"How has behavioural economics (nudge marketing more specifically) influenced online electronic purchase behaviours?"

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Summary:

This paper evaluates the impact that the knowledge of nudge theory, digital nudging, and the study of behavioural economics, has had on understanding e-commerce consumer behaviour. Owing to the pandemic, and other conveniences of online shopping being made more aware of, the global increase in online shopping rose by 24.1% from $3.46 trillion to a stooping $4.29 trillion (young, 2021). This numerically provides evidence of the relevance that study in this area might provide. Humans are considered to have a few inherent biases/ hindrances that make them less rational. Against the assumptions of neoclassical economics which assumes complete consumer rationality, cognitive limitations constrain human judgement and choice, people occasionally make choices that are against their own interests and people are often altruistic. This study delves into the understanding of various biases or heuristics that producers/firms use to create nudges

and influence consumer behaviour. Availability, representativeness, and anchoring and adjustment heuristics are the specific biases discussed in this paper.

Introduction:

Behavioural economics ,a field of economics, is the study of psychology as it relates to the economic decision-making processes of individuals and institutions (Kenton, 2020). Although relatively new, and critical of many assumptions that are the fundamentals of most traditional economic theories, the field has been vital in the role of understanding how better to not only devise policies but also have more fruitful outcomes from them, and better respond to and influence consumer behaviour. Neoclassical economics formerly based theories on the fact that individuals are rational utility maximizers, making inferences and decisions on the basis of perfect information. In its current incarnation, behavioural economics arose in the second half of the twentieth century by integrating insights from economics and psychology. It is motivated by the observation that, in practice, individual and collective human behaviour deviates systematically from normative principles of economic behaviour. Humans are characterized by bounded rationality, bounded willpower and bounded self-interest: cognitive limitations constrain human judgement and choice, people occasionally make choices that are against their own interests and people are often altruistic.

The online purchase behaviour on the other hand revolves around understanding of consumer behaviours in the e-commerce economy. The e-commerce economy - a market in which goods and services, or the transmitting of funds or data, are done over an electronic network, primarily the internet (Bloomenthal, 2020) - introduces the ambiguity of the feel and experience of a good/service that a traditional shop would not entail. This

essentially means that the behaviour of consumers in such an economy, where other factors like trust and reputation come more into play, are also likely to be much different. Owing to the pandemic, and other conveniences of online shopping being made more aware of, the global increase in online shopping rose by 24.1% from $3.46 trillion to a stooping $4.29 trillion (young, 2021). This allows us to understand ,numerically, the growing relevance of e-commerce and how important understanding consumer behaviour could potentially be for producers during this e-commerce bloom. Additionally, Decision making under risk and uncertainty has been one of the most active and interdisciplinary research topics in judgement and decision making (Lowenstein, weber, welch, Hsee, 2001). Research on this topic can therefore contribute largely to a better understanding of this Decision making under risk and uncertainty.

The fast-paced digitalization of our private and professional lives will result in digital nudging extending to other application areas as people will use digital devices to make decisions in more situations and sectors, and the devices themselves will diversify in form and function. New devices will emerge with new interaction and interface design elements, such as kinetics, virtual reality, and holograms, and designers will need to understand the potential behavioral effects of these new technologies on people's judgment and decision-making (weinmann, 2016).

Understanding consumer behaviour lets producers and firms gain an insight into what essentially influences a consumer's choices, allowing them to eventually use tools to influence the same underlying psychology of these consumers in a way that proves most beneficial for the firm or producer himself or what he thinks will benefit the consumer the most. This understanding can be gained via the field of economics, whilst the influences can be done via "nudges" or "nudge marketing". Nuding as a concept was put forward by

Thaler and Sunstein in 2008, and since then digital nudges have been designed to accommodate the increasingly digitised world. This relatively recent research on these topics however means that little in-depth research has been done on it. Studying these signals or ‘nudges’ help us understand why certain choices and decisions are made and thus enables the design of choices and choice environments (Kesseli, 2021). Nudge marketing refers to deliberately manipulating how choices are presented to consumers. Its goal is to influence what consumers choose, and could be for either the benefit of the producer himself- increase in sales, or for what the producer thinks might benefit the consumer the most. . Examples of nudges could include: default options (that require a significant effort to be made in order to not perform a task - the task that the firm/producer/ government wants you to do), calorie/sugar counts (making a consumer more conscious of their actions) , etc.

