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What You are Seeking is Seeking You: Folk Theories of Personalisation Algorithms Among Internet Users

This study explores eight folk theories of young Indian internet users — three capturing their understanding of algorithmic personalisation and five concerning their behaviour towards individualised recommendations, datafication and ramifications of online profiling. Taking a social constructivist approach, 13 in-depth, semi-structured interviews were conducted. Folk theories embody an overarching feeling of 'inescapability', 'irritation' and 'efficiency', in equal measure, often blurring the line between personalisation algorithms being efficient or intrusive. The study further identifies critical user suggestions lying at the intersection of algorithmic literacy and transparency, paving future scope for research. It endeavours to contribute to the academic literature in algorithmic awareness given the lack of the same in non-western countries.

Keywords: Personalisation Algorithms, Algorithmic Culture, Folk Theory, Data Privacy, Algorithmic Profiling, Algorithmic Profiling in the Global South

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INTRODUCTION

Frantically flipping through pages of an encyclopaedia for information is passé. Shopping at a retail store feels medieval. Burning CDs appears cumbersome if not silly altogether. We live in times where desires arise algorithmically, and decisions are made computationally. We depend on algorithms to book a ride, buy a book, and execute a mathematical proof (Finn, 2017). Extensively embedded across cultures, personalisation algorithms are omnipresent in modern society. These self-learning programs harvest people's data to customise information for personalised social media feeds, targeted advertising, recommender systems and algorithmic filtering in search engines (Kozyreva, A, Lorenz-Spreen, P, Hertwig, R, Lewandowsky, S & Herzog, SM 2021).

The double-edged sword of personalisation comprises:

1. Online profiling: a profile of Internet users and their tastes, interests and. purchasing habits;

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2. Datafication: "the requirement, not just the possibility, that every variation in the texture of human experience is translated into data for counting and processing" (Couldry, 2019, p.11; Mayer-Schönberger and Cukier, 2013).

"Humans have always believed in invocations — the marriage vow, the shaman's curse. Computation casts a cultural shadow shaped by this long tradition of magical thinking" (Finn, 2017). Imagine searching for a product on Google and being magically surrounded online by similar adverts. Imagine mentioning a movie you want to wat.ch and that movie being recommended on Netflix the following day. It would not be surprising to wonder 'what you seek is seeking you'–– a strong case of human desire for magical thinking and mysticism. Over time we have developed a faith-based relationship with algorithms described by Finn (2017, pg missing) as a "mystical notion of computation as a universal truth".

Humans are error-prone and biased, but that doesn't mean algorithms are necessarily better. While algorithms affect human choices and shape our culture, it is also important to recognise the power and agency humans hold within this equation to make a well-informed decision on how and to what extent algorithms can determine choices. In this regard, regulators must cooperatively identify risks of unfair algorithms and take mitigating actions to enable innovation while safeguarding consumers (Ofcom, 2022). It follows, that policymakers introducing regulations to protect people's privacy would benefit from knowing how people understand and perceive personalisation in different Internet domains (Kozyreva, A., Lorenz-Spreen, P., Hertwig, R. et al., 2021). This research contributes with much needed insights on how recursive and ongoing relationships between algorithms and humans co-shape choice-making. These findings provide a much-needed resource to guide regulators and marketers alike in the design and regulation of fairer algorithmic personalisation based on a study of 13 participants living in India. Furthermore, with a focus country from the Global South, this research attempts to bring a holistic perspective to the Western-centric narrative.

LITERATRE REVIEW

Algorithms as Culture Machines

Algorithms influence preferences. We use algorithms today "as pieces of quotidian technical magic that we entrust with booking vacations, suggesting potential mates, evaluating standardised test essays, and performing many other kinds of cultural work" (Finn, 2017, p.16). Though algorithms shape human choices, they are informed by human feedback. Unlike a simple algorithm — 'Bubble sort' (Seaver, N. 2017), where the output is predictable by the creator and user — human interactions constantly mould modern-day algorithms. As Airoldi and Rokka (2022, p.14) put it "consumers iteratively influence algorithmic behaviour through their explicit or implicit feedback i.e., their datafied reactions to algorithmic outputs, such as hiding a Facebook ad or skipping a recommended song". Such real-time inputs make algorithm outputs more coherent with user expectations, allowing them to monetise on 'more time spent on a certain app' or ad revenue (Fourcade et al., 2020).

Thus, algorithms and their users co-construct and counter-curate each other. This human-algorithm interplay has been labelled 'algorithmic culture' (Airoldi and Rokka, 2022). "This relationship resembles that between a rock and the stream it is sitting in; the rock is not part of the stream, though the stream may jostle and erode it and the rock may produce ripples and eddies. Similarly, algorithms can affect culture and vice versa because they are distinct"

(Seaver, N. 2017, p.4). While it might be true that algorithmic systems do not "naturally accord with logical human understandings" (Burrell, 2016), one can try to understand these complex algorithmic systems. through their creators and developers. However, "even people in the most ''algorithmic'' roles at the company, are unable to open the black box of algorithms given their complexity as status as strategy company assets (Hallinan and Striphas, 2016). Therefore, they cannot be comprehended fully, even by its creators/users as discussed above. However, a nagging thought persists regarding the pervasive and generalised presence of algorithms in everyday life. A way of understanding the workings and impact of algorithms is acknowledging the role and agency humans and algorithms embody (cite sources). Taking an anthropological and ethnographic approach to algorithms, this paper uses a social constructivist framework known as Folk Theory, to study how users perceive and understand algorithms. An ethnographic method was chosen for this study as it is best suited to answer concerns of how formalisms relate to culture i.e., how algorithms are comprehended by its users in their daily experiences, "resisting arguments that threaten to wash away ordinary experience in a flood of abstraction" (Seaver, 2017, p.2). Located against a diverse and dynamic sociocultural context, ethnography offers the flexibility required to pursue this research, whilst helping situate these volatile entities of algorithmic functioning and human understanding, against a broader cultural landscape.

