# When the First Is Not the Worst – How Personalized Starting Solutions Can Intensify the Default Effect

**Philipp Dieckmann**
RWTH Aachen University
**Daniel Wentzel**
Chair of Marketing, RWTH Aachen University
**Michael Mendl-Heinisch**
RWTH Aachen University

Cite as:
Dieckmann Philipp, Wentzel Daniel, Mendl-Heinisch Michael (2020), When the First Is Not the Worst – How Personalized Starting Solutions Can Intensify the Default Effect. *Proceedings of the European Marketing Academy*, 49th, (63860)

Paper from the 49th Annual EMAC Conference, Budapest, May 26-29, 2020.

# When the First Is Not the Worst – How Personalized Starting Solutions Can Intensify the Default Effect

**Abstract:**

In this paper, we explore the advantages of a configuration framework featuring personalized starting solutions. Using a fictional configurator for desk chairs, it is experimentally investigated whether providing a starting solution seemingly based on customer preferences results in less deviation from the preselected options than an ordinary configuration process. Perceived endorsement is postulated as a mediator for the decreased deviation and as a cause for default effects in general. To test the general role of implicit endorsement for the default effect, a third configuration process, ostensibly providing a randomized starting configuration, is set up. This condition is expected to create a smaller default effect than an ordinarily presented starting configuration. Analyses demonstrate the hypothesized changes in the magnitude of the default effect. However, perceived endorsement could not be established as the underlying mechanism. Alternative explanations are discussed.

*Keywords: product configurators, default effect, implicit endorsement*

*Track: Consumer Behavior*

## 1. Introduction

More and more companies are offering their customers the possibility to order a product customized to their preferences. Advancing online infrastructure makes it increasingly easy to provide a web-based tool for mass customization (MC) even for smaller businesses (for a list of over 1300 online configurators, see cyLEDGE Media, 2018). However, the ability to configure a product to one's personal preferences does not come without drawbacks. While customization can increase a product's utility, the task of specifying each attribute individually can introduce additional choice complexity, potentially leading to less satisfaction with the configuration process and ultimate product choices (Dellaert & Stremersch, 2005). To deal with the described dilemma, companies and researchers have started to investigate a two-stage customization architecture. Instead of having to make a decision for every product attribute individually, customers are first provided with a set of preconfigured product alternatives to choose from as a starting point for the configuration process. Subsequently, customers can adjust individual attributes of their chosen starting solution until it best matches their idiosyncratic preferences. While this mode of configuration provides its users with the same flexibility regarding their configuration options, it was demonstrated to reduce perceived complexity and increase satisfaction with the eventual product choice compared to a regular attribute-by-attribute configuration process. (Hildebrand, Häubl, and Herrmann, 2014).

However, the proposed approach to product configuration inevitably raises the question on how the set of starting configurations may be generated. Hildebrand, Häubl, and Herrmann (2014) do not suggest any guidelines for how starting solutions may be derived. Moreover, they find that the benefits of their two-stage approach decrease when too many starting solutions are introduced. It should also be considered that, compared to attribute-to-attribute configuration, the described two-stage process produces an additional choice situation, namely when the starting solution has to be selected. Arguably, every decision customers have to make during a buying process presents an opportunity to decide to not purchase at all, and research has shown that being confronted with too many alternatives can reduce purchase intention (e.g. Iyengar & Lepper, 2000).

To further optimize the two-stage configuration architecture, ongoing research is developing a framework on how to create starting configurations based on historical customer segments. Historical configuration data can be used to identify individual customer segments. Subsequently, starting solutions which explicitly fit the needs of each identified segment can

be derived. In contrast to the two-stage approach presented by Hildebrand et al. (2014), customers do not have to manually select one of many provided starting solutions as the first step of the configuration process. Instead, they are briefly queried about what is generally important to them when selecting the product in question. Based on their stated preferences, customers are then assigned to one of the identified customer segments and provided with the corresponding starting solution. This way, the first stage of the configuration process does not introduce an additional choice situation. Customers can then adjust their starting solution like they would in a usual attribute-to-attribute configuration.

