

Hand Sanitizers' Consumer Purchase Decision - Adapted Model, Testing And Validation

V V Devi Prasad Kotni

Associate Professor, Dept of Marketing, GITAM School of Business, GITAM Deemed-to-be University, India
mail: devi_kv@yahoo.com

DOI: 10.47750/pnr.2023.14.02.261

Abstract

The first thing the COVID-19 teaches the public is to keep your hands clean and safe. The demand for hand sanitizers has suddenly grown because using these products is one of the strategies to defend against COVID-19. Sanitizers and masks were classified "necessary goods" by the Indian government under the Essential Commodities Act. The government has set the price of a 200ml bottle of hand sanitizer at Rs.100/-. Furthermore, the Indian government set the price of sanitizers at 2ml for no more than Re.1/-. The objectives of the research study are to adapt the five-stage consumer decision making model (Kotler et al. (2009)) for the hand sanitizer product in the COVID-19 scenario and to adapt and define the scale items related to each stage of the consumer decision making process with regard to the hand sanitizer product. The findings indicate that consumers demonstrate regular purchasing behaviour when they are happy with an emergency product (hand sanitizer product in covid-19 scenario). Consumers will prefer to acquire emergency-related products solely from approved stores (like medical outlet).

Keywords: Hand Sanitiser, Pharmaceutical, Consumer Decision, Purchase Process.

I INTRODUCTION

Corona virus disease (COVID-19), according to the WHO, is an infectious illness caused by a recently identified corona virus. The majority of patients infected with the COVID-19 virus will develop mild to moderate respiratory disease and will recover without the need for special care. The Corona Virus COVID-19 pandemic is the defining global health disaster of our day, as well as the most difficult issue we have faced since World War II. The virus has spread to every continent except Antarctica since its discovery in Asia late last year. Cases are increasing on a daily basis in Africa, the Americas, and Europe.

Countries are racing against the clock to slow the virus's spread by diagnosing and treating patients, conducting contact tracing, limiting travel, quarantining people, and cancelling big gatherings such as sporting events, concerts, and schools. People over the age of 65, as well as those with underlying medical conditions such as cardiovascular disease, diabetes, chronic respiratory disease, and cancer, are more prone to acquire severe illness. Being thoroughly informed on the COVID-19 virus, the sickness it produces, and how it transmits is the greatest strategy to avoid and slow down transmission. Wash your hands regularly, use an alcohol-based rub, and avoid touching your face to protect yourself and others from infection.

Because the COVID-19 virus transmits mostly by droplets of saliva or discharge from the nose when an infected individual coughs or sneezes, respiratory etiquette is particularly vital. The epidemic is advancing like a wave, and it may still hit those who are least prepared. Hand sanitizer is a liquid, gel, or foam usually used to diminish contagious agents on the hands. In most circumstances, hand washing with soap and water is generally preferred. Hand sanitizer is fewer effectual at killing certain kinds of germs and unlike soap and water, it cannot remove harmful chemicals. Human corona viruses, including the 2019 corona virus (COVID-19) belong to the family of enveloped viruses. The "envelop" is like a jacket made up of lipids and proteins and protects the virus from the environment and helps it to enter human cells such as lung cells. Soaps, detergents, and alcohol-based hand sanitizers break the envelop, rendering these viruses inactive. The researchers tested the efficiency of varying doses of two WHO-recommended and two customised hand sanitizer formulations on the COVID-19 virus in the hand sanitizer investigation. The World Health Organization recommends two formulas: (1) 80% ethanol, 1.45% glycerol, and 0.125% hydrogen peroxide, and (2) 75% 2-propanol, 1.45% glycerol, and 0.125% hydrogen peroxide.

The first thing the COVID-19 teaches the public is to keep your hands clean and safe. The demand for hand sanitizers has suddenly grown because using these products is one of the strategies to defend against COVID-19. Sanitizers and masks were classified "necessary goods" by the Indian government under the Essential Commodities Act. The government has set the price of a 200ml bottle of hand sanitizer at Rs.100/-. Furthermore, the Indian government set the price of sanitizers at 2ml for no more than Re.1/-. The aim of this research, in the COVID-19 scenario, apply the five-stage consumer decision making model (Kotler, 2011) [1] for the hand sanitizer product. Adapt and define scale items relating to each stage of the customer decision-making process for hand sanitizer product. To investigate the behaviours and actions of customers in the purchase of hand sanitizer goods in order to provide a marketing mix strategy.

