognitive and affective assessments. As such, improving consumer decision making benefits both person and society.

2.2 A Brief History of Behavioral Economics

The combination of economics and psychology, BE is the study of how consumers make decisions, specifically why human beings tend to make poor economic choices. In traditional or neoclassical economics, the rational consumer is one who knows her preferences, considers the pros and cons of all information relevant to a decision, then makes those choices that maximize her self-interest (news.uchicago.edu, n.d.). Suboptimal decisions are described as irrational because they fail to maximize a person's utility (Bentham, 1780; Kocik, 2021).

Simon (1956) introduced the concept of bounded rationality: the inability of an individual to make a rational decision is due to restrictions in cognition, time, and other constraints. Considered the fathers of behavioral economics (BE), Tversky and Kahneman (1974) conceived that human decisions are inherently prone to systematic cognitive biases and heuristics, or mental shortcuts, as well as influenced by decision making context or situational factors (Thaler and Sunstein, 2008). According to Reisch & Zhao (2017), "Fundamentally, BE is concerned with the question of how people actually behave in decision-making situations and how their choices can be improved so that consumers' welfare is enhanced (p. 3)." BE has evolved to express two main perspectives, human biases are errors in logic (Tversky and Kahneman, 1974), and heuristics are natural intuitive judgments (Gigerenzer and Goldstein, 1996). These two views lend support for applied research on the MC consumer's perception of value derived from the manner in which one thinks and makes decisions, and how such optimizes the MC co-design experience.

2.3 Behavioral Drivers in MC

MC scholars have studied behavioral drivers while testing interventions since the 1990s to uncover the nature of and influences on the consumer's perception of value of MC offerings and experience. The literature evolved to discover tangible utility of transactional values, like product utility and willingness-to-pay (WTP) (Franke and Piller, 2004; Dellaert and Stremersch, 2005) to

theoretical and empirical work on relational value derived from intangible benefits, including desires for control, enjoyment, creativity, uniqueness, psychological ownership, and others (Schreier, 2006; Franke, et al., 2008; Franke and Schreier, 2008, 2010; Dellaert and Dabholkar, 2009; Franke et al., 2010; Merle et al., 2010; Turner et al., 2020). Scholars established the importance of the MC co-design toolkit in fulfilling consumer preferences, underscoring the necessity of enhancing choice through managing and mitigating the complexity of decision making during the MC process.

3. INDIVIDUAL DIFFERENCES, INDIVIDUAL THINKING STYLE, SALIENCE BIAS, AND BE TOOLS

As one of Industry 5.0's three mandates, wellbeing generated from people-centricity expands the need for understanding how individual uniqueness, like those expressed in thinking style, informs consumer behavior in MC.

3.1 Individual Differences

Firms providing customized or individualized offerings want to increase consumer loyalty as a source of sustainable competitive advantage. This underscores the significance of gaining and operationalizing insights yielded from detailed knowledge of individual consumers. Properly understanding and acting via the heterogeneity of individual differences affords opportunities to nurture collaborative, productive relational value. MC scholars suggested future research should explore individual differences including those related to information processing (Franke and Piller, 2003; Schreier, 2006; Dellaert and Dabholkar, 2009; Merle et al., 2010, Turner, et al., 2011, 2020). Hunt et al. (2013) found individual differences caused consumers to value MC products differently.

Surprisingly, and despite its focus on improving people's judgment and decision making, the behavioral economics field has been slow to embrace individual differences (Appelt et al., 2011; Sunstein, 2012; Mills, 2021; Berthet and de Gardelle, 2023). Appelt et al. (2011) proffered "[t]he decisions made by individuals are widely recognized as being affected by three sets of factors—decision features, situational factors, and individual differences" (p. 252). Sunstein (2012) chastised scholars and practitioners for designing decision interventions for mass populations rather than for heterogeneity of individuals within target groups, despite proven effectiveness of the latter approach. Rachlinski (2006) noted behavioral law's failure to recognize "the complexity of human cognition and the incredible variation … among consumers [who] most certainly do not commit identical [cognitive] errors" (p. 208). Mills (2021) describes the intervention, personalized nudging, as one geared to individual differences which should increase societal and individual welfare.

3.2 Individual Thinking Style

Individual thinking style describes and recognizes individual differences in cognitive and information processing, recognizing consumer uniqueness. Neuroscience literature notes that while human beings share types of thinking styles, exactly how each one of us processes information differs, even if we arrive at the same decision outcome (Turner, 2018). The concept of dual or parallel thinking posits that each person has two interdependent ways of thinking, rational and intuitive, either taking center stage when prompted by the nature of the task, be it analytical or experiential (Epstein, 2003). Novak and Hoffman (2009) showed that using either of the two thinking styles was situation specific, findings supported by Turner et al. (2020) who demonstrated individual thinking style increases the consumer's perceived value of the MC experience. De Bellis et al. (2019) found MC configurator features congruent with an individual's culture-specific processing style generated greater purchase intention and resulting satisfaction with the MC offering.

