

The Effect of Nudge Marketing on the Consumer Buying Behaviour of Smartphones in E-Commerce

Devashree Lote*, Vikas Namjoshi** and Binod Sinha***

ABSTRACT

People's decisions are based on the influence that is created by the decision-making environment. Nudging is a concept that belongs to behavioural economics, it describes how even a small change in the decision-making environment influences the decision-making outcome and that small change remains unnoticed by the customers. This concept of nudging was then applied in the digital environment. This study also aims in testing three different nudges like user rating, purchase pressure cue and default on consumer buying behaviour in e-commerce. A survey form was circulated and responses were collected and then a multi-regression analysis was done to check the impact. Nudges like user rating and purchase pressure cue have a significant impact on consumer buying behaviour and the default didn't have any significant impact on consumer buying behaviour. Hence, further research should be done on the default nudge by considering its different factors.

Keywords: *Nudge marketing; Digital nudges; User rating; Purchase pressure cue.*

1.0 Introduction

The Nudging technique is based on behavioural economics. The nudging technique is not only being used in commercial spaces but also in public policies. Nudging helps the customers to make decisions on the basis of the choices or the surroundings that are being presented to the customers. Nudging was very common in offline stores, but the gradual increase in the use of the internet has made us use this nudging technique in the online environment or in the e-commerce sector.

*Corresponding author; Student, Balaji Institute of Modern Management, Pune, Maharashtra, India (E-mail: devashree.lote@gmail.com)

**Deputy Director, Balaji Institute of Modern Management, Pune, Maharashtra, India (E-mail: dydirector@bimmpune.edu.in)

***Professor, Balaji Institute of Modern Management, Pune, Maharashtra, India (E-mail: binod-sinha@bimmpune.edu.in)

Nudging in e-commerce is also called digital nudging. This nudging technique is used to design suitable elements for the users in such a way that it influences the customers buying behaviour. Increasing use of the internet and technologies had given us many choices and alternatives that lead to constant decision-making. Many firms invest a good amount of money to come up with an excellent strategy so as to position their products. From the development of the product to its positioning, nudges can be used to influence customers. There are different types of nudges that influence customer's choices. The three nudges that are considered in this study are user rating, purchase pressure cue and default.

User rating is the review that is used by customers to decide whether to buy the product or not. It is the most important factor in the online mode as the customers can't touch or see the product physically. It also includes the user ratings of the customers, the feedback of the customers, reviews of the customers, etc. It provides a base for the consumers to make better decisions before buying the product.

Purchase pressure cues are used in influencing the customers to complete their process of purchasing by signalling the low availability or even by displaying limited time duration like countdowns, etc. Nowadays, we can see that there are sales and offers frequently held by e-commerce sites. The default option is the one which is preselected and is proceeded if the customer unselects it. Many a time, the default option is used to set the benchmarks by the customers. Default is imposed so as to get the desired option as the outcome. If the default is well designed according to the customers' preference, then it will benefit both the company and the customers as it would be very easy for the customers to make decisions, increasing purchasing and also aiding risk reduction.

2.0 Research Problem

The E-commerce sector is growing at a very rapid pace. It is replacing brick and mortar stores causing a shift in consumer buying behaviour, which leads customers to first know about the brand and compare it with other products before buying. So, every small effort counts when it comes to attracting consumers digitally. Hence, digital nudging will help the brand to influence the decision-making of the customers towards their brand.

3.0 Research Objective

- To examine the impact of user rating on the consumer buying behaviour of smartphones in e-commerce.

- To examine the impact of purchase pressure cues on consumer buying behaviour of smartphones in e-commerce.
- To examine the impact of default on consumer buying behaviour of smartphones in e-commerce.

4.0 Literature Review

Sinha (2018) concluded that the nudge theory can also be used to drive good conduct and can also help in maintaining distance from troublesome ones, it can also help people to take the right decision. Additionally, it can direct people in a proper direction and avoid them breaking the laws.

Weinmann *et al.*, (2016) concluded that customers' decisions are generally based on the decision environment which they are exposed to. It becomes difficult for customers to notice the changes made in the environment. Nudging is a concept of behavioural economics that states relatively that even a small change in the decision environment can lead to a change in the decision outcome, which may be unnoticed by the decision maker. This nudging is being applied in the digital environment, called digital nudging.

