Measuring the Risk Level of Retail Sector for COVID-19 Infection

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Abstract
The pandemic outbreak costs millions of people die because of the spread of the disease. According to the CDC, death rates are four times greater in 30-to 39-year-olds than in 18-to 29-year-olds, and 600 times higher in those 85 years and older. The retail sector is classified as convenience stores, clothing stores, and department stores. Based on the gathered data, the majority of the respondents of this research study are below 21 years old and at 30 years old retail workers (e.g. staff, vendors, and employers). The researchers would like to discuss and measure the risk levels of each employee of different ages and gender towards COVID-19 infection. This study does not only measure risk levels for certain age groups and gender but other factors as well, such as, their behavior, health, exposure, and social policy which are found originally from Resilience Innovation Knowledge Academy (RIKA) India. Online survey questionnaires via Google Forms were distributed to the said respondents. Pearson correlation in line with Hopkins, 2000 correlation coefficient value was utilized and to ascertain the level of correlation of sub-factors to incorporate the significance of these sub-factors towards COVID-19 infection. Results found that factors such as the use of face masks, frequency of handwashing, sanitizing before touching the face, following social distancing, anxiety about the situation, and trust in government measures significantly contribute to COVID-19 infection. Recommendations, possible solutions, and prevention are discussed in this paper.

Keywords
OSHA Standards, Retail Workers, Retail Sector, COVID-19, Risk

1. Introduction

1.1. Background of the Study

Enormous research papers have been constantly emerging for the past months since it is known as a very severe pandemic since the last decade especially how the Coronavirus affected the health and safety of all retail workers. The retail industry is often seen as an economic heavyweight since it employs about 1 in every 12 people in OECD (Organization for Economic Co-operation and Development) nations and contributes nearly 5% of GDP. (Sulaiman, M. et al., 2020). Nowadays, such employees from retail industries are exposed to various people, specifically co-workers or co-employees, and as well as in the outdoor environment which depicts higher risks of stimulating COVID-19 disease which is contagious especially when exposed to a higher number of people. Although reducing transmission was already implemented such as social distancing, travel restrictions, stay-at-home orders, and school and non-essential business closures. (Lan F, Suharlim C, Kales SN, et al., 2020). However, government officials of different countries have been opening limited opportunities to retail industries. As a result, retail owners then took advantage of this situation which called for the attention of retail workers to travel away from their homes to their designated destination where the warehouse, office, and shops are located. Regular workers were first alarmed by the COVID-19 pandemic since the risk of infection from one person to another was extremely high, and according to government rules, individuals were asked to remain inside to break the Novel Coronavirus chain. (Kalogiannidis., 2020).

Additionally, in most companies, the 'Health and Safety Section,' a subset of human resource management, is in charge of ensuring the health and safety of all workers. Employees are productive assets, and their health and safety are

critical to the success of any company. Human resource management has a difficulty in ensuring that all workers are healthy enough to do their jobs successfully and efficiently. (Sulaiman, M. et al., 2020). The basic cause of transmission of the COVID-19 virus is it mostly spreads from person to person among people nearby (within about 6 feet, or 2 meters). When a person with the virus coughs, sneezes, breathes, sings, or speaks, respiratory droplets are produced. These droplets may be inhaled or fall in someone's mouth, nose, or eyes. It may also spread if a person comes into contact with a virus-infected surface or item and then touches his or her lips, nose, or eyes but has very low risk. (Mayo Clinic Staff, 2021). These are commonly seen and are highly effective when exposed to the public with crowded spaces. When not addressed properly, more deaths and active cases would increase each day and the coming months leading to bankruptcy from retail shops due to unemployment disruptions. The retail sector is considered to be labor-intensive which requires human resource management and dedicated employees to have a successful business. (Sulaiman, M. et al., 2020). Without them, not only retail sectors and the economy will be affected but as well as the contingency of increasing the severity of this pandemic and the loss of humanity.

1.2. Review of Related Literature

Everyone is at risk to be infected by the COVID-19 virus. Since the beginning of the pandemic, people are expected and asked to look after themselves and comply with the necessary health precautions their respective governments implemented as this will help in lessening their risk of being infected. Hence, it'll help the country to control the escalating quantity of cases, both active and not. Aside from following the health protocols, there are certain factors as well that contribute to the risk of an individual being infected by the COVID-19 virus. Based on the assessment tool introduced by the Resilience Innovation Knowledge Academy (RIKA), these factors can be classified into four groups: health risk, behavior risk, exposure risk, and social policy risk, and each has sub-factors (COVID-19 Risk Assessment Tool: Dual Application of Risk Communication and Risk Governance, 2021).