II Theoretical Background

Martin Fishbone and Ice Janzen (1975) [2] proposed the Theory of Reasoned Action. This method was said to be superior than information integration theory. There are two notable changes. Hawkins Stern (1962) [3] was a firm believer in the notion of motivating behaviour. According to Stern, the ordinary customer might depict illogical purchase motives as being close to reasonable buying decisions. The learning model is based on the work of Russian physiologist Ivan Pavlov (1960) [4]. When we say that something has been learnt, we imply a change in behaviour that occurs as a result of repetition and experience. Fishbeins-Multi (1975) [5] contains information on the brand's features and benefits. This model does an excellent job of explaining how customers evaluate brand alternatives and important attributes.

Cox et al. (1983) [6] established the five-stage consumer behaviour model, which was later redefined by Kotler et al (2009). Decision-making models were first developed by John Dewey (1910) [7] and Herbert (1955) [8]. According to Solomon(2016) [9], repeat customers should skip straight from the Problem Identification step to the Purchase Decision stage.

Problem Identification (PI): This is the first stage in the consumer decision-making process, and it focuses on identifying the consumer's need, want, or desire. More specifically, the need might be genuine or felt, as well as want or desire. In the instance of the Hand Sanitizer product, the COVID-19 circumstance may compel users to utilise the product. There may be situations at work, home, or outside when the use of hand sanitizer is made necessary, which may create a demand for consumers to purchase hand sanitizer. It is possible that consumers use hand sanitizers because their friends and social groups do. Some customers may be using these items due of price reductions or special offers. Consumer marketing and advertising initiatives may occasionally motivate people to use hand sanitizers. Professional advice, such as that of a doctor, can have a significant influence on consumer willingness to use hand sanitizer. The goal of the need/problem identification (PI) stage is to identify and clarify the problem/need before moving on to the Search for Information (SI) (PI->SI). Three scale items (observed variables) are modified and correlated with a latent variable (hypothetical construct) termed Problem Identification (PI) in the Consumer Decision Making Process.

Search for Information (SI): After identifying and defining the consumer problem (need), the second stage in the traditional consumer decision making process is Search for Information (SI), in which the consumer searches and contacts various information sources to gather the necessary information to satisfy their identified needs/wants/desires. The information sources are diverse, ranging from television and radio to print media, internet media, out-of-home media, and social media. Peer groups, friends and family members, retailers, expert opinion, professional counsel, and so on are all sources of knowledge. When purchasing hand sanitizers, there is every potential that the consumer may contact several of these sites to get information on hand sanitizers and many relevant brands. The ultimate goal of this stage, Search for Information (SI), is to locate numerous sources of information, analyse it, and identify several alternative brands for assessment (EA) that can meet the consumer's needs/wants/desires [SI->EA]. Based on these theoretical assumptions, three scale items (observed variables) are modified and linked to another latent variable (hypothetical construct) termed Search for Information (SI) in the Consumer Decision Making Process.

There is a constraint related with the stage of Information Search (SI). This stage may not be applicable to repeat purchase customers because they may have learned about the hand sanitizer and its various brands during the first-time purchase, so consumers may not perform information-search again in the repeat purchase unless they are dissatisfied with the first-time purchase brand. Generally, repeat buy customers will execute the third stage of the consumer decision making process (i.e. Evaluation of Alternatives (EA)) right after performing the first stage (i.e. Problem Identification (PI)) by avoiding the second step, i.e. Search for Information (SI) [PI->EA].

Evaluation of Alternatives (EA): Following the completion of the Search for Information (SI) stage, the customer will go on to the third stage of the consumer decision making process, namely the Evaluation of Alternatives (EA), in which the consumer analyses numerous alternative brands found in the second stage (i.e. Search for Information). The customer will assess the discovered alternative brands against certain criteria that will differ from one consumer to the next, also known as the consumer black box. The assessment criteria may include characteristics such as brand image, price, availability, recommendations, quality, distinctiveness, and so on. In the case of hand sanitizer, customers are seeking for product characteristics such as alcohol-based sanitizer, percentage of alcohol content in the hand sanitizer, and so on due to public promotion by doctors and other professionals. The ultimate goal of the third stage, Review of Alternatives (EA), is to identify the optimal brand based on the requirements and desires of the customers following a comprehensive evaluation of alternative brands [SI->EA]. Based on these theoretical assumptions, three scale items (observed variables) are modified and linked to another latent variable (hypothetical construct) named Evaluation of Alternatives (EA) in the Consumer Decision Making Process.