MC co-design toolkits including how an individual processes information should enhance behavioral drivers to mitigate costs and increase experiential benefits, guiding navigation and customization decisions. Given MC, behavioral economics, psychology, and neuroscience literature suggest individual differences influence consumer decision-making, we contend that educating and equipping consumers to identify and capture insights into their unique thinking styles should empower them to select providers whose MC offerings best address and appeal to their individual preferences, thereby increasing consumer wellbeing.

We proceed to describe BE concepts - salience bias, feedback interventions, personalized nudging and defaults, and boosts - and why designing the MC co-design toolkit with these in mind can optimize individual thinking style and enhance consumer value of the MC co-design experience, leading to improved loyalty and higher profits.

3.3 Salience Bias

Salience bias is one behavioral driver that affects consumer wellbeing. The construct is studied across a breadth of disciplines. For example, social psychology examines role-identity salience, life purpose and wellbeing (Thoits, 2012). Political science considers voter salience for candidates (see Rabinowitz et al., 1982). Marketing explores effects of brand salience on consumer preferences (Krech and Crutchfield, 1948). And management addresses organizations' stakeholder salience (Mitchell et al.,

1997). Regardless of field, salience is a response to a stimulus.

Behavioral economics defines salience bias as the inclination to pay more attention to attention-grabbing information or items while disregarding those that are less emphasized but may be of more significance to making a decision (Bordalo et al., 2013, 2022; Tiefenbeck, 2018; Pilat and Krastev, n.d.). This tendency may cause a consumer to ignore factors leading to suboptimal decision making. What triggers an individual's attention and activates preference (bias) for a given idea or object, resides in the processes of psychology, personality, and the way the brain stores and retrieves knowledge and memory (see Higgins, 1996, for a review; Bordalo et al., 2013, 2022). "Put simply, some things are noticed more easily, and some things are easier to retrieve from long-term memory, so they have a higher propensity to enter working memory" (Romaniuk and Sharp, 2004, p. 327).

In work on salience bias, empirical studies expound the value of increased awareness to data and resources useful to inform consumer decisions (Pilat and Krastev, n.d.; Bordalo, 2022; Tiefenbeck, 2018). We can act at the time to seek and consider additional data or resources that assist us to make a more deliberative, better-informed decision (Pilat and Krastev, n. d.). Bordalo et al. (2022) assert that individuals more likely to benefit from greater awareness are those who tend toward top-down or analytical thinking. For those whose tendency is to think in a more affective, bottom-up manner, enlightenment can evoke memories of previous experiences whose outcome was negative. This overemphasis of a past result that is irrelevant to the situation at hand leads to decision-making that can be detrimental to one's welfare. Bordalo et al. (2022) offers an example: an analytical thinker is likely to consider pros and cons of buying mobile phone insurance and consider the likelihood of needing it. The affective thinker's recall of her horror at dropping, but not damaging, her previous phone may provoke the insurance purchase even though she never needed it before. This consumer might benefit from a better understanding of her decision proclivity to pay more attention to a memory of this nature.

Therefore, the nature of how information is attended to by the individual becomes an important factor in helping consumers make consumption decisions and achieve wellbeing. Along with increasing awareness of thinking style, information offered must be salient to that style. Achieving thinking style salience requires ensuring the MC co-design process helps the consumer focus on achieving a specific use goal or guides her to honor a unique preference fulfilled by the MC offering. Building the MC co-design toolkit in ways that make it advantageous to evoke or dampen salient biases and improve thinking style awareness can enhance the value perception of the MC experience.

Both the individual and the provider can benefit from collaborative interactions focused on greater awareness lowering the former's salience bias towards data less relevant to addressing her needs. MC co-design toolkits should be designed to guide an individual to pay attention to elements of the MC process that heighten salience for information she can use to navigate choices more pertinent to making optimal decisions that fulfill individual transactional utilities or unique preferences. This supports the need for well-designed MC configurators with mechanisms that call attention to salient decision options aligned with the manner that one processes information.