Djurica & Figl (2017) stated the relative impact created by the different nudging techniques that affects the choice processes of the customers and also the attitude of the customers towards the sites that uses these nudging techniques. Research is done not only on digital nudging techniques but also on how far they shape the customers' attitudes towards the e-commerce site.

Kroll *et al.* (2019) concluded that this research contributes to the usage of digital nudges and changes in the behaviour of their customers in saving energy. A research was conducted to test the two digital nudges; self-commitment and social norms which were pre-decided. Three experimental groups and one control group were formed. The gap which was seen was that social norms can be more effective if formulated and used in digital nudging. The final result of the study showed that a combination of both the digital nudges led to more saving of energy than using merely any one nudge as energy saving of this group was the highest among all the groups.

Amirpur & Benlian (2015) stated that purchase pressure cues like signal limited time or limited product availability are commonly used features on e-commerce sites to boost up the sales. An experiment, 'Deal-of-the-Day,' was conducted in which it was seen that limited time pressure cue increased deal choice, but the limited product availability cue had no distinct influence on it. Also, it was observed that providing a limited time pressure cue is more effective than not providing it. Purchase pressure cues

should be selected and used wisely so as to stimulate positive reinforcement. The study also states that purchase pressure cues is a cost-effective technique to influence customer buying decision.

Berger *et al.*, (2020) stated that digital nudging helps to represent a promising approach so as to foster desirable consumer behaviour. A study was done in an online grocery store with three digital nudging elements like default rules, simplification, social norms to know the effectiveness regarding consumer behaviour. Also, the digital nudge element default was very effective and promoted ecologically sustainable food products that controlled the typical food consumption behaviour. The simplification also had a positive effect on the consumer's sustainable behaviour who were environmentally conscious. Unexpectedly and contradictorily, there was no influence of digital nudging elements of social norms on sustainable shopping behaviour.

VonBergen *et al.* (2016) concluded that nudges that are empowered with the status-quo bias involve default rules that specify the conditions imposed on the customers when they fail to make a decision. Defaults are considered as nudges as they exert influence on choice without restricting customers' freedom to choose and are often inevitable as many customers just go with the flow and agree to whatever the default may be. As a large number of people are expected to end with it, the default options are handled with care and attention.

Huang *et al.* (2018) stated how effective digital nudging is for the customers with social sharing of online platform content. In the research, it was concluded that nudging messages with the help of monetary incentives, and relational and cognitive capital framings will lead to an increase in the social sharing behaviour of customers, while an only nudging message with simple requests decreases social sharing, compared to the control group without nudging.

Schär & Stanoevska-Slabeva (2019) stated that digital nudging helps users to guide the customers to make decisions on the screens. In multi-channel, multi-owner users' journeys, it is important to guide users through all stages of the customer journey. This research which examines the application of digital nudging throughout customer journey is just emerging and relatively immature. But on the other hand, nudging has proven to be effective in different contexts, such as social security administration, marketing or health concerns, there are few guidelines as to when to implement which nudging effect in a customer journey.

Friis *et al.* (2017) concluded that the priming nudge attempted to prime vegetable choice, but it reduced the consumption of chilli con carne; the default nudge provided a fixed portion of the salad as status-quo or the default bias, which resulted in

an increase in salad intake, but the total energy intake decreased. This paper tried to check if nudging can help to change the people's habits by shifting to the healthier option in a self-service buffet setting.

5.0 Hypothesis

H₁: There is a significant impact of user rating on the consumer buying behaviour of smartphones in e-commerce.

H₂: There is a significant impact of purchase pressure cues on the consumer buying behaviour of smartphones in e-commerce.

H₃: There is a significant impact of default on the consumer buying behaviour of smartphones in e-commerce.

