

# Behavioural Design and Testing

An approach to  
iterative experimentation

## Behavioural Design and Testing—An approach to iterative experimentation

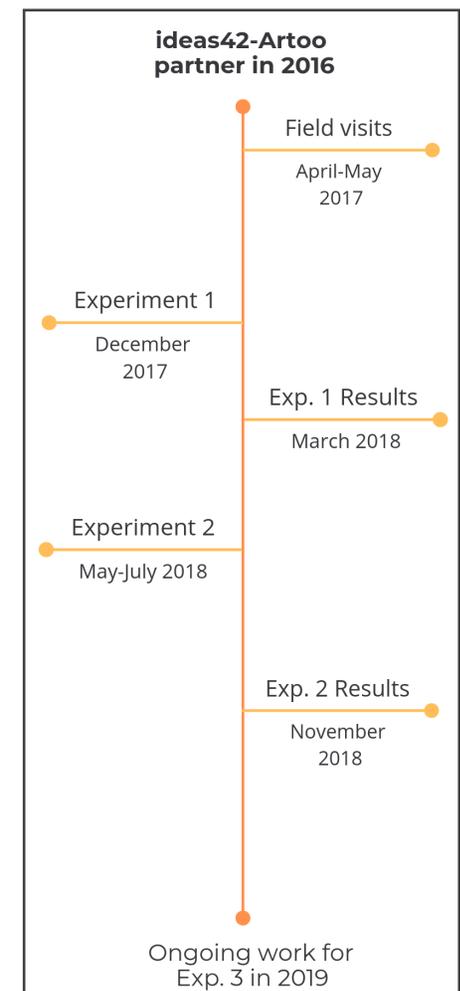
*Through an opportunity that Artoo received to partner with ideas42—an organisation that uses insights from behavioural science research to address complex social problems—we explored the potential and application of behavioural testing in the domain of financial inclusion. The joint aim was to explore ways to provide more value add to the lender clients and increase field staff efficiency by making the Artoo app a better planning tool.*

### Identifying the need for behavioural change

While exploring ways to add value and increase efficiency, we came across an interesting pattern of behaviour displayed by field agents—most activity was concentrated towards the end of the month. Data analytics showed that loan agents tend to club most of their loan applications submission towards the end of the month, closer to their deadlines, thus perhaps leaving a good portion of the month fallow, or less productive than it could have been. This was more prominent for some lenders than for the others. Furthermore, this clubbing of applications close to deadlines could also mean a compromise in quality of work—indiscriminate following up on leads irrespective of quality, rushed or hurried data

collection and documentation from the borrower, pushing applications of smaller ticket sizes as those are easier to pass, and similar such compromises, brought about by the stress of having to meet targets.

With this domain being high-touch—where field agents play a crucial role in generating larger volumes of loan applications—the assumption remains that addressing this behaviour pattern would prove



more productive and profitable for the lenders. The more effectively field agents are able to manage their time, the more attention they are able to give their work, and the better the loans they manage to submit—both in terms of volume, as well as quality. With this hypothesis in mind, Artoo and ideas42 set out to jointly carry out a set of experiments that would look at changing this behavioural trend.

*"In our work in India, we have increasingly seen how field officers play a critical role in delivering financial services to lower-income customers and unbanked micro-entrepreneurs. The digitization of financial services presents a huge opportunity to behaviorally enhance the tools in the hands of the field staff, and working on this with Artoo has been an enriching experience for our team. Artoo and its team have been one of our most enthusiastic partners through several rounds of behavioral design experiments, and it's great to see them continue to use data analytics and rapid iterative testing to make their product even more effective."*

**Saugato Datta**  
**Managing Director, ideas42**

## Designing the first experiment

Field observations and behavioural diagnosis suggested that field agents possibly tended to display *planning fallacy* (overestimation of ability to meet targets coupled with underestimation of hassles that might get in the way), use sub-optimal *heuristics* (relying on a general sense of what needs to be accomplished that don't necessarily concretely translate to daily/weekly tasks), and have *time-inconsistent* perceptions (benefits/costs reaped at the end of a longer period of time, in this case month-end, seeming less consequential than they actually are). The design interventions were hence aimed at addressing these underlying behavioural and attitudinal tendencies. This being Artoo's first foray into the world of behavioural design and testing, we decided to do 2-staged testing, with the first experiment designed in a way that allowed us to learn the necessary criteria for launching a successful test and the second experiment aimed at tackling the issue more directly.

An existing feature of the Artoo app is a Performance Page, that allows field agents to view and track their

performance through the month; capitalising on this feature, the first experiment used A/B testing to introduce periodic push notifications to an experimental group across multiple lenders, that was intended to direct them towards the performance page. This, it was believed, would implicitly nudge them to keep their month-end targets in sight more regularly, measure their current performance against it, and thus remind them to plan accordingly.