A constraint is also related with the step of Alternative Evaluation (EA). This stage may not apply to repeat buy clients since they may have previously investigated alternatives and purchased the brand the first time. If the buyer is happy with that brand, the consumer will purchase that particular brand immediately in a subsequent purchase, avoiding the two successive

steps of the decision-making process, namely Search for Information (SI) and Evaluation of Alternatives (EI). That is, after completing the first step (Problem Identification (PI)), the consumer will continue immediately to the fourth stage (Purchase Decision (PD)) [PI->PD].

Purchase Decision (PD): After finishing the Evaluation of Alternatives (EA) stage, the customer will go on to the fourth stage of the consumer decision making process, the Purchase Decision (PD) stage, where the consumer will go to purchase the best brand identified in the Evaluation of Alternatives (EA) stage. At this step, the consumer will go through the buy decision process, along with other variables such as location, time of purchase, purchase method, and so on. In the case of hand sanitizers, the consumer will choose the location of purchase, such as medical stores, general stores, or internet portals. The end result of this fourth step, Purchase Decision (PD), is to buy the chosen brand from a specific location after conducting Evaluation of Alternatives (EA) [EA->PD]. Three scale items (observed variables) are modified and correlated with another latent variable (hypothetical construct) named Purchase Decision (PD) in the Consumer Decision Making Process.

Post Purchase Behaviour (PPB): After completing the product Purchase Decision (PD) stage, the consumer will proceed to the fifth and final stage of the traditional consumer decision making process, Post Purchase Behaviour (PPB), where the consumer will evaluate the performance of the product by comparing expectations and perceptions of the product. The Post Purchase Behaviour is the behaviour displayed by the consumer after the product has been consumed until the product is discarded. If the consumer's expectations and perceptions are met, the consumer will be happy with the acquired brand, which will result in improved consumer positive perception, improved brand image, and good word-of-mouth publicity about the brand. If the consumer's expectations and impressions are not realized, the consumer will be unsatisfied with the acquired brand, resulting in bad consumer perception, diminished brand image, unfavorable word-of-mouth publicity about the brand, and brand switching in the next purchase. In the case of hand sanitizers, behavioral variables such as customer happiness, customer discontent, brand switching, brand loyalty, brand recommendation, and so on will influence the hand sanitizer companies' post-purchase behaviour. The ultimate result of this fifth stage, Post Purchase Behaviour (PPB), is the display of consumer happiness or dissatisfaction levels, good or bad brand publicity, brand switching or brand loyalty, and so on after the Purchase Decision (PD) is made [PD->PPB]. Three scale items (observed variables) are modified and related to another latent variable (hypothetical construct) termed Post Purchase Behaviour (PPB) in the Consumer Decision Making Process based on these theoretical assumptions.

III Methods:

The study is empirical in nature; the sample size is 384; the sampling technique is convenience sampling; the data capture instrument (DCI) is a structured questionnaire; the study area is Visakhapatnam city; the study period is December 2022 and March 2023; the statistical tool used is Structural Equation Modeling (SEM); and the software used is IBM AMOS.

To investigate the internal consistency of the items, the reliability of the scale employed in the study was examined using Cronbach's alpha for each dimension separately and overall. Only items with Cronbach's coefficients larger than 0.7 were kept in the research. After removing three items, Cronbach's coefficients for all five constructs ranged from 0.78 to 0.84. Finally, 15 items were chosen and kept for examination.

Using IBM AMOS software, Confirmatory Factor Analysis was performed on the five stage decision making model to test the convergent and discriminant validity of the components. CFA findings are shown in Table 1 and 2.