According to the World Health Organization (2021), people of all ages—from young to older people, can be infected by the COVID-19 virus. However, as people get older, their risk to be infected increases as well because their immune system deteriorates and tends to obtain severe illnesses—the risk increases for people who're in their 50s - 80s, and logically, individuals who are in the age of 85 and beyond are at higher risk. People with pre-existing medical conditions such as asthma, hypertension, diabetes, and cardiovascular diseases are more vulnerable to be critically ill with the virus (Increased Risk of Severe Illness from COVID-19, 2021). According to the World Health Organization (2020), smokers have a 40 – 50% higher risk of acquiring critical disease and death from COVID-19. Furthermore, in a study conducted by Griffith et al. (2020), they've found that psychosocial and behavioral factors influence as well the severity of risk for both male and female—male has a high potential of contracting the virus compared to female because they tend to engage in more high-risk behaviors such as drinking of alcohol and smoking. Likewise, men have lower rates in practicing handwashing, wearing masks, social distancing and proactively obtaining medical aid (Griffith et al, 2020). In an article posted by WaterAid (2020), a non-governmental organization that prioritized water, sanitation, and hygiene, proper and thorough handwashing, as well as good hygiene, is one of the best practices to effectively prevent and control the spreading of COVID-19 as it is the first line of defense of individuals against the virus. Hence, WHO recommends every individual further protect themselves against the virus by frequently washing their hands and practicing good hygiene and lifestyle.

It was a challenge for the researchers to find the right review of related literature with the minimum amount of research projects regarding retail workers under the retail sector and their close interaction with customers. Although a research study by Lan and Suharlim, et al. (2020), mentioned a few sub-factors under the behavioral and exposure risk. Behavioral risks such as social distancing and anxiety. Exposure risks such as their occupation, in this case, an employee in a grocery retail store considered as an essential worker, and their travel history in the last 14 days. The travel history found in this paper only limits essential workers to being in close contact with individuals who have a positive SARS-CoV-2 result in the last 14 days which then has a positive effect on mental health, particularly depression. Workers with at least moderate depression had a greater percentage (63%) of potential SARS-CoV-2 exposure in the previous 14 days (P=0.028) than those without depression (21%). The capacity to adopt social distancing at work was also shown to be inversely linked to employees' anxiety and depression levels. Focusing on anxiety as a sub-factor, findings found that there were only 24% of workers are reported to have minimal anxiety towards the situation of the COVID-19 pandemic. And have justified that age, gender, smoking, potential SARS-CoV-2 exposure, and work position, had no statistically significant variations in anxiety. There were only 46% of employees with anxiety reported being able to assert social distancing regularly at work, while 76% of those without anxiety

reported being able to do so. A p-value of 0.009 indicates that the findings are statistically significant. 20% is the infection rate of retail workers at a grocery retail store and with that, SARS-CoV-2 RT-PCR test findings were considerably greater than the neighboring areas. Employees who had direct contact with customers were almost five times more likely to have a positive SARS-CoV-2 RT-PCR test result. COVID-19 infections among healthcare professionals had previously been linked to population or community exposure rather than work-related exposure, according to previous research. (Reusken CB, Buiting A, Bleeker-Rovers C, et al., 2020), (Lan FY, Filler R, Mathew S, et al, 2020). The exposure to consumers depends on the type of occupation of the essential workers, specifically grocery retail workers, greater than 90% of these workers with a positive test result worked in a position where they had substantial direct consumer contact. Employees in managerial roles, who were exposed to both clients and coworkers, had a substantially higher risk of SARS-CoV-2 infection. (Lan and Suharlim, et al., 2020).

When the number of people exceeds the allotted space, it leads to negative health consequences such as infectious diseases. Crowding increases the intensity of exposure in terms of risk transmission (von Seidlein et al., 2021). Heavily populated areas are largely at risk in terms of outbreaks. People staying at home can be measured by activities in residential buildings, whereas activities outside of residential buildings are more likely to increase exposure risk by increasing the likelihood of contact with those outside of the family or household unit, depending on the specific nature of those activities (Hong et al., 2021). Furthermore, their data shows that after the stay-at-home order, different behavioral patterns emerged across neighborhoods and that these differences in exposure density had a direct and significant impact on the probability of infection. With this, it is evident that the effectiveness of lockdown and the compliance of the people in the locality contribute largely in the terms of COVID-19 exposure.

