# Perceived impact of COVID-19 on impulsive buying of essential safety products: a moderating role of over-burdended stream of communication

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**Abstract**
COVID-19 produces severe negative effects on every form of business and restricts people in their homes. Hence resulted in a significant increase in panic which causes an increase in impulsive buying which is extensively linked with essential safety goods. However, there is a lacking of studies associated with an increase in impulsive buying due to the spread of COVID-19 and prior research was not mainly focused on emergency goods. Therefore, there is a significant need to examine the effect of COVID-19 on the impulsive buying of emergency products with reference to Pakistan. Data collection has been made from customers of retail stores of Karachi analysis has been done through SMART-PLS. Findings indicated that COVID-19 is fostering panic in inhabitants of Karachi which are resulting in impulsive buying of emergency products. However, an over-burdened stream of information is found to be a potent moderator that diminishes the impulsive purchase of some categories of emergency products.

**Keywords:** COVID-19, Impulsive Buying, Emergency Products & Over-Burdened Stream of Communication

**Introduction**
The virus which originated from Wuhan province of China transformed into the global pandemic in a very short span of time and is still affecting the entire globe (Harahap, Ferine, Irawati & Amanah, 2021). Pandemic resulted in lockdowns and quarantine which are imposed to reduce further spread of the virus and therefore people avoid commuting work from offices and schools. However, rules and regulations pertaining to social distancing are affecting mental health and well-being. On the other side, the pandemic is also fostering impulsive buying

behavior due to the stress created by the outbreak (Xiao, Zhang & Zhang, 2020). Thus, people are forced to store excessive inventories of essential safety items like household products & hand sanitizers face masks, etc (Harahap *et al.,* 2021). Similar has been indicated by Xiao et al (2020), that stress and anxiety caused by the spread of COVID-19 resulted in an increase of impulsive buying and stockpiling of essential safety items. hence the scenario resulted in a significant shortage of essential safety items and worsens the situation for all those who are not inclined to panic buying (Harahap e*t al.,* 2021).

## Statement of Problem and Theoretical Framework

The spread of COVID-19 is making people around the world panic and therefore shopping activities are also been done in panic. Condition is also strengthened beliefs regarding death and therefore makes people more inclined towards impulsive buying (Harahap et al., 2021). This impulsive buying is resulting in a serious shortage of essential safety supplies like face-masks etc and also fosters distress and panic. However, there are few studies that are supplemented with empirical evidence as most of the studies under this vein are based on a qualitative approach. Moreover, previous studies are based upon the static relationship between the pandemic and emotions and behavior of individuals. Thus studies lacks in associating the findings with intra-individual fluctuations and therefore the over-burdened stream of information (Xiao *et al.,* 2020), may have a potent role in the study. The variable is used as a moderator as the study is focused specifically on the purchase of essential safety items like face masks (Xiao et *al., 2020*), antibiotics, vitamins, and supplements (Roundhal, 2021). The reason being spread of COVID-19 is increasing uncertainty day after another and thus focusing extensively on safety issues (Xiang *et al.,* 2020).

Hence potent to examine the scenario due to COVID-19 & its relation with impulsive buying behavior (Xiao *et al.,* 2020), where impulsive buying is the major contributor to the sales of retail sector (Bellini, Cardinali & Grandi, 2017). However, retailers may also receive severe hits due to the spread of pandemics and they must devise some strategies to gain momentum in new-normal. Thus it has been predicted that online shopping and home delivery will be the preferred mode of shopping and purchase (Rogeveen & Sethuraman, 2020). Thus, this study focuses extensively on impulsive buying of essential safety products from online buyers.

## Major Research Questions

**RQ1:** Does COVID-19 result in impulsive buying of essential safety goods?
**RQ2:** Do results COVID-19 on impulsive buying are subjected to over-bounded information?
**RQ3:** Does COVID-19 result in panic among inhabitants of Pakistan?

## Significance of the Study

The study is worthy not only in the field of academia but also in the academic world as the study examines the concept of impulsive buying which lacks the empirical investigation (Xiao *et al.,* 2020). Moreover study also explore the concept with respect to the Asian & developing market i.e. Pakistan where people store edible rather than sanitizers, soaps, and medicine, etc (Islam, Pitafi, Arya, Wang, Akhtar, Mubarik & Xiaobei, 2021). Thus the study will aid in theory building as well as increase practical knowledge regarding the effect of COVID-19

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on inhabitants of Pakistan. Hence, legitimate to mark this study as pervasive as it is helpful in theory building as well as practical understanding.