The values of the model fit indices are found to be within the acceptability limits proposed by Hair et al (2010) [10]. The values of absolute fit measures indices of measurement model were found as $p=0.000$ and $\text{Chi-Square}=299.190$ at $df=80$, $\text{Chi-Square}/df=3.739875$, $\text{Root Mean Square of Approximation (RMSEA)}=.185$ and $\text{Goodness of Fit Index (GFI)}=.879$, $\text{Adjusted Goodness of Fit Index (AGFI)}=.819$, $\text{Incremental Fit Index (IFI)}=.83$, $\text{Normed Fit Index (NFI)}=.704$, $\text{Comparative Fit Index (CFI)}=.789$ and $\text{Tucker-Lewis Index (TLI)}=.712$. The incremental fit measure values were also discovered in the limit of acceptability. Finally, the 5-stage consumer choice model was shown to be compatible with the data obtained on consumer buying decisions of hand sanitizers.

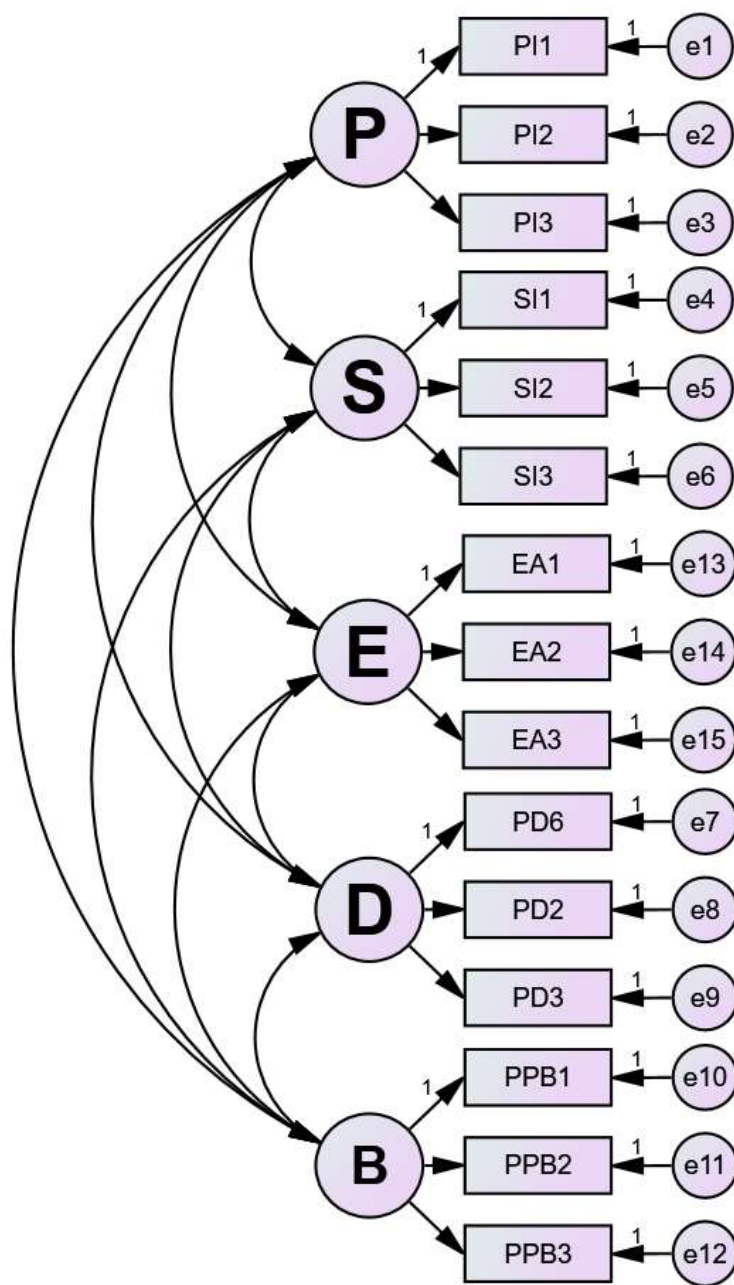


Figure 1: Proposed CFA Model – Consumer Purchase Process Model

IV Results:

Table 1: Covariances among the constructs – decision making stages

			Estimate	S.E.	C.R.	P	Label
P	<-->	S	.337	.099	3.402	***	par_11
P	<-->	D	.025	.057	.430	.667	par_12
P	<-->	B	.027	.041	.665	.506	par_13
P	<-->	E	.082	.067	1.216	.224	par_14
S	<-->	D	.787	.185	4.264	***	par_15
S	<-->	B	.260	.122	2.131	.033	par_16
S	<-->	E	.771	.207	3.727	***	par_17
D	<-->	B	.956	.151	6.343	***	par_18
D	<-->	E	1.041	.211	4.927	***	par_19
B	<-->	E	.436	.142	3.078	***	par_20
*** significant							