Literature review:

Nudge theory, and digital nudging:

“The nudge theory” and “digital nudging” are both vital parts of this research. Since this paper aims to evaluate both of their influences on online purchase behaviour, the first section of this literature review will focus on the breakdown of the two.

The nudge theory, set out by Richard Thaler, is a concept in behavioral economics, political theory, and behavioral sciences that proposes positive reinforcement and indirect suggestions as ways to influence the behavior and decision-making of groups or individuals. It proposes that consumer rationality doesn’t always hold true and therefore the “biased”, “irrational” behaviours of consumers can be influenced by suggestions or ”nudges” via different methods. An example of a nudge would be if merit goods like organic fruits and vegetables were kept in a more accessible place than say the chips or cream biscuits. This nudge influences one’s underlying psychology unconsciously by presenting the already available choices to them in a way such that they do what they’re being influenced to do- consuming merit goods. It is re-designing the already existing choice environment of the consumer in a way that influences the consumer to do what the producer/firm wants them to do. These influences essentially take advantage of the lack of rationality or the presence of biases in the human mind.

Humans are considered to have a few inherent biases/ hindrances that make them less rational: anchoring bias, attentional bias, rule of thumb, status quo, framing effect, etc. The

common denominator of all of these is the fact that it reduces rationality, allowing firms/ producers to sell their products in different ways as the consumer is not going to make a decision solely based on their self interest and which option will give them the most of that anymore. These biases are more often termed as “heuristics” - mental shortcuts that ease the cognitive load of making a decision. To make effective nudges, heuristics are to be studied in detail as that is essentially what the nudge will take advantage of to influence a consumer.

<u>Heuristics:</u> The good, the bad, the biased:

The heuristics most widely studied within psychology are those that people use to make judgments or estimates of probabilities and frequencies in situations of uncertainty (i.e., in situations in which people lack exact knowledge). Most prominent among these are the availability, representativeness, and anchoring and adjustment heuristics (Hertwig, 2002). To better understand the behavior of economic actors, it thus becomes crucial to find out which heuristic is used under which circumstances (campo, 2016). Why are heuristics a concept in the first place? Economics essentially expects a consumer to be rational in three particular aspects : Ability to rank preferences, consistency in those preferences, and access to perfect information.

With heightened digitalisation, even though access to perfect information (which was considered a shortcoming of the assumption earlier) is getting bridged, the capacity of the human brain cannot accommodate or use that information in a systematic way to make a decision that maximises their self interest. Therefore our brains use mental shortcuts that ease the cognitive load of making a decision- heuristics. The study of **heuristics** in human

decision-making was developed only in the 1970s and the 1980s by the psychologists Amos Tversky and Daniel Kanheman. The paper discusses an in depth analysis of heuristics but also raises the concern of how they are highly economical and usually effective, but also lead to systematic and predictable errors. A better understanding of these heuristics and of the biases to which they lead could improve judgements and decisions in situations of uncertainty. This essentially promoted the study and research of heuristics allowing a better understanding of the framework of the same and a classification of the primary heuristics used today: representativeness, anchoring and adjustment, and availability. These are basically the different shortcuts we use to make decisions.

Digital nudges:

Digital choice environments are user interfaces – such as web-based forms and ERP screens – that require people to make judgments or decisions. Humans face choices every day, but the outcome of any choice is influenced not only by rational deliberations of the available options but also by the design of the choice environment in which information is presented, which can exert a subconscious influence on the outcome (weinmann, schneider, Jan vom, 2016).