6.0 Research Methodology

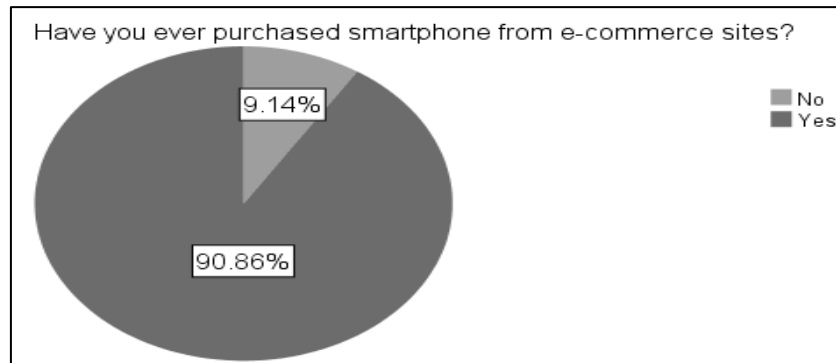
The research methodology adopted for the research is a descriptive type quantitative research design. This method is used to collect the quantifiable data of the respondents' sample for doing the statistical analysis. Also, the convenience type non-probability sampling technique was used. For data collection, due to COVID-19, the survey was conducted online. So, an online survey questionnaire was prepared and was sent to the respondents as the primary survey was done. The respondents of the survey were from pan India locations. For analysing the data and coming to a specific conclusion, the statistical tool SPSS was used.

7.0 Data Analysis and Interpretation

Out of 175 respondents about 90.86% of the respondents who did the survey purchased smartphone from ecommerce sites and remaining 9.14% did not purchased smartphone from ecommerce sites so their responses are not included in further analysis (Figure 1).

The results of the primary survey are provided in Figure 2-10. 38.36% respondents check user ratings before buying the smartphone. 41.51% respondents agree that they buy a smartphone with high user rating. 38.99% agree that they had purchased smartphone during limited time duration. 32.70% respondents disagree that they don't buy a smartphone with user rating 3 or below 3 (lower user rating). 32.70% are neutral that they purchased smartphone when the availability of the smartphone is displayed.