Personalisation Algorithms: Understanding User Experiences with Datafication and Online Profiling

Personalisation algorithms were chosen as the case study since they offer a perfect window to human-algorithm interplay. Though we face a variety of algorithms such as facial recognition, GPS, commute schedules, traffic lights, etc., our interaction with recommendation algorithms on Instagram and Facebook's feed, Google Search, Spotify and Netflix curations are far more connected to everyday life. As personalised recommendation systems aid people to discover music, movies, restaurants, etc., which they wouldn't otherwise (Ruckenstein and Granroth, 2019). In this way, "algorithms not only mediate but 'constitute' human lives" (Beer, 2013), acting as an invisible force that plays through into everyday life in various ways (Beer, 2013). Occupying a pivotal place in users' lives, "targeted advertisements constitute an opportunity to explore the intimacy of surveillance through emotional reactions to workings of algorithms" (Ruckenstein and Granroth, 2019, p.6). For instance, feelings of astonishment, distress, fear, intrusion, convenience, pleasure, and more are expressed by users when the operating principles of algorithms are not understood, offering a window into the understanding of algorithmic consumer culture. These are not just individual reactions but rather narrate a more conventional story of corporate surveillance's violation of notions of personal autonomy and privacy (Ruckenstein and Julia Granroth, 2019).

Thus, the question is not whether to have personalisation but how to best regulate these architectures of code to mitigate feelings of insecurity, resignation, and irritation amongst internet users. Efforts to regulate data privacy and personalised online content require public backing and addressing public ethical concerns. However, there has been a puzzling lack of public involvement in monitoring algorithms and data collection driving personalization. (Bozdag, 2013).

Folk Theories as an Integrative Framework

'Folk theories' is an integrative framework that studies people's perceptions in everyday life. A folk theory approach centres on revealing conceptions people hold of how the media works i.e., their theories (Ytre-Arne and Moe, 2021). Folk theories are informal, non-expert understandings or explanations of the world that are developed and shared among laypeople,

rather than being authoritative or derived from professional expertise. (Eslami et al., 2016), thus serving as our 'strategies of action' (Swidler, 1986, 2001). Folk theories can be described as imprecise stories circulated by lay people (in this case, internet users) to "organise experience, generate inferences, guide learning, and influence behaviour and social interactions" (Gelman and Legare, 2011, p.379). Such stories operate as 'intuitive theories' and play a pivotal role in human understanding of the world. Mindful of the influence of narratives and folk theories in shaping human perspective, the 'folk theory framework' is an integrative and efficient empirical method to study personalisation algorithms. This is because "behavioural data, direct observation, and survey research can tell us much about what people do (and think they do), but much less about what it means to them" (Toff. B and Nielsen, R.K., 2018, p.639).

Prompted by a humanistic inquiry into the complete nature of algorithms across a cultural time-lapse shaping the world, folk theories are an intelligible way to understand how users perceive and interact with algorithms. Just as people today cannot comprehend the zeitgeist of a period they never lived in except by relying on artefacts, monuments, and stories told-written-sung by people of the time, similarly, there isn't any efficient way to understand the black box of algorithms if not for artefacts (apps, search engines), thoughts of its creators and theories held by its receptors i.e., common internet users. Algorithms are opaque and while it is not feasible to open the black box itself, we can, however, study relationships between people and algorithms, and stride further to unravel how and to what extent these "experienced relationships become meaningful and are interwoven with users' reflections of power, transparency, and justice in digital media" (Lomborg and Kapsch, 2020, p.745).

Why the Focus on a Country from Global South

Conventional studies around algorithmic awareness have been Western-centric. While recent years have produced rich literature on machine learning and algorithmic perspectives, most studies have proposed solutions specific to Western society. For example, "in the premier FAccT conference, of the 138 papers published in 2019 and 2020, only a handful of papers even mention non-West countries" (Sambasivan et al., 2021, p. 316). Without an adequate understanding of conditions, beliefs, politics and current dynamics of the non-West, a generalisation of Western ethical frameworks as universal can be a dangerous prospect for the already exploited and underdeveloped societies of the Global South (Kwet, 2019; Roy, 2014).

Home to 1.38 billion people, India is a diverse nation of multiple languages, religions, cultures and ethnicities interacting with algorithms. The ambition is to capture human awareness and perception regarding personalisation algorithms in contemporary India to holistically understand its impact.

METHODOLOGY

A scarcity of data on folk theories in algorithmic profiling in the Global South led to empirical research in India to underline the importance of non-Western perspectives in theory development, thereby attempting to contribute and extend this area of research. The research questions are as follows:

RQ1: What folk theories do Indian internet users hold about their awareness and understanding of personalisation algorithms?