In such a digital space individuals are particularly prone to making even more deficient decisions. Due to the vast amount of information available on the Internet, individuals often fail to process all the relevant details to reach an optimal choice. Instead, individuals often make decisions on screens in a hasty and automated manner (Mirsch, Lehrer, Jung, 2017). While consumer rationality defines that the rationality entails having all of the

information necessary to make a decision that results in maximum self interest, it doesn't take into account the lack of a human brain's capacity which hampers its ability to process all the information provided in order to make a decision that is most beneficial to them. For this reason, the abundance of information provided on the internet on subject matter but not which of all this information would benefit the individual the most, consumer behaviour online results in deficient decisions.

The advantage however lies in the fact that digital nudging becomes a lot more easy and effective as data collection for course correction becomes a lot more organised. Whether it is information about how long a consumer visits a particular tab of a firm's website, or the timings in which they open it during the day, all the information can be collected systematically and algorithms to analyse the same can be made online with ease. Examples of digital nudges include: personalized email that reminds someone to complete an enrollment form; a text from one team member to the rest of the group that shares the work goals the sender met that week and spurs the recipients to meet their goals (Dhar, Bailey, Mingardon, Tankersley, 2017).

Influences of behavioural economics on digital nudging and consumer behaviour:

People rely on a limited number of heuristic principles which reduce the complex tasks of assessing probabilities and predicting values to simpler judgmental operations. Using the understanding of these reductions in complexity we can analyse and design nudges best that take advantage of these heuristics to create a choice environment that best influences the consumer to perform the task that we, as the producer, want them to. Below is a

discussion focused on the impact of each particular digital nudge in relation to a heuristic/ bias, that the nudge essentially takes advantage of.

Price Priming and the anchoring bias: Psychologists have found that people tend to make decisions largely based on the information that is first provided to them. Daniel Kanheman explains in a 1974 paper that people make estimates by starting from an initial value that is adjusted to yield the final answer. The knowledge of this bias, allows a digital company like amazon to be much more aware of the presentation of the data that is of most importance (according to them) to the consumer first.

A tangible shopping experience like that in an apple store, might hinder the ability of the firm to control the information first provided to you as the space that they control is small in the larger scheme of things. Amazon however has the ability to control the exact information first provided to you as soon as you open their website. Whether it is a bonanza offer (framing effect), or a testimonial from a celebrity, whatever it is that amazon feels should be the “anchor” for the decision that they want you to make, can be presented by them to you on a digital platform with ease.

Once you open a certain commodity that you want to purchase, Amazon is most likely to present to you the recommended retail price next to its own price (Charlton, 2021). This will highlight the disparity between the RRP and amazon’s price for the commodity. That being the information first presented to one might make them register the fact that buying from amazon will be most beneficial to them, making them purchase it (what amazon wants to influence one to do).

Existing studies by “Taylor and Francis” put forths some compelling data from a research conducted to analyse the effects of priming (the studies analyse the impacts of semantic and numeric priming separately) , in specific, on consumer behaviour online. The process of semantic priming involves the prime and the target, which are usually from the same semantic category and share features. ... Semantic priming occurs because the prime activates related words or concepts, facilitating their later processing or recognition, whilst numeric priming uses the presentation of a number prior to a task requiring the individual to make a decision involving a number. Same semantics but different anchoring effects.

The study revealed that numeric priming had a small but significant effect on consumers’ willingness to pay when the value of the product was unclear, but had no effect when products displayed a manufacturer’s suggested retail price (MSRP) or a fixed selling price. Semantic priming had larger effects on willingness to pay and the effects were significant but smaller in the presence of an MSRP. Thus, the combination of numeric and semantic priming has a larger impact on consumers’ willingness to pay (Dennis, 2020). This reinforces the important role that behavioural economics and the study of heuristics can have on the implementation of relevant nudges that result in most desirable outcomes.