Figure 1: Smartphone Purchased from E-Commerce Site



Source: Primary Survey

Figure 2: Checking the User Rating of the Smartphones before Buying

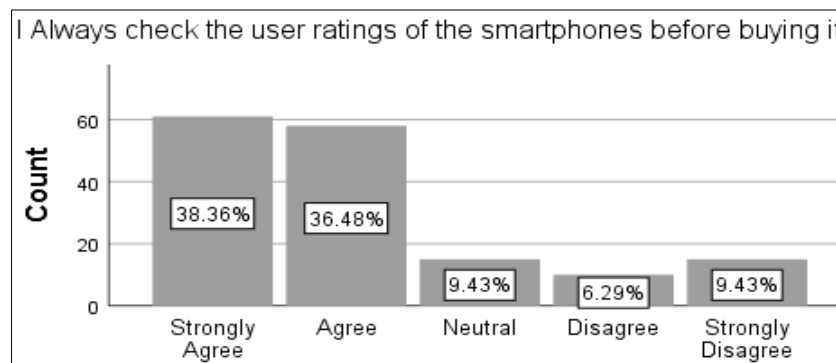


Figure 3: Buying the Smartphone with High User Rating

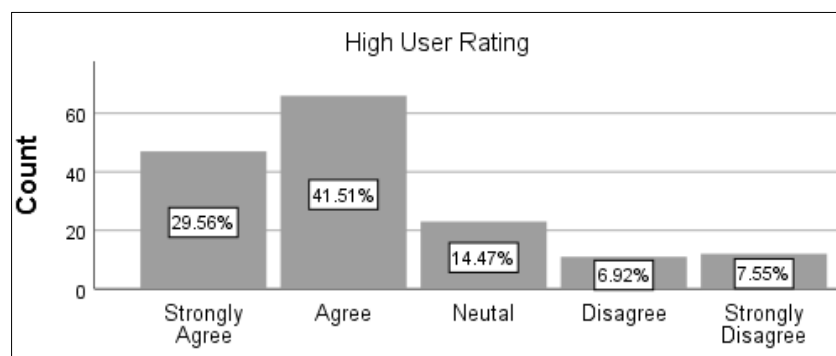


Figure 4: Buying the Smartphone with User Rating 3 or Below 3

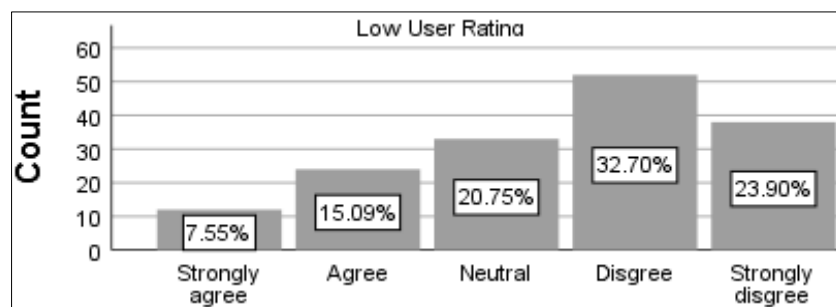


Figure 5: Buying Smartphone during Limited Duration Offers

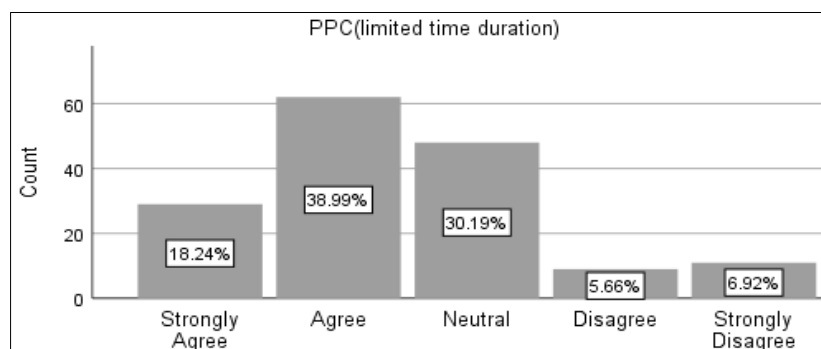
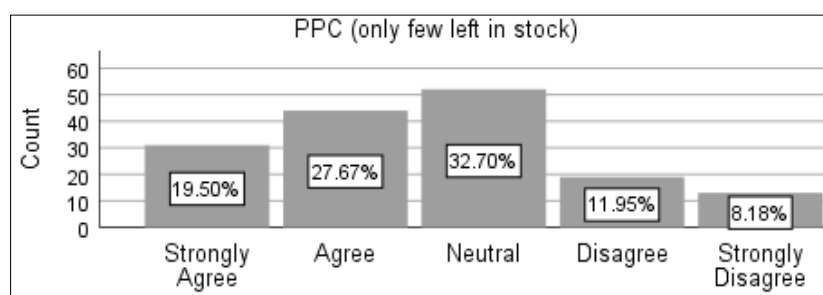


Figure 6: Buying Smartphone When Limited Quantity Left



10.69% people agreed that they purchase smartphones with pre-selected accessories. 21.38% respondents strongly agree that they check for offers/availability before buying of product. 11.95% strongly disagree that they buy insurance that was pre-

selected while buying of a smartphone. 21.38% have noticed that accessories are pre-selected while buying smartphone