## Literature Review

The uncertainty caused by the spread of COVID-19 resulted in uncertainty which is also fostering the probability of impulsive buying (Xiao *et al.,* 2020). The panic resulted in a scarcity of essential safety goods like food, beverage, and medicine etc (Harahap *et al.,* 2021).

On the other hand, vaccine was under trials for a longer period and thus the initial focus of physicians and health experts was towards the increase of immunity level that may act as sheath against COVID-19. Thus, resulted in stock-piling of antibiotics, supplements, and vitamins (Roundhal, 2020), similar as indicated by Xiao et al (2020), that impulsive buying resulted in the unnecessary purchase of medicine, alcohol, and safety products. Although stocking was to boost the level of immunity and reflected through the unnecessary purchase of antibiotics, vitamins, and supplements, etc (Roundhal, 2020). Hence worsen the conditions for those who are not inclined towards panic buying (Harahap *et al.,* 2021).

Therefore, exploring the phenomenon regarding impulsive buying due to outbreak of disease is desirable for the generation of theoretical backgrounds and perspectives. On the other hand COVID-19 resulted in panic and fear which increases the percentage of impulsive buying. Although, still there is low understanding about fear appeal and its impact on customer's emotional intentions to purchase extra products due to spread of ear and uncertainty. On the other hand there is also a lack of understanding that how media may spread interpretation and risks and hence it is also unclear that how it will affect consumer's retail purchase (Naeem, 2020). However, studies legitimize the effect of media on consumer perception that media influence consumer perception and forces scarcity of essential safety products. Thus, exaggerated information can misguide consumers' and product shortage might be caused due to exaggerated reports associated with disruption of supply chain. Therefore, legitimate to believe the overburdended communication might trigger fear of product vanishing which forces consumers for stockpiling (Li *et al.,* 2021)

## Research Hypotheses

$H_{1a}$: There is a relationship between the outbreak of COVID-19 and panic in people

$H_{2a}$: There is a relationship between panic in people and impulsive buying of face-masks

$H_{3a}$: There is a relationship between panic in people and impulsive buying of antibiotics

$H_{4a}$: There is a relationship between panic in people and impulsive buying of vitamins

$H_{5a}$: There is a relationship between panic in people and impulsive buying of supplements

$H_{6a}$: Over-Burdened stream of communication does not moderate the relationship of panic in people and impulsive buying of face-masks

$H_{7a}$: Over-Burdened stream of communication does not moderate the relationship of panic in people and impulsive buying of antibiotics

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$H_{8a}$**:** Over-Burdened stream of communication does not moderate the relationship of panic in people and impulsive buying of vitamins

$H_{9a}$**:** Over-Burdened stream of communication does not moderate the relationship of panic in people and impulsive buying of supplements