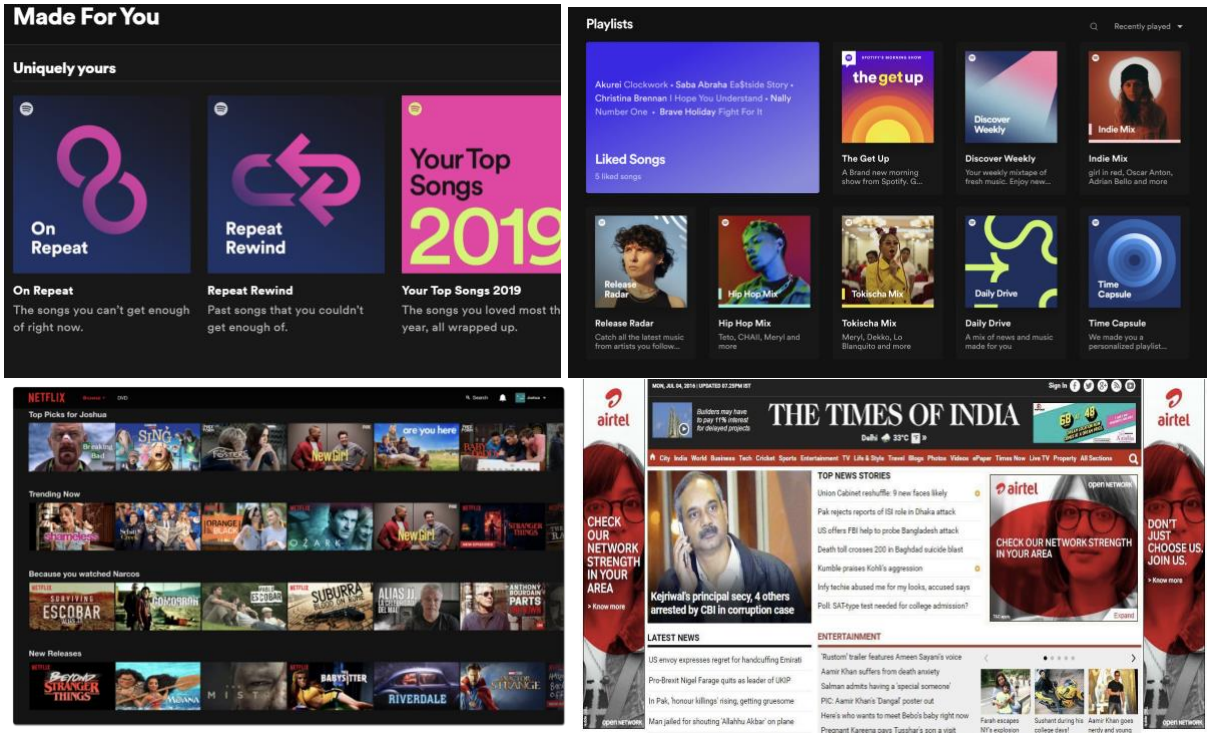
RQ2: What are Indian internet users' folk theories about their perception and attitudes towards personalisation algorithms in different domains of everyday internet use?

Data analysis is based on semi-structured and open-ended interviews conducted with 13 Indian internet users falling in the 20-35 age bracket. Owing to purposive sampling, "where the researcher decides what needs to be known and sets out to find people who can best answer and are willing to provide the information through knowledge or experience" (Tongco, 2007) resulted in the choice of this age group, who also are the majority of internet users in India (Basuroy, 2022). Choosing this age range facilitated garnering 'Gen Y' and 'Gen Z' perspectives, thereby allowing variation and texture in the collected data. Further, participants were recruited beyond the researcher's family and friends. This was achieved by reaching out to acquaintances who suggested participants suitable for the study, which was then complemented using the snowball technique. The final interviewees came from different walks of life viz., business analysts, lawyers, art curators, accountants, fashion merchandisers, etc., ––resulting in the diversity of user experiences and attitudes.

Unlike previous studies in folk theory research (eg. Eslami et al. 2016 and Ytre-Arne and Moe, 2021) that mainly focused on participants who were aware of algorithms and how they worked, the sample included people who lacked awareness. The decision was based on the researcher's epistemology that while aware participants might naturally develop theories based on their knowledge of algorithms through different sources combined with their encounters, it would be worth studying those unaware of not just the term algorithm but its intrinsic nature and impact on the internet and their lives. To segregate participants into aware and unaware groups, questions such as 'You know the situation of searching for something on the web and search engines list a large number of hits. Have you ever thought about how this works?' and 'When you use social media apps such as Facebook and Instagram, you are presented with updates from your friends and acquaintances. How do you think this works?' were asked. Responses made it easy to recognise if the participant knew algorithms were at play. Words such as 'computation', 'logic', 'math', 'keyword', 'personalised', 'Search Engine Optimisation', 'search history' etc., were calculated as aware participants; no participant was expected to use the term 'algorithm'. Further, the above-cited questions probed participants to consider if algorithms do something, and what that might be. These questions provide insight into what people believe algorithms can do. Among 13 interviews, two were in person while the rest were virtual. Each interview lasted 20-30 minutes depending on the contours of experiences. The sample consisted of five (38%) male respondents and eight (61%) female respondents, out of which three (23%) were identified as unaware participants and ten (76%) were identified as aware ones. To minimise researcher bias, the interview questionnaire was examined by a Postdoctoral Research Associate at the University of Sydney. The examination of 13 in-depth interviews revealed data patterns in seven of those and folk theories not only emerged but recurred. In qualitative research, this is often termed thematic saturation which refers to a point in data collection when no additional patterns are identified and further data collection becomes redundant (Kerr et al., 2010). The remaining six interviews added rich meaning and understanding of folk theories identified.