Figure 7: Checking Offers/Availability before Buying Smartphone

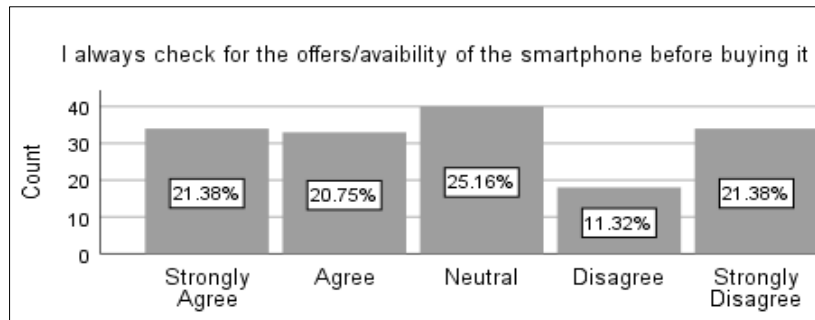


Figure 8: Buying Smartphone with Pre-Selected Accessories

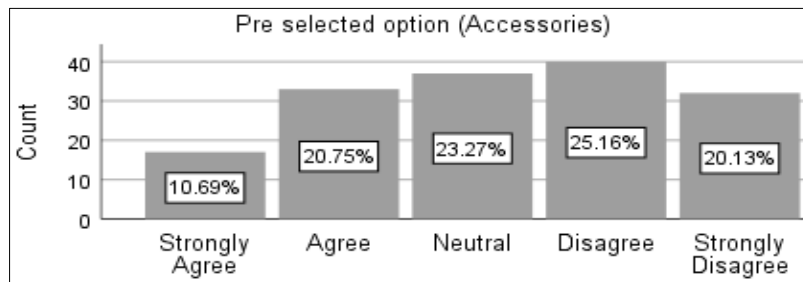


Figure 9: Buying Smartphone with Pre-Selected Phone Insurance

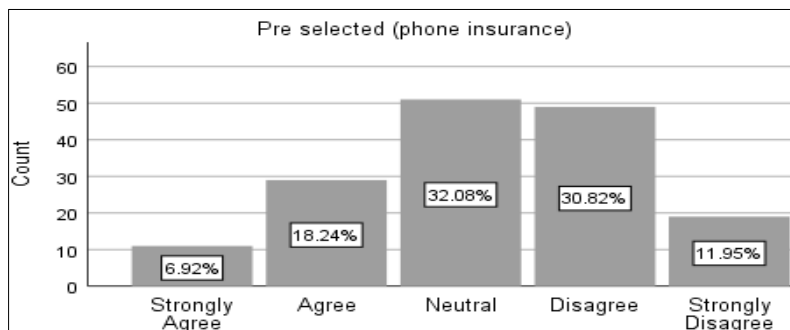
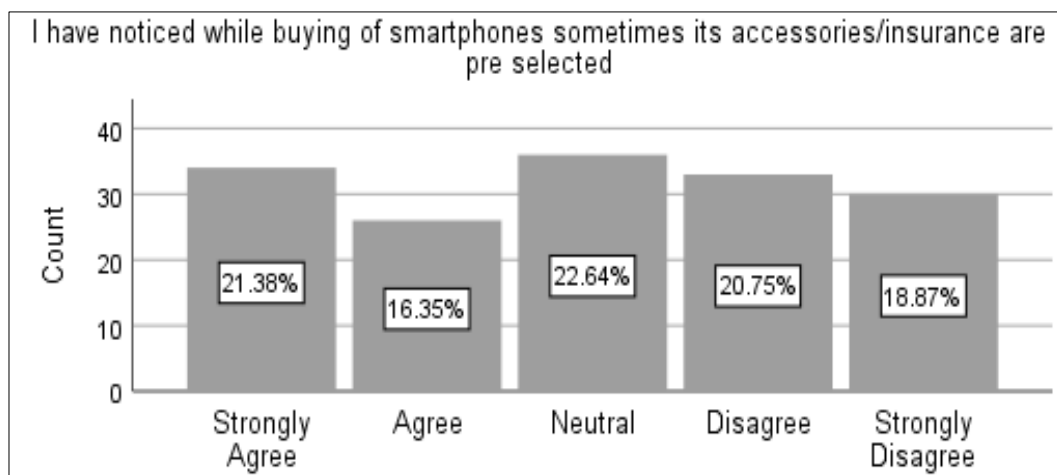


Figure 10: Noticing Pre-Selected Accessories/Insurances before Buying Smartphone

8.0 Hypothesis Testing

H₁: There is a significant impact of user rating on the consumer buying behaviour of smartphones in e-commerce.

Table 1: Model Summary Table for Impact of User Rating

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.514	.265	.255	1.083

Table 2: ANOVA Table for Impact of User Rating

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	65.813	2	32.906	28.064	.000
	Residual	182.917	156	1.173		
	Total	248.730	158			

Table 3: Coefficient Table for Impact of User Rating

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.542	.312		4.949	.000
	High User Rating	.522	.074	.485	7.063	.000
	Low User Rating	.165	.071	.161	2.339	.021

From the output (Tables 1-3) we can interpret that,

Significant value in ANOVA = 0.000 < 0.05, so, the null hypothesis is rejected.