Table 2: Standardized Regression weights for the constructs – decision making stages

			Estimate	S.E.	C.R.	P	Label
PI1	<---	P	.296	.107	2.212	***	par_1
PI2	<---	P	.663	.783	4.160	***	par_2
PI3	<---	P	.782	.854	4.038	***	par_3
SI1	<---	S	.694	.390	6.255	***	par_5
SI2	<---	S	.868	.104	11.331	***	par_6
SI3	<---	S	.724	.080	10.787	***	par_7
PD6	<---	D	.624	.373	3.371	***	par_8
PD2	<---	D	.127	.121	1.888	***	par_9
PD3	<---	D	.297	.142	4.228	***	par_10
PPB1	<---	B	.727	.185	5.454	***	par_11
PPB2	<---	B	.021	.132	.309	***	par_12
PPB3	<---	B	.741	.134	7.398	***	par_13
EA2	<---	E	.883	.098	10.275	***	par_14
EA3	<---	E	.332	.066	5.409	***	par_15

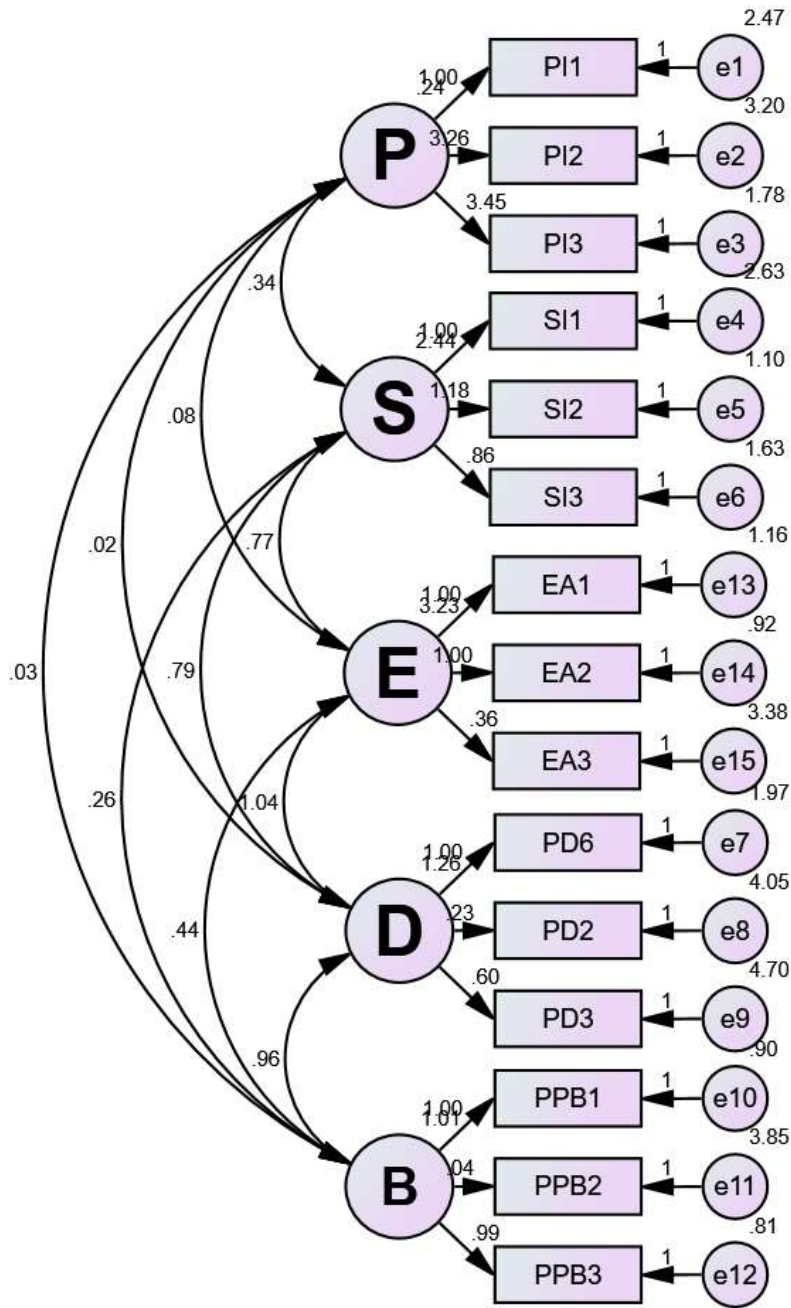


Figure 2: Unstandardized estimates - CFA Model – Consumer Purchase Process Model

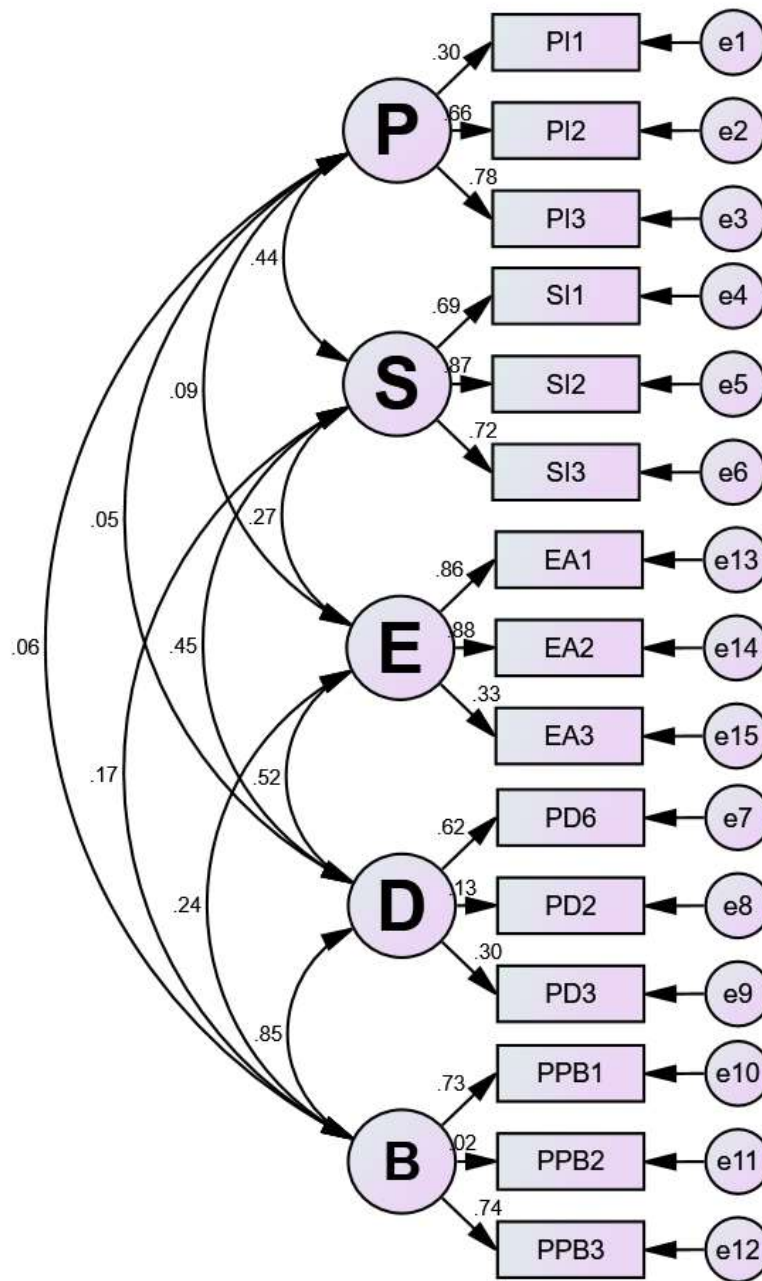


Figure 3: Standardized estimates - CFA Model – Consumer Purchase Process Model

From the Table 1, It may be inferred that the study model supports four of the six hypotheses that are constructed in accordance with the research objectives and research questions. The hypothesis testing is determined to be significant at the .000 level for all four hypotheses.