## Research Model
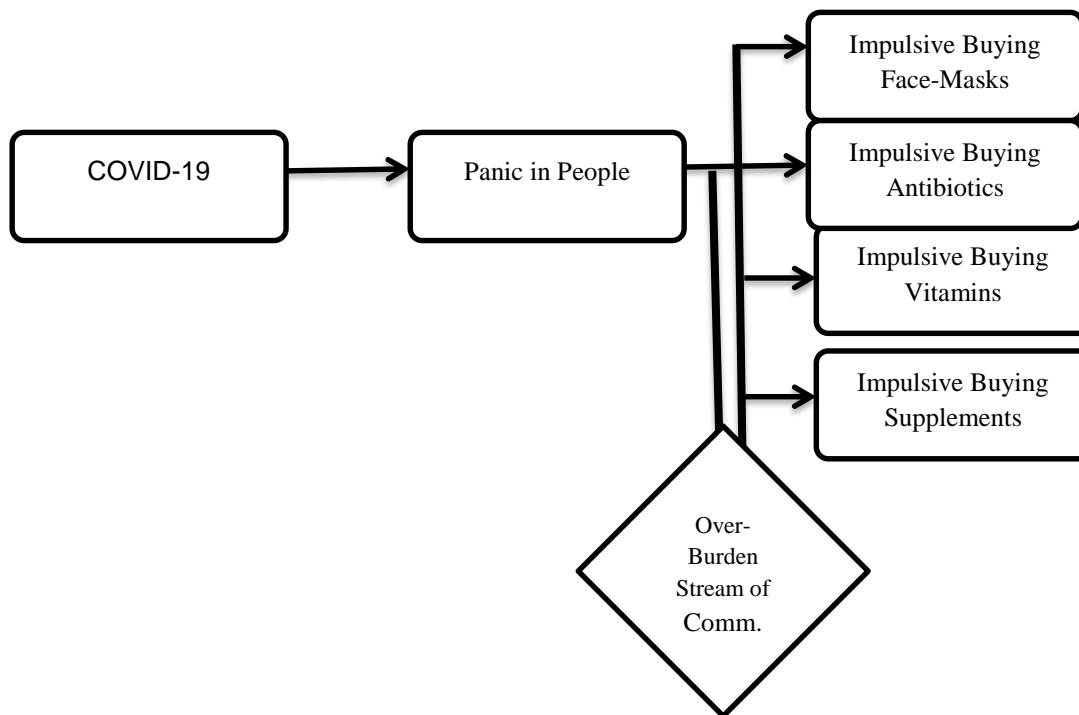


## Research Methodology
## Research Design

The research follows epistemology as the research philosophy as previous studies under this vein were qualitative with a lack of empirical investigation (Naeem, 2021 & Xiao *et al.,* 2020). However, Naeem (2021) uses the ontological assumptions as of the research philosophy as research claims that people from different races and social classes have a different sets of experiences and this will affect their routine purchase decisions.

However, this study has been conducted in accordance with Harahap et al. (2021); Xiao et al. (2020), and Roundhal, (2021) regarding impulsive buying of essential safety products. Thus, in accordance with these the real purpose behind the research is knowledge building and hence epistemology is effective to be used as the philosophy (Saunders *et al*., 2015). The philosophical stance to link philosophy with the appropriate method of data collection and analysis (Žukauskas *et al.,* 2018) and here stance is post-positivism, which may be used for qualitative as well as quantitative studies (Saunders *et al*., 2015). However, most of the time post-positivism

has been incorporated in quantitative research (Žukauskas *et al.,* 2018) through surveys as a research strategies (Saunders *et al*., 2015). The study setting was non-contrived, researcher interference was the moderate, the unit of analysis was individual (Sekaran & Bougie, 2016), and the time horizon was cross-sectional (Saunders et al., 2015 & Sekaran & Bougie, 2016).

## Sampling Design

Using the reference of Bellini et al (2020) and Roggeveen and Sethuraman (2020), the research population includes inhabitants of Karachi who uses online medium to purchase emergency products during COVID-19. Thus the data has been collected through convenience sampling and the sample size is 384 respondents which are the minimum size of the sample with a 95% confidence interval (Delafrooz, Taleghani & Nouri, 2014). The sampling type non-probability and method of sampling was convenience sampling as it is convenient to conduct & also provides the efficiency of cost & time (Jager et al., 2017).

Especially in the days of COVID-19 use of this sampling allows sending research instruments through Google docs which aids further in the process of research. The method has also been used by several studies e.g. Akbar et al (2021), while conducting studies on marketing the disadvantages of convenience sampling i.e. lack of generalizability (Jager et al., 2017), are not applicable.

## Questionnaire:

The questionnaire is adaptive as it has been generated through a combination of several quantitative studies. Major contributors for devising elements for independent and dependent variables are Ahmed et al (2020); Cheriyan & Tamilarasi (2020); Eger et al (2021); Wang and Chapa (2021) etc. However, the mediator has been generated through Lins and Aquino (2020) & elements for moderator have been devised through Ahmad and Murad (2020). .All the elements were also transformed into Likert scale so to induce their applicability and understanding (Revilla Staris & Krosnick, 2014)

## Statistical Testing

Xiao et al. (2020), indicated that there are few studies which use empirical evidence to indicate the impact of COVID-19 on impulsive buying behavior.