The research presented in this paper has two objectives. First, it is designed to assess the advantages of automatically assigned, personalized starting solutions from a consumer-psychological perspective using an experimental approach. While the proposed configuration architecture offers a number of possible advantages, we will focus on one particular effect well-established in consumer behavior research. It will be investigated if and why the personalization of starting solutions may have an influence on customers' tendency to stick with preselected configuration options, a phenomenon known as the default effect (Park, Jun, and MacInnis, 2000; Johnson, Bellman, and Lohse, 2002). Manufacturers might be able to benefit from being tasked with building products close to their starting solutions by adapting a product architecture that reduces internal complexity for such configurations. In addition, the study aims to shed further light on the mechanisms through which the default effect generally operates. Specifically, the role of implicit endorsement will be empirically investigated.

After a brief review of the literature and the development of hypotheses, the main study will be presented. In a concluding discussion, implications for practice and theory as well as limitations of the study are outlined.

## 2. Theoretical Background and Development of Hypotheses

The influence of default options on eventual choices is widely documented in research as well as recognized in practice. Park, Jun, and MacInnis (2000) first investigated the phenomenon in the context of product configuration by comparing so-called additive and subtractive option framing. Their study finds that potential customers end up with more expensive and feature-rich products when asked to deselect options from a fully equipped starting configuration than when they are asked to add options to a base model. These findings have since then been supported in a nonlaboratory, real-market context (Herrmann, Hildebrand, Sprott, and Spangenberg, 2013). In a similar vein, Johnsen, Bellman, and Lohse

(2002) demonstrate how having to opt-out of mailing lists results in more subscriptions compared to an opt-in format. As a common practical example, it can be observed that countries which have implemented an opt-out policy for organ donation exhibit much higher organ donor rates than those in which people need to actively opt-in to become a donor (Johnson & Goldstein, 2003).

What these examples have in common is the finding that people tend to stick to preselected options. However, explanations for this effect vary with its context. Park et al. (2000) argue loss aversion to be the main source of the default effect as observed in their experiments. When presented with a reference point, losses from that perceived reference are expected to have a greater impact on consumers than equivalent gains (Thaler, 1985; Tversky & Kahneman, 1991). Confronted with subtractive or additive option framing, the reference point is either a fully-loaded configuration or a featureless base model. In case of subtractive option framing, deselecting options is perceived as a loss in utility, while under additive option framing, selecting features is viewed as an economic loss. Consequently, customers are inclined to make few changes to their starting configuration.

However, loss aversion can only explain default effects in decision contexts in which deselecting an option represents a loss in utility. This is most likely not the case when deciding whether or not to subscribe to a mailing list or be an organ donor. Even within the context of product configurators, loss aversion can only account for default effects in a limited set of scenarios. The presented line of arguments is only applied to products for which the configuration options are binary, i.e. when the customer decides to either select a feature or not. At the very least, options for each product attribute need to have a hierarchical order, so that there can be a reference point from which switching is universally associated with a loss in utility. This may not be the case when multiple attribute options provide an equal utility or when the utility of options significantly varies with individual consumers.

A mechanism for the default effect applicable to much broader choice contexts is the notion of implicit recommendation (Johnson et al. 2002; Johnson & Goldstein 2003; McKenzie, Liersch, and Finkelstein, 2006; Dinner, Johnson, and Goldstein, 2010). It is argued that people do not view the default as a randomly presented solution. Instead, they infer information about why the manufacturer or policymaker chose a particular option as the default. Among other things, they may conclude that the default indicates the endorsed option, or, in the context of product configurators, the option the manufacturer deems best fitting. McKenzie, Liersch and Finkelstein (2006) were the first to test this hypothesis in an experimental setup. They found that participants provided with a default more often stated

they made their choice because they felt the experimenter wanted them to choose a particular option than participants with no default. However, the decision context used in the study may be of low generalizability, as the choice made was of virtually no relevance (which of two book summaries to read, with the content of both summaries being unknown to participants). Unsurprisingly, all but one participant in the default condition stuck with the provided option.