The research design comprised two sets of pilot interviews — four participants in the first and two in the second. The questionnaire was modified after the pilot interviews based on responses for relevant data collection. Additionally, questions between sections were shuffled to avoid user priming or manipulation. Responses to each of these areas would then elicit user folk theories. Stimulus texts were deployed to facilitate interviews probing a complex subject like algorithmic personalisation (see figure 1). "In stimulus interviews, the interviewees are considered to take part in a culture and society, where in the stimulus texts prompt them to narrate their experiences in an authentic manner" (Törrönen, 2002).

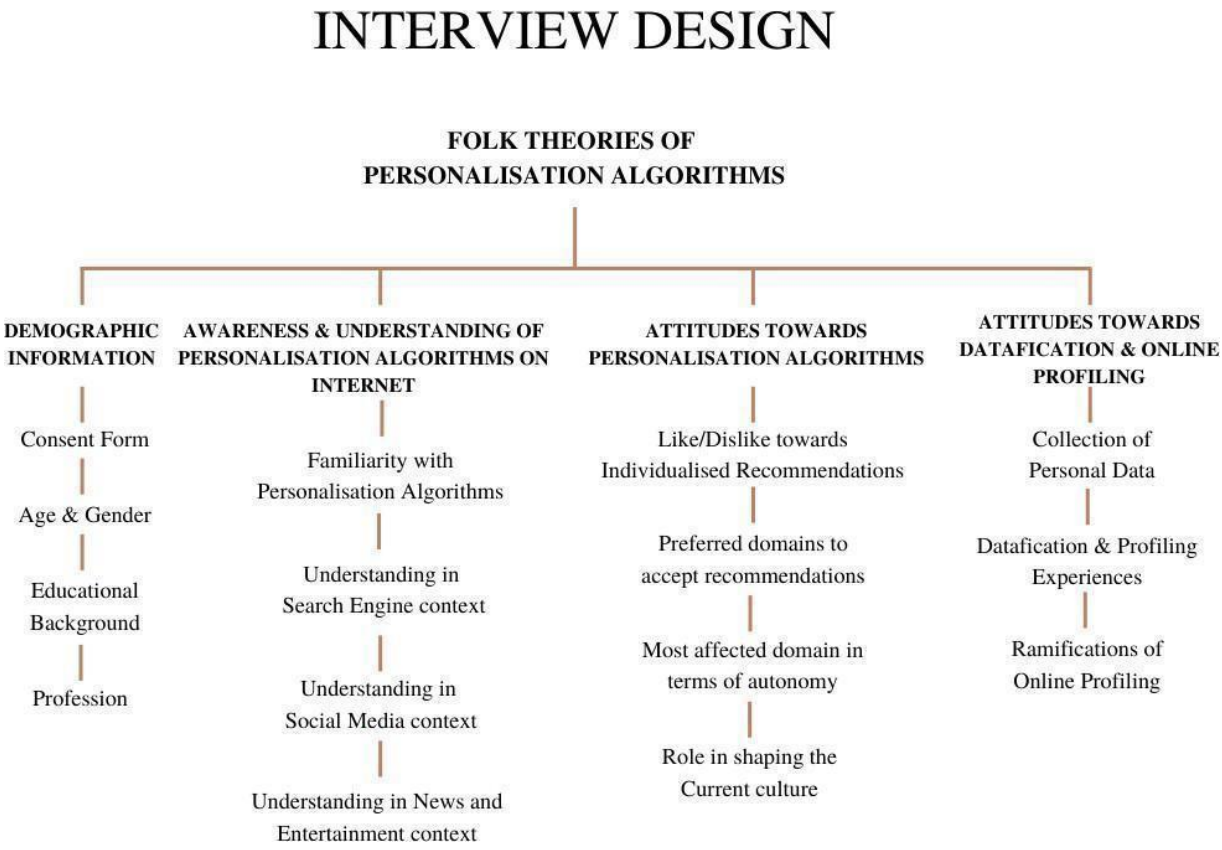
Figure 1: Sample of Stimuli Used



The interview covered the following (see figure 2):

1. Public Awareness and Understanding of Personalisation Algorithms
   This area covered general questions like participants' internet and media usage. The next set of questions centred around users' awareness and understanding of algorithms in different domains such as search engines, news, entertainment, and social media. Stimulus texts were explicitly used to make it easier for participants to respond to 14 questions related to algorithmic workings.
2. Attitudes towards Algorithmic Personalisation
   At the end of the first section of the interview, the researcher's understanding of personalisation algorithms was disclosed to the participant. Personalisation algorithms were defined as a set of codes that relied on a user's digital footprints to predict what s/he might love to eat, buy, watch, or read in the future. Participants were then asked how they felt towards individualised recommendations in an area where they trust/distrust personalised recommendations and their role in shaping choices they made.
3. Attitudes towards Datafication and Online Profiling
   Finally, in this section of the interview, participants were questioned about their views on personal data collection, daily life experiences around personalisation algorithms and what they consider could be the ramifications of online profiling.

Figure 2: Interview Design Process



The data was analysed using qualitative thematic analysis and reduced to meaningful categories using the Block and File approach (Grbich, 2007). The advantage of a block and file approach is that you can keep fairly large chunks of data intact and categorise it as themes are identified.