Similarly, most of the previous studies were static in the relationship to pandemic and impulsive buying and also lacks in intra-individual fluctuations.
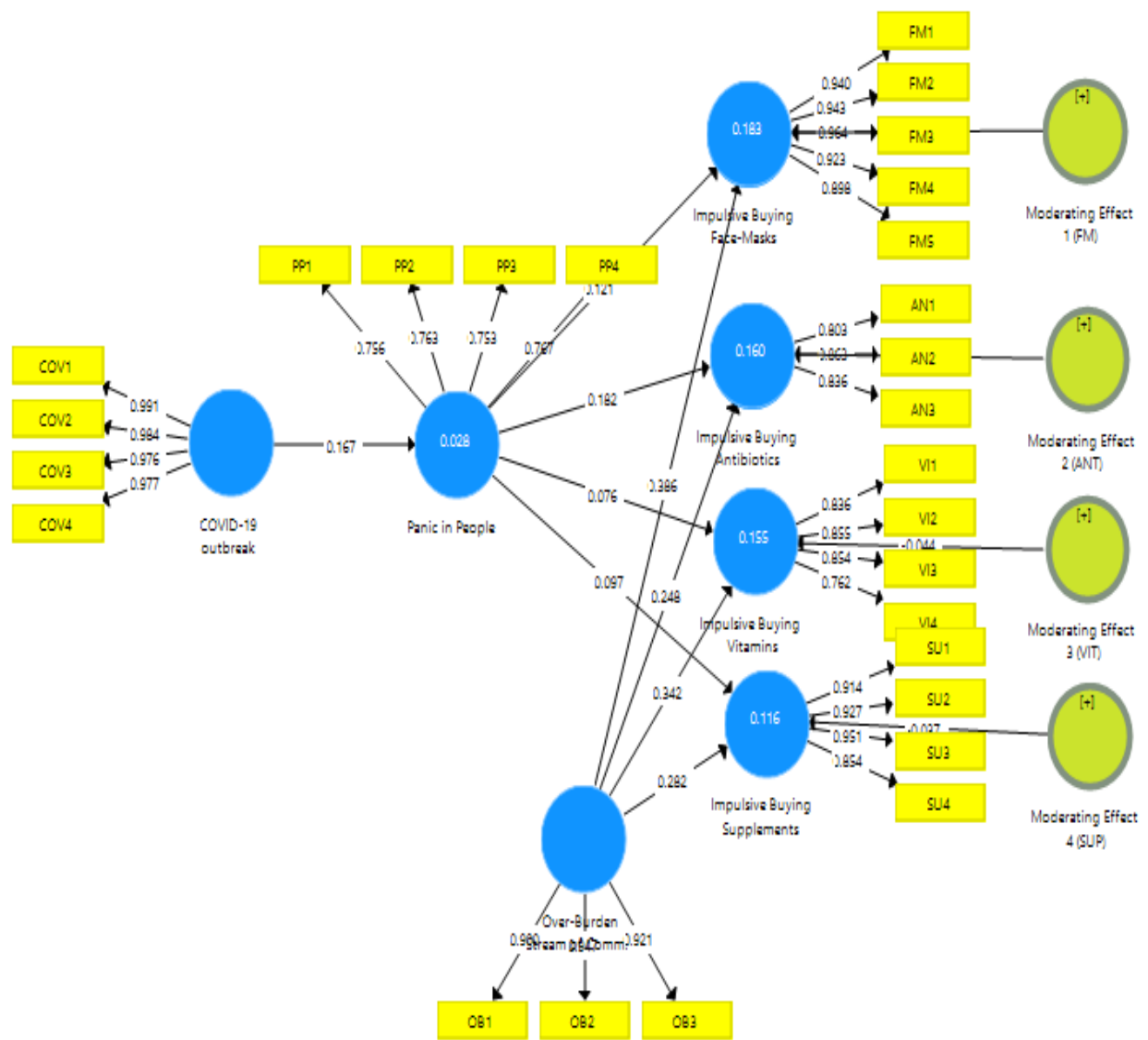
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**Figure 1:** CFA and Outer Loadings

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*Hence* Hence with the moderation of an over-burdened stream of information, the study may address intra-individual fluctuations. Thus it is a theory-building approach and SMART-PLS must be used for analysis (Hwang, Malhotra, Kim, Tomiuk & Hong, 2010), which may also be used for larger samples (Wong, 2013).

## Outer Loadings

| | COVID-19 outbreak | Impulsive Buying Antibiotics | Impulsive Buying Face-Masks | Impulsive Buying | Impulsive Buying Vitamins | Mod Effect 1 (FM) | Mod Effect 2 (ANT) | Mod Effect 3 (VIT) | Mod Effect 4 (SUP) | Over-Burden Stream of Comm. | Panic in People |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **AN1** | | 0.803 | | | | | | | | | |
| **AN2** | | 0.863 | | | | | | | | | |
| **AN3** | | 0.836 | | | | | | | | | |
| **COV1** | 0.991 | | | | | | | | | | |
| **COV2** | 0.984 | | | | | | | | | | |
| **COV3** | 0.976 | | | | | | | | | | |
| **COV4** | 0.977 | | | | | | | | | | |
| **FM1** | | | 0.940 | | | | | | | | |
| **FM2** | | | 0.943 | | | | | | | | |
| **FM3** | | | 0.964 | | | | | | | | |
| **FM4** | | | 0.923 | | | | | | | | |
| **FM5** | | | 0.898 | | | | | | | | |
| **OB1** | | | | | | | | | | 0.900 | |
| **OB2** | | | | | | | | | | 0.947 | |
| **OB3** | | | | | | | | | | 0.921 | |
| **PP1** | | | | | | | | | | | 0.756 |
| **PP2** | | | | | | | | | | | 0.763 |
| **PP3** | | | | | | | | | | | 0.753 |
| **PP4** | | | | | | | | | | | 0.767 |
| **Panic in People * Over-Burden Stream of Comm.** | | | | | | 1.427 | | | | | |
| **Panic in People * Over-Burden Stream of Comm.** | | | | | | | 1.427 | | | | |
| **Panic in People * Over-Burden Stream of Comm.** | | | | | | | | 1.427 | | | |
| **Panic in People * Over-Burden Stream of Comm.** | | | | | | | | | 1.427 | | |
| **SU1** | | | | 0.914 | | | | | | | |
| **SU2** | | | | 0.927 | | | | | | | |