Given the current context of personalized starting solutions, the notion of default effects due to endorsement is particularly relevant. Presenting defaults in a fashion that does not provide any information on manufacturers' motives leaves much to be inferred by customers. Brown and Krishna (2004) were able to demonstrate that setting a default could even produce a negative effect on choice of the preselected option when scepticism towards the manufacturers motives was evoked. By implementing the framework proposed in this paper, the manufacturer takes charge of how the provided starting configuration is interpreted. The manufacturer assumes an active role within the configuration process. Starting solutions are no longer presented in an ambiguous manner. Instead, the manufacturer provides a tool through which he acts as an adviser, issuing recommendations to individual customer preferences. Thus, it is argued that the framework of having a product tailored to one's preferences can be expected to naturally increase the degree to which customers perceive the default solution to be endorsed by the manufacturer. Now, endorsement is not only implied, but explicitly created. Subsequently, reduced deviation from the provided configuration is to be expected. Accordingly, the following hypotheses can be derived:

***H1a:*** A starting solution presented as personalized produces less deviation from the default compared to a neutrally presented starting configuration.

***H1b*****:** The decrease in deviation from the default described in H1a is mediated by an increase in perceived endorsement of the starting solution.

When investigating the general role of *implicit* endorsement for the default effect, a second comparison is also of interest. As elaborated, it is generally proposed that people's tendency to stick with the default is based on their inference about why a default is set, even when no explanation is explicitly provided. It is argued that the default conveys an implicit endorsement by the manufacturer. If this is the case, then a default effect should be minimized when, during the configuration process, it is explicitly stated that the default does *not* reflect any sort of endorsement or typical choice. Thus, when eliminating the possibility for

customers to perceive a starting configuration to be implicitly endorsed, we expect to observe less choice of the default options. The according hypotheses are as follows:

***H2a:*** An explicitly random starting configuration produces more deviation from the default compared to a neutrally presented starting configuration.

***H2b***: The increase in deviation from the default described in H2a is mediated by a decrease in perceived endorsement of the starting configuration.

## 3. Study

### *3.1 Method*

To test the presented hypotheses, a web-based experiment featuring 3 conditions (personalized, neutral, and random starting configuration) was set up. In total, 121 Participants were recruited through Amazon MTurk and randomly assigned to one condition ($M_{age}$ = 31.69, 34.7% female). Participants were asked to imagine buying a new desk chair from a well-known manufacturer that allows customers to configure their products individually. Participants were shown an image of the base model and were told the product's base price. The product configurator was presented in the form of a drop-down menu for each product attribute. In total, nine product attributes could be adjusted, with the number of configuration options available per attribute ranging from two to seven. Prices for each attribute option were provided in parentheses next to them in the menu. Configurable attributes included materials, whether the chair had head- or armrests, and adjustability of seat height or the backrest. To represent a default, drop-down menus had an option preselected for every attribute. However, how participants were informed about the default selection varied with condition.

For the treatment conveying a personalization, participants were asked to provide information about their product preferences on a seven-point Likert scale upon being presented the starting configuration. Specifically, they were asked how important comfort, appearance and affordability were to them when choosing a desk chair, as well as how tall they were. They were then told that, based on their preference, a starting solution had been created for them. Note that the preselected configuration was, in fact, the same for every condition. It was selected to reflect the widest possible range of preferences and to avoid any blatant conflict with what preferences participants had expressed. For the neutral default condition, participants were not queried about their preferences, but simply told that the

manufacturer had preselected options to simplify the configuration process. This way, no endorsement of the default is specifically implied. However, motives for the starting configuration are in no way unambiguously clarified. The neutral condition is meant to best emulate how defaults or starting solutions are presented in most real-world configurators today. For the random default condition, participants were told that the preselected configuration options were randomized and did not reflect any kind of endorsement or typical choice.