From the Table 2, The four hypotheses are $P \leftrightarrow S$, $S \leftrightarrow E$, $E \leftrightarrow D$ and $D \leftrightarrow B$. The Problem Identification (P) can have a positive impact on Search for Information (S), which indicates that the consumer's search for information can be influenced

by how they identify the problem. The Search for Information (S) can have a beneficial influence on the Evaluation of Alternatives (EA), which implies that the evaluation criteria can be adjusted based on the information acquired by the customer. The Evaluation of Alternatives (E) can have a beneficial influence on the Purchase Decision (D), which means that the purchase of hand sanitizers can be based on the evaluation criteria, which are in turn based on the information searched. Purchase Decision (D) may effect Post Purchase Behaviour (B), which indicates that the hand sanitizer selected will influence post purchase behaviour in terms of customer happiness.

Theoretical Implications: Consumers display regular purchasing behaviour if they are happy with an emergency product (hand sanitizer product in covid-19 scenario). Consumers will prefer to acquire emergency-related products solely from approved stores (like medical outlet). The Issue Peers, society, expert guidance, and marketing and advertising initiatives all have a significant impact on identification.

Practical Implications: In the case of hand sanitizers, marketing and advertising activities of corporations (such as a perceived necessity) also have an influence on consumer problem identification. Consumers are contacting many sources for information and education. The Internet, TV, and social media are major suppliers of hand sanitizers. Consumers evaluate various sanitizer brands based on characteristics such as the firm's brand image, doctor/professional advice, and the product's alcohol content. Consumers prefer to buy sanitising products after conducting extensive brand research and determining the best value for money. Consumers' post-purchase behaviour toward hand sanitizers products includes good WoM publicity and brand loyalty if they are happy. The following adapted scale has been tested and validated as shown in Table 3.

Consumer Purchase Decision Scale Items:

Table 3: The Adapted Scale Items Purchase Decision – Hand Sanitisers

[PI1]	Because of the COVID-19 problem, I purchased the hand sanitiser product.
[PI2]	I'm using since I'm required to use hand sanitizer at work/home/outside.
[PI3]	I want to use the sanitizer since my FRIENDS AND PEERS are.
[SI1]	I use the Internet Media to look up information on various sanitizer brands.
[SI2]	I watch TV Media to learn about different sanitizer brands.
[SI3]	I look for Print Media to learn about sanitizer brands.
[EA1]	When I go shopping, I hunt for ALCOHOL BASED SANITIZER.
[EA2]	The higher the ALCOHOL CONTENT in the hand sanitizer, the more inclined I am to buy it.
[EA3]	The firm's BRAND IMAGE is a vital consideration when purchasing hand sanitizer.
[PD1]	I will only purchase hand sanitizer from a medical supply store.
[PD2]	I'll get the sanitizer from any general store.
[PD3]	I will also purchase the sanitizer from any online/e-commerce outlet.
[PPB1]	If I am pleased with a certain brand of hand sanitizer, I will purchase more of the same brand.
[PPB2]	Even if I am delighted with a certain brand of hand sanitizer, I will purchase another brand the following time for variety.
[PPB3]	If I am pleased with a certain brand of hand sanitizer, I will suggest it to others.
Source: Survey of Literature and Scale Adaption	

Acknowledgements: The author wants to acknowledge GITAM Deemed-to-be University for funding this research.

References:

1. Philip Kotler, *Marketing management*, Person Education, New Delhi, 2011.
2. Fishbein, Martin, and Icek Ajzen. Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley, 1975.
3. Stern, H. The Significance of Impulse Buying Today. *Journal of Marketing*, 1962; 26(2): 59–62. doi: 10.1177/002224296202600212.
4. Pavlov, I. P. Conditioned reflexes (G. V. Anrep, Ed. Trans.). New York: Dover, 1960.
5. Fishbeins-Multi. Extended model for consumer behaviour. *Journal of Consumer Research*. 1975; 2(2): 118-136.
6. Cox, A, Granbois, Dh & Summers, J. Planning, search, certainty and satisfaction among durables buyers: a longitudinal study. *Advances in Consumer Research*, 19823; X:394- 399.
7. Dewey, J. *How We Think*. Lexington, MA: D.C. Heath and Company, 1910.
8. Solomon, M R. *Consumer Behaviour: Buying, Having and Being*, Pearson Education New Delhi, 2016.

9. Simon, H. A. A Behavioral model of rational choice, *Quarterly Journal of Economics*, 1955: 69:99- 118.
10. Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. *Multivariate Data Analysis*. Seventh Edition. Prentice Hall, Upper Saddle River, New Jersey, 2010.