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| | |
|---|---|
| **SU3** | 0.951 |
| **SU4** | 0.854 |
| **VI1** | 0.836 |
| **VI2** | 0.855 |
| **VI3** | 0.854 |
| **VI4** | 0.762 |

**Table 1:** Outer Loading

Table 1 has the purpose to reflect outer-loadings in order to legitimize each and every variable through its reliability. Although the outer-loading of every variable must be 0.708 or above (Hair Jr et al., 2016) however, in this study all the variables and their elements have higher values of outer loadings. In fact, the least value reflected through the table is 0.753 and therefore it is appropriate to declare that all the variables and elements are fit enough for further descriptive and inferential testing Table 2 has the purpose to reflect predictive accuracy i.e. variance caused by the independent variable (Benitez, Henseler, Castillo & Schuberth, 2020). The method used to analyze relationships is the same which is used in ordinary least squares (Andreev, Heart, Moaz & Pliskin, 2009).

R Square

| | R Square | R Square Adjusted |
|---|---|---|
| **Impulsive Buying Antibiotics** | 0.660 | 0.645 |
| **Impulsive Buying Face-Masks** | 0.783 | 0.758 |
| **Impulsive Buying Supplements** | 0.716 | 0.702 |
| **Impulsive Buying Vitamins** | 0.655 | 0.639 |
| **Panic in People** | 0.628 | 0.616 |

**Table 2:** Predictive Accuracy (Quality Criteria)

Threrefore the minimum value for highlighting variance through a change in the independent variable is 0.26 however 0.75 or above are the value used for excessive relationships (Cheah, Memon, Chuah, Ting & Ramayah, 2018). Thus, in the light of the parameters indicated by Andreev *et al* (2009) and Cheah *et al* (2018) the impact caused by IV over mediator and DVs are moderate in nature.

Construct Reliability and Validity

| | Cronbach's Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|---|
| **COVID-19 outbreak** | 0.988 | 0.989 | 0.991 | 0.965 |
| **Impulsive Buying Antibiotics** | 0.782 | 0.787 | 0.873 | 0.696 |
| **Impulsive Buying Face-Masks** | 0.963 | 0.966 | 0.972 | 0.872 |
| **Impulsive Buying Supplements** | 0.932 | 0.941 | 0.952 | 0.832 |
| **Impulsive Buying Vitamins** | 0.849 | 0.868 | 0.897 | 0.685 |
| **Moderating Effect 1 (FM)** | 1.000 | 1.000 | 1.000 | 1.000 |
| **Moderating Effect 2 (ANT)** | 1.000 | 1.000 | 1.000 | 1.000 |
| **Moderating Effect 3 (VIT)** | 1.000 | 1.000 | 1.000 | 1.000 |
| **Moderating Effect 4 (SUP)** | 1.000 | 1.000 | 1.000 | 1.000 |
| **Over-Burden Stream of Comm.** | 0.913 | 0.923 | 0.945 | 0.852 |
| **Panic in People** | 0.757 | 0.758 | 0.845 | 0.577 |

**Table 3:** Construct Reliability and Convergent Validity

Table 3 has the purpose to reflect construct reliability and convergent validity. For indicating construct reliability models take the reference of Cronbach's Alpha (α), Goldstein rho, and Composite Reliability (Sijtsma, 2009 a&b). Similarly for convergent validity, three criteria i.e. outer loadings, composite reliability, and average variance extracted (AVE) are important to report. However, composite reliability along with AVE are the main elements to highlight convergent validity (Afthanorhan, 2013). Though AVE alone is sufficient to highlight convergent validity if its value is 0.5 or above (Ab Hamid, Sami & Sidek, 2017). On the other hand reliability parameters are also following required criteria as CR>rho>α (Sijtsma, 2009 a&b). Moreover, the value for each criterion is also touching or exceeds the benchmark of 0.7 (Ringle, Da Silva & Bido, 2015 & Sijtsma, 2009 a&b). Thus the table is sufficiently reflecting construct reliability & convergent validity.