The hypotheses are true and proved that user rating has a significant impact on consumer buying behaviour.

Hence, it is proved that user rating has a significant impact on the consumer buying behaviour of smartphones in e-commerce.

H₂: There is a significant impact of purchase pressure cues on the consumer buying behaviour of smartphones in e-commerce.

Table 4: Model Summary Table for Impact of Purchase Pressure Cues

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.200 ^a	.040	.028	1.407

Table 5: ANOVA Table for Impact of Purchase Pressure Cues

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.854	2	6.427	3.248	.042
	Residual	308.731	156	1.979		
	Total	321.585	158			

Table 6: Coefficient Table for Impact of Purchase Pressure Cues

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.867	.409		9.462	.000
	PPC(limited time duration)	.249	.106	.187	2.342	.020
	PPC (only few left in stock)	.136	.097	.111	1.394	.165

From the output (Tables 4-6) we can interpret that,

Significant value in ANOVA = $0.042 < 0.05$, so, the null hypothesis is rejected.

The hypotheses are true and prove that there is a significant impact of purchase pressure cues on the consumer buying behaviour of smartphones in e-commerce.

Hence, it is proved that there is a significant impact of purchase pressure cues on the consumer buying behaviour of smartphones in e-commerce.

H3- There is a significant impact of default on the consumer buying behaviour of smartphones in e-commerce.

Table 7: Model Summary Table for Impact of Default

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.148 ^a	.022	.009	1.135

Table 8: ANOVA Table for Impact of Default

ANOVA						
	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4.495	2	2.247	1.746	.178 ^b
	Residual	200.801	156	1.287		
	Total	205.296	158			

Table 9: Coefficients Table for Impact of Default

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.918	.385		10.183	.000
	Pre-selected option	.088	.071	.099	1.235	.219
	Pre-selected phone insurance	.129	.083	.124	1.549	.123

From the output (Tables 7-9) we can interpret that,

Significant value in ANOVA = $0.178 > 0.05$, so, the null hypothesis is accepted.

The hypotheses are false that there is a significant impact of default on the consumer buying behaviour of smartphones in e-commerce.

Hence, it is proved that the default nudge does not have any impact on the consumer buying behaviour of smartphones in e-commerce.

9.0 Findings

The aim of this research study was to find the effect of three nudges (user rating, purchase pressure cue and default) on the consumer buying behaviour of smartphones in e-commerce sites. However, a separate analysis was done for each of the three nudges. The following are the findings of the test conducted on the data collected.

- When the respondents were asked if they had purchased smart phones online, it was observed that the majority (90.86%) of them purchased it online rather than going to the brick-and-mortar stores.
- To test the effect of user rating, a multi-regression analysis was conducted between the impact of user rating and the consumer buying behaviour. It was observed that 38.36% of the respondents prefer checking user ratings before buying the smartphones of their choice and this impacted the buying decisions of the customers.
- It was also seen that 41.52% respondent purchased the smartphone that had higher user ratings (4 or above 4 out of 5) than those smartphones which had lower user ratings (3 or below 3 out of 5).
- It was also found that purchase pressure cues also have a relatively good impact on consumer buying behaviour. Purchase pressure cues like 'limited availability' and 'limited time duration' were considered which created an impact on consumer buying behaviour.
- A majority of the respondents have purchased smartphones when there was a limited time duration offer or limited availability of the product.
- 11.95% strongly disagree that they buy insurance that was pre-selected while buying a smartphone whereas 25.16% disagree that they buy accessories that are pre-selected while buying a smartphone.
- It was observed that default like pre-selected accessories or phone insurance had no impact on respondents buying behaviour.

If nudges are formulated and presented in a better way, they help in increasing the sales and help the customers to take decisions a bit faster.

10.0 Conclusion

This paper helps in understanding the use of nudges like user rating, purchase pressure cue and default in buying of smartphones. A survey questionnaire was made to check different nudges. This study contributes by suggesting nudges like user ratings, purchase pressure cues and default. Also, it showed that user ratings and the purchase pressure cue had a significant impact on consumer buying but default had no impact on consumer buying behaviour. Proper application of these nudges can create a positive impact on sales of smartphones if handled with caution. So, selection of a suitable nudge is very crucial so as to attract the customers whose buying behaviour would be impacted.