3.4 Real-Time Feedback

MC scholars found feedback features must encourage trial-and-error, offer easy access to FAQs and help tutorials, be vivid and visually rich so the consumer can virtually inspect and manipulate images and witness real-time effects of their design choices, and show positive messages to reinforce co-design decisions (Franke & Piller, 2003). Also, feedback elements must afford sharing of one's design with social networks and peer communities and allow timely guidance from sales and customer service staff (Blažek et al., 2012; Trentin et al., 2014; Grosso et al., 2017; Sandrin et al., 2017; Suzić et al., 2018).

BE literature supports real time feedback as an important element to mitigate negative effects of salience bias. It helps the consumer slow down her thinking, spurring more contemplative decision making and affording immediate course correction (Pilat and Krastev, n.d.; Bordalo, 2022; Tiefenbeck, 2018). In his 2015 book, Misbehaving: The Making of Behavioural Economics, Richard Thaler noted, "Psychologists tell us that in order to learn from experience, two ingredients are necessary: frequent practice and immediate feedback" (p. 50). As part of their Feedback Intervention Theory, Kluger and DeNisi (1996) posited that feedback is a double edged-sword: when data is provided to someone on his performance of task-related goals and learning, the effect on the individual is positive; but negative information about one's performance on self-related goals impedes one's self-esteem, especially if compared to others who are doing better. In designing the MC toolkit, providers must always structure or frame feedback as positive reinforcement of consumer choices.

Kehr (2016) demonstrated pop up alerts that inform consumers of the consequences of sharing privacy-compromising data online at the point in time they are deciding to proceed increases their contemplation of costs, or risks, relative to the benefits of their actions. Further, a process known as audit and feedback - a structured method where

doctors evaluate their decision making on an ongoing basis using data about patient outcomes - has been shown to improve medical decisions (Ivers et al., 2014). Hossfeld and Keimel (2014) and Charness et al. (2014) noted that in crowdsourcing, providing individual feedback intrinsically motivates workers to improve their performance and increase their effort, especially when told how high-quality results benefit both the individual and the crowd worker community. London (2020) emphasizes that while intrinsic motivation encourages action, it cannot be an advantage if the individual is not afforded control over her improvement and the tools to "enact that change" (p. 111).

The opportunity to evaluate, use and apply the knowledge gained from feedback assists an individual in choosing behavior appropriate to a situation. These choices are beneficial to that person when feedback is a constructive tool (Fürstner et al., 2012). Thus, the awareness gained via feedback design helps in understanding how to distinguish between truly salient information, aiding decisions, and distracting attention from data less important at a given time or situation. Therefore, consumers are better equipped to select courses of action more valuable to and fitting preferences, especially when equipped with knowledge about their individual thinking style and how to use it accordingly.

3.5. Reminders, Personalized Nudges and Defaults, and Boosts

Thaler and Sunstein (2008) developed the concept of choice architecture, defined as the structure and presentation of choices to support decision making. Effective choice design helps to manage variety, simplify and navigate complexity of options by reducing cognitive load so a person can optimize limited attention and brain capacity, compare and evaluate options, narrow and categorize decision relevant data, and increase awareness of and contemplate behavior (Munscher, et al., 2016; Mertens et al., 2021). Payne et al. (1993) stressed that displays of information must be designed to make effective information processing easier. Gourville and Soman (2005) reiterate the significance of helping consumers minimize cognitive dissonance or regret after decision making. Johnson et al. (2012) suggest two tools - choice task structure and options description - as key to helping individuals in managing their decisions. Designed to aid decision making, policymakers use reminders, nudges, defaults, and boosts to improve individual and societal welfare, from discouraging littering, problem gambling, or illicit drug use, to motivating savings, vaccinations, or healthier lifestyles.

3.5.1 Reminders

Reminders are notices with information created to jog or help memory (Merriam-Webster). Sunstein (2018) writes "reminders are necessary and effective in part because people have limited attention; information will be more likely to influence behavior if it is presented in a way that is attentive to people's imperfect information-processing capacities" (p. 65). Because they call an individual's attention to choose to act, or not, reminders must be applied in ways that activate recall of positive memories by bottom-up thinkers (Bordalo, 2022).

3.5.2 Personalized Nudges and Defaults

Nudges are hints that optimize individual decision making by making it easier to choose without limiting choice (Thaler and Sunstein, 2008). A default nudge is a prescribed action that takes place when no choice is made. The consumer can opt in or out depending upon the type of default. This type of nudge has been proven to be an effective means of improving decision outcomes (Sunstein, 2012).