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| | COVID-19 outbreak | Impulsive Buying Antibiotics | Impulsive Buying F-M | I-Buying Supp. | Impulsive Buying Vitamins | Mod Effect 1 (FM) | Mod Effect 2 (ANT) | Mod Effect 3 (VIT) | Mod Effect 4 (SUP) | Over-Burden Stream of Comm. |
|---|---|---|---|---|---|---|---|---|---|---|
| COVID-19 outbreak | | | | | | | | | | |
| Impulsive Buying Antibiotics | 0.177 | | | | | | | | | |
| Impulsive Buying Face-Masks | 0.109 | 0.348 | | | | | | | | |
| Impulsive Buying Supplements | 0.131 | 0.302 | 0.670 | | | | | | | |
| Impulsive Buying Vitamins | 0.232 | 0.524 | 0.354 | 0.312 | | | | | | |
| Moderating Effect 1 (FM) | 0.087 | 0.275 | 0.146 | 0.169 | 0.190 | | | | | |
| Moderating Effect 2 (ANT) | 0.087 | 0.275 | 0.146 | 0.169 | 0.190 | 0.965 | | | | |
| Moderating Effect 3 (VIT) | 0.087 | 0.275 | 0.146 | 0.169 | 0.190 | 0.965 | 0.943 | | | |
| Moderating Effect 4 (SUP) | 0.087 | 0.275 | 0.146 | 0.169 | 0.190 | 0.965 | 0.943 | 0.977 | | |

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| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Over-Burden Stream of Comm.** | 0.191 | 0.387 | 0.436 | 0.341 | 0.417 | 0.338 | 0.338 | 0.338 | 0.338 | |
| **Panic in People** | 0.193 | 0.340 | 0.236 | 0.202 | 0.197 | 0.219 | 0.219 | 0.219 | 0.219 | 0.277 |

**Table 4:** Discriminant Validity (HTMT)

Table 4 has the purpose to indicate discriminant validity and it is used to show differences in variables used not only with respect to the understanding of respondents but also with respect to theoretical dimensions. However, the Heterotrait-Monotrait Ratio is perceived as the best measure to highlight discriminant validity (Henseler, Ringle & Sarstedt, 2015). HTMT uses correlation among the variables to indicate discriminant validity and the maximum value allowed to show correlation is 0.85 (Hair Jr, Sarstedt, Ringle & Gudergan, 2017). Hence in the light of these measures the research confirms the criterion of HTMT as there is no junction of variables that yields more than 0.85 value or above, except for moderators. The moderating effect is showing higher values than 0.85, not all the values are lesser than 1.000, thus in the light of Henseler Hubona and Ray, (2016), HTMT is acceptable not only for variables but also for moderation.

Path Coefficients

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (\|O/STDEV\|) | P Values |
|---|---|---|---|---|---|
| **COVID-19 outbreak -> Panic in People** | 0.167 | 0.170 | 0.055 | 3.033 | **0.003** |
| **Moderating Effect 1 (FM) -> Impulsive Buying Face-Masks** | 0.003 | 0.007 | 0.067 | 0.052 | **0.959** |
| **Moderating Effect 2 (ANT) -> Impulsive Buying Antibiotics** | -0.088 | -0.085 | 0.036 | 2.423 | **0.016** |
| **Moderating Effect 3 (VIT) -> Impulsive Buying Vitamins** | -0.044 | -0.040 | 0.058 | 0.763 | **0.446** |
| **Moderating Effect 4 (SUP) -> Impulsive Buying Supplements** | -0.037 | -0.033 | 0.062 | 0.597 | **0.551** |
| **Over-Burden Stream of Comm. -> Impulsive Buying Antibiotics** | 0.248 | 0.247 | 0.048 | 5.211 | **0.000** |
| **Over-Burden Stream of Comm. -> Impulsive Buying Face-Masks** | 0.386 | 0.387 | 0.050 | 7.749 | **0.000** |
| **Over-Burden Stream of Comm. -> Impulsive Buying Supplements** | 0.282 | 0.280 | 0.051 | 5.513 | **0.000** |
| **Over-Burden Stream of Comm. -> Impulsive Buying** | 0.342 | 0.341 | 0.052 | 6.619 | **0.000** |

| Vitamins | | | | | |
|---|---|---|---|---|---|
| Panic in People -> Impulsive Buying Antibiotics | 0.182 | 0.183 | 0.054 | 3.354 | **0.001** |
| Panic in People -> Impulsive Buying Face-Masks | 0.121 | 0.121 | 0.053 | 2.267 | **0.024** |
| Panic in People -> Impulsive Buying Supplements | 0.097 | 0.098 | 0.058 | 1.678 | **0.094** |
| Panic in People -> Impulsive Buying Vitamins | 0.076 | 0.075 | 0.053 | 1.428 | **0.154** |