Bandwagon effect: The bandwagon effect is the term used to describe the tendency for people to adopt certain behaviors, styles, or attitudes simply because others are doing so. It is a bias that doesn’t have any rationality self-interest wise but rather adopts comfort as a factor of evaluation as the consumer assumes what everyone else chooses must be the best. Whilst advertisements and banners in tangible shops can present data on the large population percentages that buy their commodities from them, e-commerce allows companies to do a lot more than just that. It allows a consumer to read reviews of this

majority that they are trusting, whilst also potentially being provided with infographic data highlighting the use many people have of a particular product. Many marketplace sites like Amazon and eBay use the bandwagon effect as a signal how popular an item is. To reward items that are hot sellers, Amazon increases the listing's ranking when someone searches for that item (foster, 2020). Credible industry experts, endorsements from celebrities, past customers, approval from a large group Friends and peers you know are a few nudges/ techniques that are used to induce the bandwagon effect.

This effect however also poses some consequences. History has shown that dangerous populist (sometimes fascist) movements are also driven by a snowballing uptake of political messages aimed at resonating with 'ordinary people.' Damaging movements are often enabled by the lack of critical thinking entailed by the bandwagon effect. It becomes a "majority wins" situation as opposed to an ethically evaluated decision made by active participation. How does this affect a consumer's behaviour in the e-commerce economy though? The fact remains that whilst online shopping and the e-commerce economy have made shopping a lot more convenient and enjoyable as an experience, it also highlights the nature of how fast information can travel (whether good or bad). The after effect of a bandwagon effect misuse by a company could largely affect the firm's reputation and potential sales. If consumers feel exploited by misrepresentation of numbers that outrightly take advantage of the bandwagon effect, trust - an important factor in consumer behaviour in the e-commerce economy, could be hampered with. A debate therefore rises on the ethics of not only the bandwagon effect, but also behavioural economics as a whole. A refutation to the lack of ethics argued by many on this topic is the concept of "libertarian paternalism". This is the idea that it is both possible and legitimate for private and public institutions to affect behavior while also respecting freedom of choice, as well as the implementation of that idea (wikipedia). It is a fine line however that must be respected in

between merely influencing and designing a choice environment as opposed to outright manipulating the choice of a consumer via means that **misrepresent** information as a whole to them. Therefore digital nudges like the usage of the “bandwagon effect” can very much be ethical and useful to consumers in reducing the brainload of processing so much and also enabling the firm/producer to get they want from the consumer, as long as it is used wisely and not crossing the line of misrepresentation of information, manipulating the psyche of the human brain in a way that contradicts the fundamentals of democracy. Choosing the most effective nudge involves trade-offs, however, because predicting the consequences of implementing certain nudges is not always possible (weinmann, schneider, Jan vom, 20160).

Availability Heuristic: Individuals tend to judge probabilities of events based on the ease at which they can be recalled. Easily available and often or regularly occurring events are perceived as more likely than less present events, independent from real probabilities. When you are trying to make a decision, a number of related events or situations might immediately spring to the forefront of your thoughts. As a result, you might judge that those events are more frequent or probable than others. You give greater credence to this information and tend to overestimate the probability and likelihood of similar things happening in the future. When faced with a choice, we often lack the time or resources to investigate in greater depth. With the need for an immediate decision, the availability heuristic allows people to quickly arrive at a conclusion. Karlsson, Loewenstein, and Ariely (2008) A study showed that people are more likely to purchase insurance to protect themselves after a natural disaster they’ve just experienced than they are to purchase insurance on this type of disaster before it happens. Another example of how companies

use the availability heuristic is where lottery companies are employing the availability heuristic when they remind us of recent winners. We subsequently overestimate our own likelihood of winning and divert money towards the purchase of lottery tickets (Gearon, 2018). Even investments in cryptocurrency, NBA shots, or anything trendy or popular that is proven successful suddenly by a boom in a short period of time, seem attractive to most consumers who lack the complete information and awareness necessary to be able to successfully gain out of these devices. It is nothing but a form of FOMO (fear of missing out), that manifests itself by inducing the belief that this new found success is a gold mine that must be tapped, and that they would gain the exact same out of the investments as the previous people did. As the “Psychology of Money" by Morgan housel famously highlights the fact that personal monetary experiences largely affect choices we make, digital nudges like the availability heuristic often contradict this by providing information in a well designed choice environment influencing one to make any decision, not just monetary, tone deafly on the basis of others’ experiences. This again could be a shortcoming of the use of the availability heuristic, making consumers indulge in decisions that may not necessarily work well for them.