The dependent variable, deviation from the default, was conceptualized as the number of product attributes for which participants did not choose the preselected option. Because the configurator featured nine product attributes, the dependent measure ranged from 0 to 9.

After configuring their product, all participants answered seven-point Likert scales to state to what degree they felt like the manufacturer had recommended choice of the pre-set configuration options, with items reading: "The manufacturer considers the starting configuration to be the most appropriate one", "The manufacturer thinks of the starting configuration as the most fitting choice", and "I feel like the manufacturer thinks the starting configuration is typically a good fit for the customer". The items were combined into a single measure (Cronbach alpha = .89). As a manipulation check, participants were asked to what extent they agreed that the configuration process was designed so that the starting configuration would already fit their preferences. A one-way ANOVA revealed a significant influence of condition on the described measure ($F(2, 118) = 7.24$, $p = .001$). As expected, agreement was highest in the personalized default condition and lowest in the random default condition ($M_{personalized} = 5.38$, $M_{neutral} = 4.68$, $M_{random} = 3.98$).

*3.2 Results*

To examine H1a, a t-test comparing deviation from the starting configuration between the personalization condition and the neutral condition was conducted. The analysis revealed that participants who had been led to believe they had received a personalized starting solution deviated less from the provided configuration than those who were neutrally presented with the default setup ($M_{personalized} = 2.75$ vs. $M_{neutral} = 3.98$; $t(79) = 3.11$, $p = .003$). Thus, H1a is supported. To investigate whether perceived endorsement served as a mechanism causing the observed effect, mediation analysis according to Hayes (2017) was carried out. Coefficients are reported as unstandardized. Testing for an indirect effect of condition on deviation through endorsement did not reveal the hypothesized mediation (b = -0.01, 90% CI -0.18 to 0.10). Thus, the data does not support H1b.

In a similar fashion, H2a and H2b were tested. First, a t-test was conducted to compare deviation from the default between the neutrally presented and the ostensibly random starting configuration. Analysis showed that participants in the random default condition deviated more from their starting configuration than participants in the neutral default condition ($M_{random}$ = 4.65 vs. $M_{neutral}$ = 3.98; $t(79) = 2.04$, $p = .04$). Hence, H2a is supported. Again, mediation analysis (Hayes, 2017) was conducted to investigate the role of endorsement for the observed default effect. Again, the indirect effect of condition on deviation through endorsement does not reach statistical significance (ab = -0.17, 90% CI -0.44 to 0.02). Therefore, H2b is not supported.

## 4. Discussion

In the presented study, changes in magnitude of the default effect could be produced in either direction, generating new insights for theory and practice.

It was shown that a configuration framework featuring personalized starting solutions produces a greater tendency to choose the preselected option than regular defaults in configurators. Since no participants were actually presented with a personalized starting configuration, the current study demonstrates a merely psychological phenomenon. A configuration process, which would actually assign customers to a starting solution according to their classification into a customer segment, would likely yield even less deviation from the provided configuration due to an improved preference fit. However, mediation analysis could not support the hypothesis that the effect demonstrated in the presented experiment was caused by perceived endorsement. Neither was there a significant difference in perceived endorsement between the personalized and neutral default condition, nor was perceived endorsement linearly related to deviation from the default. As an alternative explanation, it should be considered that the framework for personalized starting solutions might not only have an endorsing but also an advising aspect, and that these constructs might not be interchangeable. Participants might have stuck with more options of the ostensibly personalized configuration because the configuration process made them believe that the starting solution was best fitting for them. This might be the case especially when customers are generally not clear about their preference or what the best fitting alternative would be for them. Future experiments could aim to test this line of argumentation by analyzing whether perceived fit of the starting solution serves as a mediator for a decrease in deviation. Alternatively, it could be tested whether customers' preference insight moderates the effect. It

would be expected that the effect described in H1a becomes larger the less certain customers are about their preferences.