The plethora of data and information that can now be culled from individuals' behavior and consumption, personalized default nudges take advantage of heterogeneity among consumers and are most impactful when the provider is perceived to be trustworthy (Sunstein, 2012). Results of such nudges quadruples when presented in the manner that is "right for" the person (Pe'er et al., 2020, p.1). In their study on personalizing nudges to improve the way people protect themselves online (e.g., establishing strong passwords), Pe'er et al. (2020) determined it better to do so by presenting several nudges from which individuals can choose their preferred security method. Mills (2020) suggests use of choice and delivery personalization, the former focused on personalizing one's choice of nudges (e.g., select the percentage payroll deduction for savings contribution), the latter on the nudge's delivery (e.g., via default option or alignment with a social norm).

3.5.3 Boosts

Franklin et al. (2019) found boosts foster capabilities that improve an individual's capability to choose, particularly where uncertainty exists, risk is high, and choice information is presented or framed as a gain. Boosts "educate and inform" the individual to evaluate options presented by helping a person's understanding of information that aids her decision making (p. 11). Such results in increasing consumer agency and individual competencies versus nudges that shepherd one toward particular decisions (2019).

4. METHODOLOGY

Following we present our research question and preliminary hypotheses.

4.1. Research Question and Preliminary Hypotheses

As described in the extant literature reviewed above, scholars suggest future research on the effect

of individual differences, in MC by exploring the consumer's value of MC related to information processing or thinking style, and in BE by winnowing its attention from a homogeneous view to one focused on how individual heterogeneity influences decision making. The MC consumer's understanding of her unique thinking style equips her to better select providers and offerings suited to her preferences.

Salience bias skews a person's perception: attention-grabbing or more emotionally appealing information can cause one to neglect equally or more relevant data that is key to fulfilling needs and preferences that lead to consumer wellbeing. A co-design experience that increases awareness of thinking style should help one better discern the information most salient to one's goals. The MC toolkit should be designed to teach and aid the consumer in how to mitigate or purposely use to her advantage salience bias, as well as other biases and heuristics identified by BE. Features that promote thinking style salience during the MC process include real time feedback, defaults, nudges, and boosts as noted earlier. We contend the MC toolkits designed accordingly will further enhance the individual's perceived value of the MC co-design experience, resulting in the MC consumer's satisfaction and wellbeing.

Therefore, our research proposition is:

An MC toolkit designed to raise awareness of individual thinking style and salient choices equips the consumer to better select MC co-design experiences that best benefit her unique needs, preferences, and wellbeing.

Our hypotheses are:

H1. The more salient the MC toolkit is to individual thinking style, the more the consumer perceives value of the MC co-design experience.

H2. Higher perceived value of the MC co-design experience increases satisfaction and wellbeing.

We propose a randomized controlled trial.

4.2. Overview of Proposed Study

As noted earlier, our proposed empirical method is a randomized controlled trial (RCT). RCTs assess the success of new ways to tackle a persistent problem. The method imposes a high level of rigor to evaluate cause and effect of an intervention and lower research bias by randomizing participants to treatment groups (Hariton and Locascio, 2018). These characteristics earn the method its reputation as the "gold standard of effectiveness research" (p. 1). Researchers employ RCTs to determine how well an expected result occurs from introduction of a new approach or treatment. The most commonly known RCTs are clinical trials to test new drugs.

The proposed intervention is a real-life MC co-design activity. The aim is to determine the effects of the consumer's awareness of her individual thinking style and salience bias before completing the MC co-design process. Many companies use monikers to title their co-design programs, such as "Design Your Own," "Create Your Own," "Make It Yours," "Customize," and others. The selected provider's co-design toolkit is structured - per the MC literature - to include key features that define an ideal configurator which generates a value-laden process and outcome. The experiment is based upon empirical studies on use of MC by Dellaert and Dabholkar (2009), Novak and Hoffman (2009), and Turner et al. (2020). This new experiment replicates many of the elements of Turner et al. (2020) but modifies that study as an RCT comprised of three treatment groups, not one. The two additional groups are the control and treatment group 2, where the respondents in the former receive no thinking style questions, and those in the latter receive that instrument and are debriefed on their styles prior to engaging in the co-design activity. Figure 1 displays the proposed conceptual model.

4.3. Proposed Sample

A random sample of respondents who express value for customized offerings will be recruited with focus on attracting a diverse group of participants across genders, race, ethnicity, culture, education, age, and socioeconomic status. The customization offering is one for which most respondents are likely to have some form of functional utility, but through the experience are afforded the opportunity to express heterogeneous preferences. Participants will complete the same prescribed co-design activity. The incentive for completing the study is entry into a random drawing to win the customized offering co-designed by the winning respondent(s).

4.4. Proposed Study Design: RCT

A randomized controlled trial (RCT) is the proposed method of study. All registered participants will be randomly assigned to one of the three groups, a control group (CG) and two treatment groups (T1, T2). All three groups participate in the co-design program to select and customize an offering of a provider. Each group will differ by whether or not its participants will be made aware of thinking style and saliency prior to engaging in the MC co-design activity.