**Table 5:** Path-Coefficient (Total Effects)

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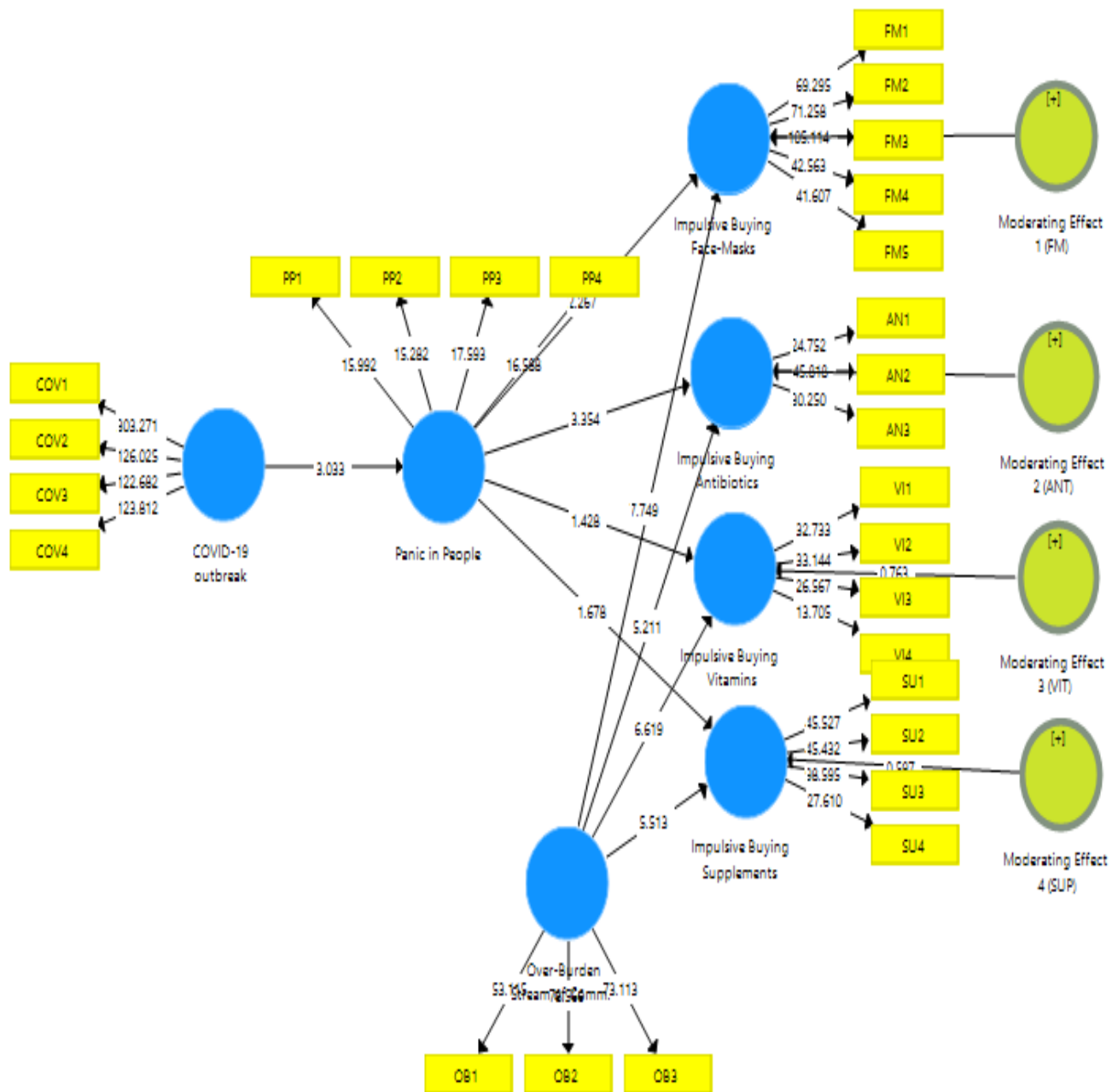Muhammad Faisal Sultan, Dr. Muhammad Asim & Muhammad Furqan Saleem

**Figure 2:** t-values and Path-Coefficient (Total Effects)

Table 5 has been placed with the purpose to indicate path-coefficient (total effect) to indicate the relationship among variables through inferential statistics.