Future research should also explore other possible benefits offered by the proposed framework for personalized starting solutions. As argued in the introduction of this paper, the described configuration process might decrease choice complexity by reducing the number of choice situations and offering advice with regards to attribute choice. A reduction in complexity would also be likely to lead to a higher satisfaction with the final product (Dellaert & Stremersch, 2005).

In an effort to further illuminate the mechanisms underlying the default effect, the experiment presented in this paper also demonstrated that the deviation from the default could be increased by explicitly informing participants that the default would not reflect any kind of endorsement. This finding strongly suggests that at least part of the effect is caused by participants' belief that a neutrally presented default does convey some sort of endorsement or typical choice. Oddly, mediation analysis could not support that intuition. While perceived endorsement was strongly related to a decrease in deviation from the default, again, there was no significant difference in perceived endorsement between the neutral and the random default condition. To our knowledge, the construct of perceived endorsement has not been conceptualized or queried in research before. The chosen conceptualization might not be fitting to measure the intended construct. Given the context of H1b, the used scale items were created to measure how much the participants perceived the manufacturer to believe that the default would fit their preferences. However, this might not fully capture the nature of implicit endorsement, ignoring aspects like typical choice, while presupposing a highly conscious decision by the manufacturer. To further illuminate the role of implicit endorsement in default effects, future research should try to validate a more generalizable measurement.

## References

Brown, C. L., & Krishna, A. (2004). The skeptical shopper: A metacognitive account for the effects of default options on choice. *Journal of Consumer Research*, 31(3), 529-539.

cyLEDGE Media (2018). *Configurator Database*. Retrieved from https://www.configurator-database.com/. (Last accessed: November 26, 2019).

Dellaert, B. G., & Stremersch, S. (2005). Marketing mass-customized products: Striking a balance between utility and complexity. *Journal of Marketing Research*, 42(2), 219-227.

Dinner, I., Johnson, E. J., Goldstein, D. G., & Liu, K. (2011). Partitioning default effects: why people choose not to choose. *Journal of Experimental Psychology: Applied*, 17(4), 332.

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Publications.

Herrmann, A., Hildebrand, C., Sprott, D. E., & Spangenberg, E. R. (2013). Option framing and product feature recommendations: product configuration and choice. *Psychology & Marketing*, 30(12), 1053-1061.

Hildebrand, C., Häubl, G., & Herrmann, A. (2014). Product customization via starting solutions. *Journal of Marketing Research*, 51(6), 707-725.

Iyengar, S. S., & Lepper, M. R. (2000). When choice is demotivating: Can one desire too much of a good thing? *Journal of Personality and Social Psychology*, 79(6), 995.

Johnson, E. J., Bellman, S., & Lohse, G. L. (2002). Defaults, framing and privacy: Why opting in-opting out. *Marketing Letters*, 13(1), 5-15.

Johnson, E.J., & Goldstein, D. (2003). Do defaults save lives? *Science*, 302, 1338–1339.

McKenzie, C. R., Liersch, M. J., & Finkelstein, S. R. (2006). Recommendations implicit in policy defaults. *Psychological Science*, 17(5), 414-420.

Park, C. W., Jun, S. Y., & MacInnis, D. J. (2000). Choosing what I want versus rejecting what I do not want: An application of decision framing to product option choice decisions. *Journal of Marketing Research*, 37(2), 187-202.

Tversky, A., & Kahneman, D. (1991). Loss aversion in riskless choice: A reference-dependent model. *The Quarterly Journal of Economics*, 106(4), 1039-1061.

Thaler, R. (1985). Mental accounting and consumer choice. *Marketing Science*, 4(3), 199-214.