Replies were first categorised according to participants' awareness of personalisation algorithms. Folk theories were then identified by conjoining all interview transcripts based on full or partial responses that alluded to potentially shared understandings (Nielsen, 2016). The final goal of the analysis was to collate replies hinting at similar operational theories (DeVito et al., 2018) of what people believe algorithms do to answer the first research question whereas answering the second research question involved a search for more abstract theories of what algorithms mean to people. Categorising these shared understandings, three and five folk theories were formulated for the first and second research questions respectively. Finally, it is important to note that most interviewees draw upon two or more theories at once.

FINDINGS

Folk Theories of User Understanding of Personalisation Algorithms

This research identified folk theories amongst Indian internet users in the age bracket of 20-35 concerning the latter's comprehension and attitude towards personalisation algorithms. The eight folk theories efficiently represent the understanding of the operations of personalisation algorithms operating in search engines, social media, news, and entertainment, ultimately informing their usage of these platforms.

The Manifestation Theory

One of the most interesting theories identified in this section is the Manifestation Theory that, in the context of personalisation algorithms, means the act of just thinking about a movie, spotting a certain product in real life, having a private conversation with your friend about something which, instantly or eventually, manifests into a personalised ad on Google, Netflix, Instagram, etc., that a user comes across.

Here is a poignant example where participant PX describes her experience with personalised recommendations as an episode that reinforced her beliefs and created a sense of false reality, thereby aggravating a health condition she had. While this is a one-off situation, it reveals one extreme extent to which personalisation algorithms play a role in everyday life.

> "At a point in my life, I was diagnosed with Schizophrenia — a mental condition where the person has serious hallucinations. So when I was looking at my email or YouTube, it showed stuff that I was just thinking about. I couldn't understand how this was happening and got scared. Once I searched for a new shampoo on Google and an hour later, I got the same ad and it just started reinforcing my beliefs. There's something called the Prophet Syndrome, a part of Schizophrenia, which means the patient diagnosed with this believes that he's the prophet sent by God. In such a condition when I was thinking about something and I was seeing things instantly, it was almost like what I'm seeing is just getting manifested for me."

This example shows how personalised recommendations come to the user as a surprise and how just thinking about something on the internet is eventually manifested into a recommendation eventually. Another response below shows how the participant is aware of personalisation algorithms at play and deliberately avoids discussing sensitive issues such as politics lest the algorithm picks up what side she's on.

> "There is a very repeated and running joke between me and my friend. Each time we start getting political on calls, we're like, "Somebody's hearing it, let's not talk about this." We joke about that but then I think we probably are not joking about it and [are] actually scared that somebody's gonna hear or record this call".

This theory is characterised by an element of unexpected or expected surprise. In case of an unexpected surprise, it pushes users into a state of confusion and feeling invaded. In case of an expected surprise, it makes users become overprotective.

Attention Goes Where Energy Flows Theory

The main theme of this folk theory is that users correlate the way algorithms function to display results, to picking up breadcrumbs to reach a destination i.e., algorithms collect a user's

internet activity and coordinates their behaviour by collecting cookies from their systems, keeping tabs on their most searched terms and most time spent on content to tailor recommendations to them.

> "I just like to relate it to real life, how you focus on things that you wanna pay attention to. You know the saying that your attention goes where your energy flows. I think that's how it works even on Instagram where they will only show you things that appeal to you. Isn't that kind of also the trick of living life — you pay attention to the good stuff rather than the bad? I think Instagram and these social apps are just mimicking that." (PX)

The operation of personalisation algorithms is technically explained by another participant:

> "Based on keywords we type or ads we interact with, there will be a backend activity like that of the recommendation engines — right after your frequent searches it'll start picking up things which you like from the cache and cookies and add into the required algorithm and accordingly publish results. So, the results I get on my first page of search may not be the same for you because it's based on my search history and it is personal." (PX)

The Popularity Theory

This folk theory basically implies that personalisation algorithms provide recommendations based on what is trending on the internet at local or global level, trending within a user's circle of friends and family on social media and also based on the most-preferred brands, people, businesses, songs, websites or movies by fellow users at a given point of time. Some participants believed the likelihood that a piece of content would appear on their feed was based on the number of "likes" and level of engagement:

> "One post has thousands of likes. The other has only two. The latter will obviously show up on my feed. Based on the popularity of a post, priority will be given to it. How trending is it currently in that particular field and how similar it is to your taste — based on your previous search history."

When asked about personalised recommendations in the field of online shopping, a common response is exemplified by PX:

> "I kind of figured out how this selection is put together. Maybe because a person has already purchased an item X plus Y plus Z and that is a repeatedly purchased combination from many users over a while, recommendations also then show that these sets of products are frequently brought together or are most preferred by fellow users."

Interestingly, this theory was reported by all interviewees in the sample, aware and unaware, which makes it the most popular theory proposed for the operation of personalisation algorithms across different internet domains.

Folk Theories of Perspectives and Attitudes of Personalisation Algorithms

This section discusses folk theories around participants' perspectives towards recommendations on various internet intermediaries including their likes/dislikes for personalised recommendations, how they think they affect their daily lives, their trust in recommendation systems, etc., as well as their attitude towards the collection of personal data for personalised recommendations, ramifications of online profiling and its impact on their autonomy.