11.0 Recommendations

Proper framing of nudges like user rating and purchase pressure cues should be done, that will result in an increase in sales. Purchase pressure cues like limited time duration should be used wisely to attract customers. Also, a combination of two or more nudges can be used so that customers get attracted and end up buying the smartphones. Other nudges like priming, framing, symbols, and anchor pricing can also be explored so as to get more clarity on this topic. Nevertheless, this study was able to show that there is a need for further research to understand how nudges can be implemented along the customer journey.

12.0 Limitations

It was difficult for the respondents to be in the imaginary framed situation and then respond to the questions in the questionnaire. Due to the on-going pandemic, face to face interaction was not possible and hence, a lot of cross questioning and different types of experiments were not conducted. Also, many in-store/online experiments can be conducted to check the impact of nudges on consumer buying so as to get a clear idea about it. Though the default nudge didn't work in this case, future studies can be done on it.

13.0 Future Scope

Customers are now majorly buying smartphones from e-commerce sites. This can be considered as a great opportunity for future researchers or the brands to consider different types of nudges or even a combination of two nudges that will attract the

customer and also increase the sales. This study can also help in contributing to the emerging studies or researchers on nudge marketing and digital nudging.

References

Amirpur, M., & Benlian, A. (2015). Buying under pressure: Purchase pressure cues and their effects on online buying decisions. Retrieved from <https://aisel.aisnet.org/icis2015/proceedings/HumanBehaviorIS/29/>

Berger, M., Müller, C., & Nüske, N. (2020). Digital Nudging in Online Grocery Stores—Towards Ecologically Sustainable Nutrition. Retrieved from https://aisel.aisnet.org/cis2020/societal_impact/societal_impact/11/

Djurica, D., & Figl, K. (2017). The effect of digital nudging techniques on customers' product choice and attitudes towards e-commerce sites. *AMCIS 2017 Proceedings*. 13. Retrieved from <https://aisel.aisnet.org/amcis2017/HumanCI/Presentations/13>.

Friis, R., Skov, L. R., Olsen, A., Appleton, K. M., Saulais, L., Dinnella, C., & Perez-Cueto, F. J. (2017). Comparison of three nudge interventions (priming, default option, and perceived variety) to promote vegetable consumption in a self-service buffet setting. *PloS one*, 12(5), e0176028.

Huang, N., Chen, P., Hong, Y., & Wu, S. (2018, January). Digital nudging for online social sharing: Evidence from a randomized field experiment. In *Proceedings of the 51st Hawaii International conference on system sciences*.

Kroll, T., Paukstadt, U., Kreidermann, K., & Mirbabaie, M. (2019). Nudging people to save energy in smart homes with social norms and self-commitment. In *Proceedings of the 27th European Conference on Information Systems (ECIS)*, Stockholm & Uppsala, Sweden, June 8-14, 2019. Retrieved from https://aisel.aisnet.org/ecis2019_rip/52

Schär, A., & Stanoevska-Slabeva, K. (2019). Application of digital nudging in customer journeys: A systematic literature review. *AMCIS*. Retrieved from https://aisel.aisnet.org/amcis2019/meta_research_is/meta_research_is/13/

Sinha, B. (2018). Nudge theory and its application in different sectors and business. *Review of Research*, 7(6), 1-4.

VonBergen, C. W., Kernek, C., Bressler, M. S., & Silver, L. S. (2016). Cueing the customer using nudges and negative option marketing. *Atlantic Marketing Journal*, 5(2), 12.

Weinmann, M., Schneider, C. & Brocke, J. V. (2016). Digital Nudging. *Business & Information Systems Engineering*, 58, 433–436. Retrieved from <https://doi.org/10.1007/s12599-016-0453-1>.

Website Links

- <https://behavioralpolicy.org/what-is-nudging/>
- <https://blog.navapbc.com/reading-notes-nudge-ad3422840c7e>
- <https://www.consilium.europa.eu/en/documents-publications/library/library-blog/posts/nudge-improving-decisions-about-health-wealth-and-happiness/>
- <https://www.veeqo.com/blog/nudge-marketing>