### **The power of push notifications:**

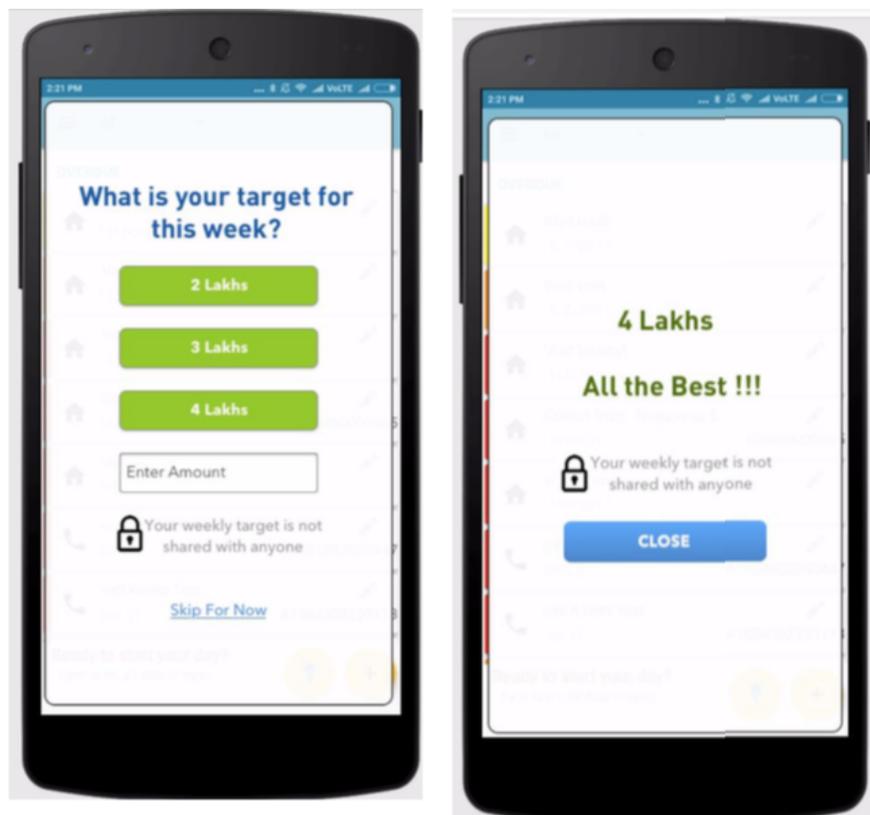
#### **Experiment 1 results**

Results of this first experiment indicated that field agents did tend to pay attention to these push notifications—more than 20% of the people who received the notification overall opened the notification. Field agents also visited the performance page more when directed by these notifications—although a statistically significant difference between the page visits of control and experimental group was not observed, the numbers were nevertheless higher

among the experimental group. There was no meaningful difference observed between loan submissions of control and experimental groups, implying that the small nudge was not strong enough and a number of extraneous factors could have influenced this. What could be conclusively stated, however, was that push notifications could serve as a powerful tool to guide and direct field agent's behaviour towards targeted features.

### **Designing the second experiment**

During field visits we learnt that field agents relied primarily on mental planning for balancing their target during the month, which coupled with their mental model of viewing certain periods of the month as non-loan generating periods, was possibly leading them to scampering to meet their targets closer to the month-end deadline. The second experiment used A/B testing to improve field agent efficacy by introducing weekly prompts that asked the agent to fill in the amount of loan applications that they intended to submit within



that week. While experiment 1 aimed to direct the field agent to view their performance periodically in the hope that this would implicitly 'nudge' them to plan better, experiment 2 aimed to elicit a more active participation from the field agent in their planning.

Viewing a weekly prompt would, we believed, allow the field agent to reframe the presumably lean time periods in the month as potentially productive ones now. Furthermore, putting in a number—even if only eventually viewed by the field agent himself, and with no consequence attached to not attaining it—would still elicit some degree of commitment to achieving that number. The weekly prompts were thus also aimed to serve as a planning tool for the field agent, helping them navigate the difficult task of balancing leads for a full month.

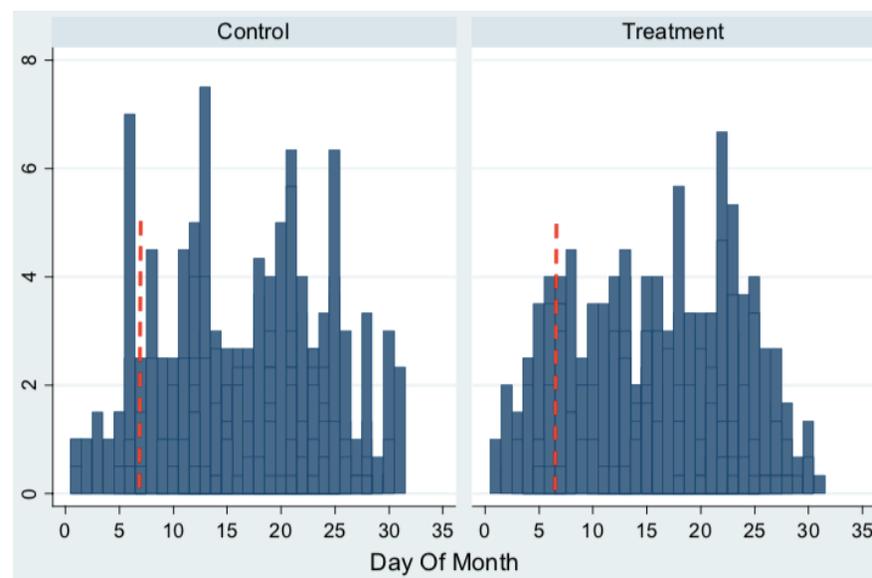
### Jump in loan submissions: Experiment 2 results