Personalisation Algorithms are Intrusive

The first folk theory is that 'personalisation algorithms are 'intrusive', 'invasive' and on some occasions, 'creepy'. The participant responses that have helped consolidate this abstract theory are basically an articulation of the uncomfortable emotions they encounter with algorithmic personalisation. PX explained: "I pay to get rid of these advertisements because

they're a waste of time. I don't want to be disturbed when I'm watching a video." This emotion remains common but is spread across multiple everyday internet activities such as online shopping, social media, news, watching movies, etc. PX offers an illustrative example of this:

> "Netflix has the most relatable suggestions ever. It pushes things, which I do like. It's a little bit on the creepier side because it pushes a lot of teenage and gay dramas to me, and I don't know how it knows I love those things because I have never actually watched any of these on my account."

Although some participants claim to understand how algorithmic personalisation works, this folk theory of intrusion underlines a desire for a more precise understanding. It can be articulated "as a cultural condition focused on the possibility of manipulative surveillance" (Ytre-Arne and Moe, 2021, p.818). For instance, PX:

> "You were browsing for something on Amazon and that would randomly pop up when you are in the middle of an Instagram post. These kinds of experiences can feel very intrusive. I think the data sharing that happens between these entities surprised me more than anything."

The theory of algorithms as intrusive was fairly widespread. This theory has been reported by all unaware participants. Respondents with a lower understanding of algorithmic personalisation were surprised as well as confused by this phenomenon whereas respondents who report a high-level understanding of online profiling and data privacy concerns find third-party data sharing unethical and violating. Latter respondents put forward suggestions such as,

> "There can definitely be transparency in that context. Say, for instance when my offsite activity is monitored to build my profile, I think I should be given more control over that sort of behaviour at least."

Suggestions such as this are grouped under additional findings and will be discussed in length in the concluding discussion of this study.

Personalisation Algorithms are Sentient

The second folk theory is a theory in which personalisation algorithms are compared to a living being or a sort of a conscious entity that can feel, touch, hear, see and most importantly, influence. In this folk theory, some respondents have visualised personalisation algorithms as 'a big brother', 'a devil', 'a someone' and other such sentient terms that seem to mean more than a set of code.

> "Sometimes when you are having a conversation on WhatsApp, I always felt that Meta or someone is listening to us."(PX)

This theory treads similar waters as that of the previous folk theory but goes a step further in terms of how users feel violated about their privacy and on a broader societal level, discusses past and imminent ramifications of the same.

> "If somebody has access to what I'm saying, my data, the posts I'm sharing, or the kind of things I'm buying, the faith I belong to - and if I go ahead and buy weapons, probably I'm buying a gun for my own safety. But the fact that I have a history of being critically active in a certain way, I am going to get profiled in a certain way. And that is going to have very real consequences which have already been happening in a lot of cases in this world".(PX)

> "The way I see geopolitics and our structures — big corporations are much more powerful than governments. If you compare bank sheets of government relative to the Big 10 — Google, Apple and the tech companies, they are economically more powerful than governments. They are also updated. They are controlling the technology. The big boss is looking at all of us."(PX)

The above two examples are perspectives from participants who claim to have high digital skills. They also happen to be staunchly against the collection of personal data for online profiling. Next is a response of a participant who holds similar skills but is indifferent to the collection of personal data because of feeling too small and helpless.

> "All is fair in love and war in this very consumer world. Privacy is such a big thing now, especially. after Facebook's incident has been whistle blown - but it'll continue to happen because so many companies are thriving on the data that they're collecting. And we will not stop searching, for good. We will not stop buying things. It's something that you are signing with the devil, you better be in agreement with it and everyone will largely be at peace". (PX)

The responses reveal recognition that algorithms reflect a power dynamic where consumer and corporate interests frequently clash, though they may occasionally align.

Personalisation Algorithms are Efficient

All respondents (100%) in this interview sample share a consensus on the efficiency of personalisation algorithms in sorting relevant information from an ocean of web pages, curating spot-on playlists, making apt movie recommendations, and suggesting perfect combinations of things to buy based on personal taste.

> "I've noticed that if I were to just follow the path, connect the dots of going from one page to another, or one account to another laid out for me, I know literally what's happening everywhere, sitting at home. It honestly makes zero difference to my business and in fact, saves me the energy of unnecessary social interactions, especially as I am in the field of PR and you are expected to be social at the cost of your mental peace."(PX)

Consider the following interview responses, "I got to enter an ecosystem of something like blockchain. which is not a part of my mainstream interest, but personalised recommendations guided me" (PX), "I really enjoy recommendations because I work the first eight hours of my day and I think so much. It's really nice that I don't have to put in a lot of effort to find the information that I want" (PX) and "I've searched for derma roller on my face and it'll say serum. I am happy to be hooked to such recommendations" (PX) –– these participant responses clearly indicate how users find individualised recommendations in the space of online shopping, information search, and other online services handy and convenient. This finding aligns with the fact that personalisation is internalised, and therefore users find it more practical than problematic, despite these recommendations coming at a trade-off with their personal data (Draper and Turow, 2019).

Algorithmic personalisation also acts as a surveillance buddy (Siles et al., 2020) which in some cases is desirable. "For example, there are many applications where you can track your kids and can engage them at home. They can also observe the kid's facial behaviour and gauge whether he's sad, happy or excited. These things are really helpful when both parents are working as you cannot spend much time with your kid" (PX).