The study is divided into three phases: a questionnaire utilizing decision style scales from the MC and BE literature (e.g., Epstein, 2003; Novak and Hoffman, 2009; Appelt et al., 2011) assessing thinking style; the actual co-design activity with the placement of the customized offering in the shopping cart; a more in-depth questionnaire on perceptions of value (e.g., complexity, control, satisfaction, wellbeing), preference fit, demographic

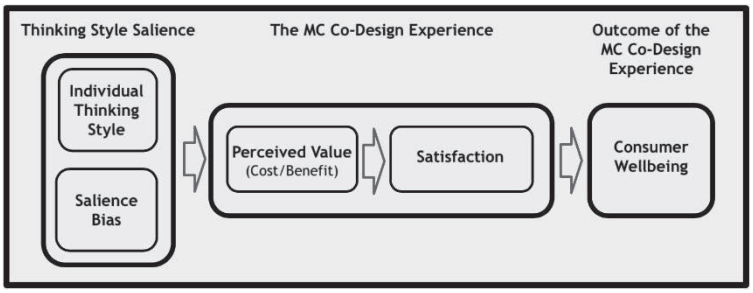

Figure 1. Influence of Thinking Style Salience on Consumer Value of the MC Co-Design Experience (adapted from Turner et al, 2020 and Thoits, 2012)

Figure 2. Steps of RCT on Individual Thinking Style Salience during the MC Co-Design Experience

information, and so on. Questions are to include 5- to 7-item Likert scales and closed and open-ended questions. Question order is to be randomized, and the independent and dependent variables separated, both to avoid common method bias (Podsakoff et al., 2003). A pretest should confirm suitability of the study procedure and an estimated average length of 30 minutes completion of all three phases. Figure 2 displays the proposed steps of the research study.

4.5. Expected Results of Analysis

As noted earlier, the hypothesis predicts that knowing one's thinking style and proclivity of information salience prior to and during the co-design experience will increase perceived value of the MC co-design experience. We anticipate that of the three respondent treatment groups, T2, the one whose members are debriefed on the results of the thinking style inventory, will report greater perceived value than will those in CG and T1.

The analysis will be via Partial Least Squares-Structural Equation Modeling (PLS-SEM) which tests complex, multi-construct models for predicting the nature of relationships between several variables. It is ideal for well-developed, small sample sizes, as well as larger heterogeneous samples, and good for causal research studies. Because it is structured to render a high degree of statistical power, PLS-SEM is more likely to identify relationships as significant that actually exist in the population (Hair et al, 2019; see Turner et al., 2020).

Support for predicted results is based on Turner et al. (2020). The original study showed high, positive, shared correlations between variables ranging from .75 to .94. Also, results exhibited direct effect sizes for rational/intuitive thinking style -> perceived value of the co-design experience (complexity, control, enjoyment) ranging from -.462 to .372, perceived value -> satisfaction spanning -.249 to .410, and satisfaction -> outcome (loyalty intentions) of .572. All p-values for these effects were significant at either $p < .01$ or $p < .05$.

5. CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

The empirical research on and extant literature from the domains of behavioral science, individual thinking style, MC co-design toolkits support our model, proposed pilot study and interventions. In addition, we know the original model upon which we base the RCT is conceptually and statistically sound, as well as demonstrates the importance of the relationships that impact and predict economic value for consumer and provider promoting consumer wellbeing. We believe our study will provide an encouraging answer to the research question, suggesting that when the consumer is informed and aware of her individual thinking style, MC perceived value is increased via the co-design toolkit designed to address and enhance behavioral drivers of the co-design experience.

There are limitations to this study. One is that the specific context of this research may or may not be applicable to other models of the consumer-provider interaction such as employee-employer, patient-practitioner, and so on. Second, while research demonstrates thinking style measures are consistent across the globe, plans for applying our results to other countries and cultures would require

experiments in those markets to confirm the generalizability of findings before extending similar marketing strategies. Third, consumer perception of provider access to individual personal data poses ethical implications that must be considered in the study design. Future research could explore how AI-designed toolkits and interactivity with AI features affect the role individual differences play in how consumers value use during the MC process.

We believe that providers can use our proposed study and its findings to implement customization, personalization, and individualization strategies and tactics. This should assure the MC consumer of provider commitment to addressing her preferences and promoting CWB. Doing so will yield improved customer lifetime value, a rich, value-laden relationship between MC consumers and providers, and achieve Industry 5.0's promise of individual and societal wellbeing.

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