Similar has been indicated through figure 2 and there are mainly two criteria for indicating a relationship among variables i.e. t-values and p-values. The criterion of t-values has been highlighted by (Duarte & Amaro, 2018), and the criterion for p-values has been indicated by (Hair, Ringle & Sarstedt, 2011). However, there is a need to fulfill both of the criteria, Hair et al (2019) that a minimum of 1.97 of t-value is required and a maximum of 0.05 of p-value is applicable as indicated by (Duarte & Amaro, 2018). Therefore, in the light of these parameters, it is legitimate to believe that COVID-19 has a definite and positive relationship with an increase in panic. Although panic does not have the same impact on the impulsive buying of all forms of emergency products like supplements and vitamins. Similarly, the moderation of overburdened communication does not have any impact on most of the emergency products, except on antibiotics on which there is a negative impact

Specific Indirect Effects

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|---|---|---|---|---|---|
| **COVID-19 outbreak -> Panic in People -> Impulsive Buying Antibiotics** | 0.031 | 0.031 | 0.014 | 2.186 | 0.029 |
| **COVID-19 outbreak -> Panic in People -> Impulsive Buying Face-Masks** | 0.020 | 0.020 | 0.011 | 1.847 | 0.065 |
| **COVID-19 outbreak -> Panic in People -> Impulsive Buying Supplements** | 0.016 | 0.016 | 0.011 | 1.516 | 0.130 |
| **COVID-19 outbreak -> Panic in People -> Impulsive Buying Vitamins** | 0.013 | 0.013 | 0.011 | 1.202 | 0.230 |

**Table 6:** Specific Indirect Effect (Mediation)

Table 6 has the purpose to indicate mediation (specific indirect effect), through p-values and t-values, and according to these values mediation of panic in people has valid mediation only in the purchase of antibiotics. Thus it means panic due to the spread of COVID-19 in increasing impulsive buying of antibiotics but the overburdened stream of communication resulted in the decline of the impact. Although, mediation of panic is not valid for the impulsive buying of most of the emergency products, thus legitimate for impulsive buying of antibiotics only.

## Conclusion and Discussion

The findings of the study are consistent with Harahap et al. (2021) and Xiao et al. (2020), as results indicating the outbreak of COVID-19 resulted in fostering of fear in inhabitants of Karachi. Hence also aligned with Xiao et al. (2020) as it causes a shortage of emergency and ESSENTIAL SAFETY products due to an increase of uncertainty day after another which increases concern towards safety due to a surge in COVID-19 cases (Xiang *et al.,* 2020). Thus the selection of elements to check impulsive buying behavior associated with safety and emergency products like face masks (Xiao et *al., 2020*), antibiotics, vitamins, and supplements (Roundhal, 2021), was found to be potent. Moreover, moderating role of over-burdened communication may reduce the lacking of studies on impulsive buying behavior which could not relate studies to intra-individual fluctuations (Xiao *et al.,* 2020). Hence, outcomes of this study were found to be consistent with Xiao *et al.* (2020) as over-burdened communication has a significant impact on the impulsive purchase of all forms of emergency and essential safety products.

However, the moderation of over-burdened communication is only found to be potent with impulsive buying of antibiotics only. Hence legitimate to believe moderation could not distract people and does not result in a negative evaluation of emergency products. Thus, the study has different results as of China due to no moderation found in case of impulsive buying of face-masks, vitamins, and supplements. However, the presence of moderation in the case of antibiotics partially proves the point mentioned by Xiao *et al.* (2020) with reference to Karachi city. That means negative evaluation of antibiotics may decrease in impulsive buying. Last but not least this study also proves that the outbreak of COVID-19 resulted in impulsive buying of essential safety and emergency items as indicated by Harahap et al (2021). Similarly, the findings of the study also find consistent with the findings of Harahap et al (2021) that the outbreak of virus itself resulting in impulsive buying as use of mediation i.e. panic is not producing a significant impact on impulsive purchase. Thus potent to believe that panic buying emotions and feelings affect the impulsive purchase Harahap et al (2021).

Therefore, legitimate to link impulsive buying instead of panic buying with essential safety and emergency goods like face-masks, antibiotics, supplements, and vitamins.

## Managerial Implications

There were few studies that explore impulsive buying with reference to the fear appeal. Fear appeals mean "Fear appeal means appealing to the fearful understanding of a person about something to instigate fearful emotions so that they take protective measures (Naeem, 2021, p. 378-379). However, in contrast of Naeem (2021), this study uses epistemology to build knowledge through indications made by Harahap et al. (2021); Xiao et al. *(*2020), and Roundhal, (2021). Thus, the model evaluates inference of impulsive buying with reference to emergency products through online retailing. This study is useful for online retailers in other cities of Pakistan and other developing countries like India etc and the implications might be beneficial in understanding the response behavior of customers during prevailing waves of COVID-19.

## Area for Future Research

The study has been done with the reference of inhabitants from Karachi and therefore the model can also be tested in other major cities of the country. Similarly, the model can further be tested with the reference of managers of organized retail outlets to verify the opinion achieved

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through inhabitants. Last but not least the study might also be conducted through using moderation of government interventions

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