On the other hand, personalised recommendations also limit people's trajectory of discovering new things and reduce information diversity. Most participants complained about the limiting nature of personalised recommendations as they add, "I have to make a conscious effort to come out of that and select a different show. Something that helps me learn, grow and change"(PX). Participants have also pointed out that it is easier for

someone who is aware of algorithmic personalisation to constantly seek more diverse options and is often limiting for someone who is not aware of individual personalisation. Furthermore, this folk theory leads us to make another interesting analysis; most participants are happy receiving personalised recommendations in all domains except finance and health. This response by participant PX sums it up precisely: "Personalised recommendations will influence my decision to buy diapers for my daughter, but never which paediatrician I need to take her to."

Personalisation Algorithms are Unempowering

The fourth folk theory is that personalisation algorithms are unempowering. This theory is an extension of the limiting effects of the third folk theory previously discussed. This theory was only reported by aware participants and captures the emotions of 'helplessness', 'powerlessness', 'indifference', 'feeling small' and 'forced content'. They report this as an overarching feeling they have experienced, either at large with personalisation algorithms or on a specific occasion.

> "I might not like it a hundred per cent of the time that I'm being profiled and put into a box and this might be used against me but in a consumer world, it will be used against you because they're constantly feeding you what you want to buy and hear."(PX)

> "They know which neighbourhoods have what kind of people, their political beliefs, what they like and they're using it for something as important as an election, which is supposed to be democratic. No one is supposed to interfere in those decisions."(PX)

The above responses portray a sense of hopelessness of being put into a 'box' alongside. Interviewees point out that just because they have looked for a hotel room in a certain place, they are not interested in flight tickets to that destination. Algorithmic recommendations are omnipresent and because of their reductive nature can at times misconstrue users' true intentions.

> "Personalisation is diluting this complexity because simply stated algorithms yet, do not have the power to completely map human complexity. There are algorithms at the end of the day and inadequate in gauging the grey. Their effort in putting things into black and white is kind of causing this conflict between humans as well – that if you're not black, then you must be white. And if you are white then you cannot be black" (PX).

In a different light, this folk theory also extends this nature of 'un-empowerment' to small businesses who face a difficult time being supported and spotted in a sea of big corporations and brands who are privileged with massive capital costs to spend on marketing. This folk theory brings forth a strong critique of capitalism and consumer subterfuge. "A lot of small vendors are not in a position to be able to spend that kind of money with really good products. I want to be able to support small businesses but they are not put in front of me" (PX).

While this folk theory has been reported only by a portion of respondents, it still brings to the surface some very poignant issues, especially with regards to being profiled without having a comprehensive understanding of identities which results in personalisation coming across as intrusive, unempowering and "as a stupid but persistent creature who follows you around the web, who gets things wrong, who neglects your intentions and deeper meanings, and nevertheless sends its own misconceptions back to

haunt you" (Ytre-Arne and Moe, 2021, p.817). This folk theory also highlights the importance of context, pointed out in a very similar fashion by Nissenbaum (2009) in her concept of "contextual integrity".

Personalisation Algorithms are Instantly Gratifying

The fifth folk theory has been reported some respondents, hence accounting for a small portion of the interview sample. This theory is widely reported by female respondents and specifically in the context of online service and shopping. This folk theory can be articulated as an embodiment of the ways, big and small, in which personalisation is influencing our autonomy.

"Personalised ads are making people compulsive shoppers. It's like buy it, buy it, buy it. It feels to me even after I've made that purchase, I don't think it's gonna stop."(PX)

Respondents have reported making impulsive decisions due to constantly being bombarded by the same kind of recommendations, only having to later regret spending too much effort and money on it. A part of being impulsive with these decisions is their nature of offering instant gratification — a typical feature that captures the zeitgeist of the 'Instagram times' we live in. There's instant gratification from these personalised algorithms because you don't need to put in any effort. Your effort is cut down in half. We are used to everything being an Amazon delivery, whether it's love or instant gratification over a post." Thriving on lower attention spans and impulsive decisions, this culture of instant gratification, now further driven by personalised recommendations (as per this study), also contributes to making users lethargic. "Personalised recommendations are making us lazy as hell" (PX). A harmless repercussion when compared to the effect of profiling on oppressed and marginalised communities, however, is still a finding worth mulling over as a behavioural trait that captures a whole generation.

DISCUSSION AND CONCLUSION

Post-data analysis has resulted in eight folk theories — three in line with DeVito et al.'s (2018) operational theories of algorithms and five abstract theories. These Folk Theories discuss a respondent's conceived notion of the operation of algorithmic personalisation.

The first three folk theories cover each interviewee's understanding of how personalised recommendations operate on the internet, further revealing subtle hints of 'feeling invaded' or 'digital irritation' (Ytre-Arne and Moe, 2021) –– something caused by being watched, heard, seen, and followed by someone or something in the digital realm, eventually arousing emotions such as 'violation' and 'helplessness'. The aforementioned feelings aroused in respondents result from their outlook towards datafication and online profiling but not personalised recommendations themselves. It is safe to report that most respondents were happy with personalised recommendations in online services, entertainment, and shopping. Issues arose only when these personalised recommendations touched sensitive topics like health, family, or finance:

"Let's say I have an endomorphic body type. If they start telling me diet suggestions, I will be uncomfortable. Unless explicitly specified, I do not want suggestions."(PX)