Representativeness heuristic bias:

This bias occurs when the similarity of objects or events confuses people's thinking regarding the probability of an outcome. People frequently make the mistake of believing that two similar things or events are more closely correlated than they actually are. Examples of this include: In financial markets, representative bias is when investors automatically assume that good companies make good investments. However, that is not necessarily the case. A company may be excellent at their own business, but a poor judge of other businesses. This bias is extremely different from the three previously discussed

biases as this isn't necessarily a reflection of the design of the choice environment but rather an irrational assumption made by the consumer himself. The fact is however that the knowledge of this could then lead to a nudge created or a choice environment designed to intentionally make the consumer see correlations in a place where it doesn't exist. This nudge therefore like all other nudges is a result of a bias and is not the causation for a bias itself. It is merely an **enhancer of a pre-existing bias/heuristic.**

More studies and internet articles reveal the consumer aspect of this bias and how it can be fatal to consumer choices as they have previously led to various irrational decisions. The employment of this heuristic therefore, with increasing information on how consumers should avoid falling prey to it) are of more often that not less used.

An online survey (Qualtrics; distributed via Amazon MTurk) with a food categorisation task was used to examine whether consumers indeed use the Representativeness Heuristic when making judgments on the sustainability of food products, and to determine the key product and personal characteristics that might influence this categorisation. The survey was completed by 193 UK participants who were asked to categorise 40 images of food products, from three different food groups: fruits and vegetables, dairy products, mueslis and granolas e totalling 7720 decision outcomes (sustainable vs. not sustainable vs. 'unsure'). A probit regression revealed that product packaging featuring the word 'British', a farm reference, or absence of packaging significantly increased consumers' perceived sustainability, whereas green coloured packaging decreased it. Consumers' environmental awareness had a significant negative influence on perceived product sustainability. Importantly, these influences varied across different food groups, however, product price had no significant effect on perceived sustainability in any of the food groups. The findings imply that consumers use the representativeness heuristic when purchasing food, and this

may lead to erroneous judgments about a product's sustainability based on irrelevant cues, such as the colour of packaging (Becker, Panzone, 2020).

This is a thought provoking case study that shows the detrimental effects of using a representative bias even on a globally important issue like the knowledge of sustainability and the appropriate use of the same. The implementation of safe nudges therefore has a lot of room for study and research as those could result in allowing firms and producers to raise revenue and sales without affecting important things like perceptions of sustainability etc.

Conclusion

Overall it can be seen that the study of behavioural economics has led to the formation of various nudges, in this context, digital specifically. This allows producers and firms to gain a large insight into the underlying psychology that they can eventually use to design effective choice environments whilst also maintaining integrity in their way of doing so. Behavioural economics and the study of the concepts that make it like: Nudges, the nudge theory, heuristics, can all be seen via this paper to be highly effective in improving the understanding of online consumer behaviour in this increasingly digitised world.

Leading e-commerce companies like Amazon, Flipkart, and various others are seen to implement these digital nudges employed by the in depth study of heuristics and biases that highlight cognitive shortcuts that human brains make use of in the wake of overconsumption of scattered information. Whether it is the use of the anchoring effect, bandwagon effect, or the availability heuristic, all these ecommerce companies are driving up their sales day by day by the implementation of these vital tools.

The consideration of the ethicality and provision of libertarion paternalism is of utmost importance as it is capable of massively impacting the reputation of companies that employ digital nudges as they can largely affect trust that consumers place in these well established companies. With the increasing study of the relatively new concept of behavioural economics and digital nudging as a whole, more developments and research could heed to an even better understanding of the design of choice environments and nudges, improving the game of e-commerce companies largely.

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