Once again, this experiment included field agents from across the different lenders that we serve. Results of this second experiment showed that while across the entire sample there did not seem to be a significant difference in loan submissions, field agents of one particular lender showed a statistically significant difference—field agents of this institution in the treatment group **submitted >5 applications more**

**than the control group, a difference of 15%, primarily driven by increased submissions in week 1.**

Furthermore, this was one of the lenders in whose case the clubbing of loan applications in the second and third week (leaving the first and fourth weeks as 'fallow' time) was most prominent, thus making the results more plausible. Also the application submission and credit appraisal methods followed by this institution is different than that of the other lenders, which could explain why the experiment showed positive results for them, and not so for other lenders.

Our findings from the user engagement metrics in this experiment was that more than half the entire sample engaged with the pop-up at least once, which gives an indication on the kind of engagement one can expect from users with respect to pop-up notifications. Further, **more than two-thirds of the users displayed a consistent behavioural response to the pop-up**—if they engaged with it the first time, they were likely to engage every time; if they dismissed it the first time, they were likely to dismiss it every time.



*Difference in loan submissions in week 1 as seen with field agents of one lending institution; graph by ideas42*

### **Taking the learnings forward**

Learnings that emerged from our second time round— influence of the field agents' mental model of monthly targets, as well as structural limitations on submission dates—are being carried over as we work towards setting in motion a third experiment this year. One learning that has been consistent across all our limited



interactions with the world of behavioural science research, however, has been that the micro-enterprise lending space is still truly a high-touch one today. There are nuances and insights to human behaviour in this space that are yet to be uncovered, an understanding of which could bring increased value to the productivity and efficiency of operations for the lenders. Artoo is excited to discover the possibilities that behavioural science research holds for micro-enterprise lending and committed to working further to truly maximise the potential of 'high-tech-high-touch'.

*A core principle that we follow at Artoo is the meeting of High-Touch with High-Tech, the interaction of human and digital. With the ability that behavioural science research has to optimise touch—to improve performance and further personalise the experience for the borrower and the agent in micro-enterprise lending—makes it both an important, and a highly relevant skill. Furthermore, the methodology of A/B testing is key to generating new insights, remaining relevant even with changing landscapes.*

*Our work with ideas42 is a perfect example of how some simple principles from behavioural science can help topple some longstanding myths in the industry, and unlock the next level of performance and opportunity. Our experience with micro-enterprise lending has led us to see that the field agent acts as both enabler and bottle-neck—any intervention towards the productivity of the agent can have tremendous business impact.*

*We truly appreciate the opportunity to have been able to partner with ideas42, thank our clients for their participation, and are excited to build on the foundation of behavioural science research that ideas42 has so expertly helped us build.*

**Sameer Segal**  
**Founder & CEO, Artoo**



## About Artoo

Artoo is a B2B FinTech that specialises in MSME lending. It enables lenders to effectively serve a borrower base with limited digital footprints, by equipping the field agent with cutting-edge technology at the borrower's doorstep. With a loan disbursal time of under 40 minutes, over INR 2,000 Cr. worth of loans, ranging between INR 1 to 25 lakhs, have been processed so far. With the help of machine learning and codification of 'good agent' intuition, Artoo looks to utilise technology to enhance the human, thus reducing anxiety and deepening financial inclusion. Artoo is partnered by Infosys Finacle and Microsoft Azure.

## About ideas42

ideas42 is a non-profit applying insights from human behaviour—why people do what they do—to help improve lives, build better systems, and drive social change. Working globally with a range of partners, they reinvent the practices of institutions, and create better products and policies that can be scaled for maximum impact. They also teach others, ultimately striving to generate lasting impact and create a future where the universal application of behavioural science powers a world with optimal health, equitable wealth, and environments and systems that are sustainable and just for all.

## About the authors

**Sreelakshmi Sudhakaran** heads communications at Artoo, working to help create and tell the story of Artoo both within the company, as well as to the rest of the world.

**Sameer Segal** is the CEO and co-founder of Artoo, a company born from his firm belief that the world's most intuitive technology should be available to those who need it the most.