These responses reveal themes of convenience and caution in equal measure subject to the personalisation at play. The gigantic stream of information and options available easily justifies participants' acceptance of individualised recommendations for online services

and social media. This brings us to the crux of this argument –as aware as users might be about personalised recommendations and as uncomfortable they may feel about datafication and being put in a box, their actions vis-à-vis these systems remain almost inactive or at most alter marginally. Reasons for this inaction can be aplenty and the outlook that internet users possess is called 'Digital Resignation' which was proposed by Draper and Turow (2019) as an exposition of the privacy paradox which means, "although people say they care about information privacy, they often behave in ways that contradict those claims". The discussion of the next five folk theories covering user perspectives and attitudes toward personalisation algorithms also flows along similar lines. The folk theories viz. 'personalisation algorithms being intrusive, sentient and unempowering' highlight the feelings of digital resignation and digital irritation amongst users. In situations where users discuss their experiences of internet profiling, these theories touch upon the algorithm that captures every piece of data to attach to it some human semblance (Couldry, 2019; Mayer-Schönberger and Cukier, 2013) but is unable to comprehend human complexity, at the very least.

That folk theories of 'personalisation algorithms are efficient and instantly gratifying highlight users' idea that the algorithm could serve one in ways they like and also touches upon algorithms as surveillant buddies (Siles et al. 2020) in the case of fitness trackers and baby tracking systems as mentioned by interviewees. After presenting the overarching themes from the eight folk theories, it can be concluded that feelings of inescapability, irritation and insecurity are the core emotions largely displayed by participants. As mentioned in the previous paragraphs, the complexity that embodies personalisation algorithms and the power they hold contribute to these uncomfortable feelings. Lack of comprehensive understanding about how algorithmic systems function can lead to the development of unfavorable or distrustful attitudes toward such systems. (Diakopoulos and Koliska, 2017) (Silva et.al, 2022). Hopeful interviewee suggestions to mitigate this complexity serve as critical findings to this study. Some responses in this light are quoted below:

> "So I think where the debate needs to go is in terms of maybe transparency. Let people know in the best way possible what is happening when they use a certain service and provide as much control. Let them know that these are the 10 things that I'm going to take about you and these are the 10 ways I'm going to use that data. That sort of meaningful engagement needs to happen". (PX)

> "We have some browsers available which protect your data. But the awareness about those things is less and also kind of gatekept. We don't have access to it. Oftentimes, privacy is also a premium paid feature and not something that is everyone's right on the internet". (PX)

> "GDPR is a beautiful legislation and there is sufficient legal protection given to individuals. But that's not enough because people are not aware of their rights, they're still doing the clickwrap and getting into the trap. I am hopeful about the younger generation being on top of this". (PX)

Different respondents highlight the need for more awareness and literacy campaigns, some as simple as the importance of setting a default privacy browser. Another suggested route is transparency. While social media platforms provide some information about data sharing practices on their About pages, the majority of details regarding these practices remain opaque or unclear to the public (Bucher, 2012) (Silva et.al, 2022). As suggested by

some respondents, if a user's personal information is being collected on platform x and being shared with platforms w, y and z, the most ethical act corporations can take is to inform the user about this data sharing. Apart from providing timely information, it also helps to communicate Terms & Conditions and privacy policies with greater clarity and lay terminology.

Substantial work has been published on algorithmic literacy and how it informs user behaviour. However, literacy interventions of the past come with some limitations. Instead of fostering informed perspectives, existing efforts to promote digital media literacy have paradoxically contributed to increased confusion and muddled attitudes among people regarding digital media (boyd, 2017, 2018) (Silva et.al, 2022,). Simultaneously, previous research has also attempted to find ways to showcase the transparency of algorithmic systems with hopes of heightening user understanding (Liao et al., 2020; Polack, 2020) and whether insight into the product design alters attitudes towards those systems (Anik and Bunt, 2021; Eslami et al., 2016). While suggested route one i.e., literacy interventions, is seen as a productive way to inform people's attitudes and take strategic action, route two i.e., algorithmic transparency, is urgently needed. A key recommendation based on findings is that users will find it convenient to read through a privacy policy that is drafted in layman's language which also uses infographics. Doing so, visibly reveals the intent of data collection, thus establishing much desired transparency and algorithmic literacy.

One of the biggest weaknesses of this study is the extent to which the research design could justify both theories i.e., the operational theories of how algorithms might operate and abstract user theories of how algorithms are shaping their lives and the world beyond. Nevertheless, this is also its biggest strength as it is one of the first studies in the field of folk theories to combine operational and abstract user perspectives around personalisation algorithms.

While the number of participants interviewed limits the generalisation of findings, insight garnered are valuable because:

1. In-depth and open-ended interviews that elicited user perspectives and attitudes (thematic saturation was reached during seven interviews which is evidence of a marginal generalisation of data within the cohort chosen for this research)
2. The choice to interview aware and unaware participants which invited the audience and elicited knowledgeable and oblivious perspectives helping diversify this study.

In conclusion, the folk theories identified in this study are fleeting and can change with time. They are based on interviewee responses captured at a given time, place, and circumstance. Responses are volatile, as the same interviewees might not fetch the same results when interviewed later. The biggest merit of this research is its empirical focus on India, which addresses a pervasive neglect of non-WEIRD samples in similar studies. Personalisation algorithms carry the inherent power to influence current and future generations. As algorithms move deeper into cultural space, we consciously or not, through our beliefs, place power in these architectures of code. While we cannot open the black box to see what's inside, we can attempt to know what people think and make sense of it.

Conflict of Interest Statement
No potential conflict of interest was reported by the authors.

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