1.3. Gap of Missing Information

When the World Health Organization (WHO) declared COVID-19 as a worldwide pandemic on March 11, 2020, every country subsequently announced lockdown and implemented interventions such as travel bans, social distancing, closure of schools, and non-essential businesses to control this spreading. The lockdowns have greatly influenced different sectors in different aspects (e.g. manufacturing businesses decreased their sales and many became jobless etc.). While most residents in the community benefit from the following risk-mitigating policies, some essential workers, frontliners, and retail workers continue to face exposure risk of COVID-19 infection due to their kind of work (Sulaiman et al., 2020). In a study conducted by Lan et al. (2020), they've found that although there's an emerging quantity of studies concerning the risk of workers to COVID-19 infection since last year, these pioneering studies and existing studies have largely focused on health care workers (HCWs) and few studies consider the retail sector—most studies emphasize the pandemic's effect to the economic standing of retail sectors as well as the job assurance than the risk in the health of the retail workers.

1.4. Objectives

The purpose of this study is to answer the question of which among these factors are positively significant and has a higher risk level to the possibility of COVID-19 infection for retail workers under the retail sector and to measure the risk levels of retail workers for COVID-19 infection. Each of these factors will be thoroughly explained and assessed with the help of the review of related literature which contains various research studies that depict the significance of these factors toward COVID-19 infection, specifically under the retail sector. Implementing and conducting a risk assessment for risk levels under the influence of COVID-19 infection for retail workers are also the main objectives of this paper. Mainly the factors that are being used in this study are found in the Resilience Innovation Knowledge Academy (RIKA) in India. More details will be explained under the methodology section. According to RIKA, risks can be divided into three categories which are the health risk, behavioral risk, social, and exposure risk. A short overview of this would be, under health risks, sub-factors would include the gender of an individual, its age, their common comorbidities, and the like. The researchers would like to look into specific categories and their sub-factors that highly affect retail workers from COVID-19 infection and their certain risk levels towards the possibility of getting infected by the virus. Statistical tools were as well used such as Pearson correlation between variables to variables and Hopkins, 2000 correlation coefficient value. Aside from this, this paper can spread awareness to employers and employees about their legal rights and what retailers should implement and revise for the betterment of decreasing risk levels of COVID-19 infection while in contact with other humans.

1.5. Significance of the Study

OSHA's goal is to guarantee that workers work in a safe and healthy workplace by establishing and enforcing safety and health standards, as well as providing training, outreach, information, and support to all employees of different sectors. With the help of OSHA Standards and the RIKA risk assessment tool, this study will provide aid and propagate self-awareness to retail employees and employers from all the risk factors and their risk levels of COVID-19 infection that they must take into consideration especially under the retail sector. It provides recommendations such as risks to avoid and possible solutions to alleviate the risk of getting infected by the virus. For other readers, it does not only contribute to retail workers and employers but also to individuals who often leave their homes for leisure. According to research, the infection can originate from consumers and will be transmitted to retail employees or employers after direct contact. The researchers considered this study as an essential part of an individual's life due to the high numbers of active cases and deaths from the COVID-19 infection. And for future researchers, this can act as a basis for their research papers as it supplies detailed information about the risk levels of each of the variables from the three main factors obtained from RIKA. Another would be that most research papers mainly focus on health workers and do not give much attention to retail workers which makes this paper beneficial to those readers who are concerned about retail workers in the retail sector.

1.6. Scope and Limitation

The researchers used a survey questionnaire that was deployed through an online platform is google forms and was also used in conducting interviews with the respondents. The said questionnaire was based on the COVID-19 risk assessment tool developed by Resilience Innovation Knowledge Academy (RIKA) in India which includes four factors in assessing risk namely health, behavior, exposure, and social policy. The data gathered were used to conduct a qualitative research study that was limited to the retail sectors which can be classified as owner, seller, and staff. Lastly, this research study was performed in the Luzon area of the Philippines where the researchers were able to reach out mostly around the area of NCR and Region IV-A.

2. Methodology

2.1. Conceptual Framework

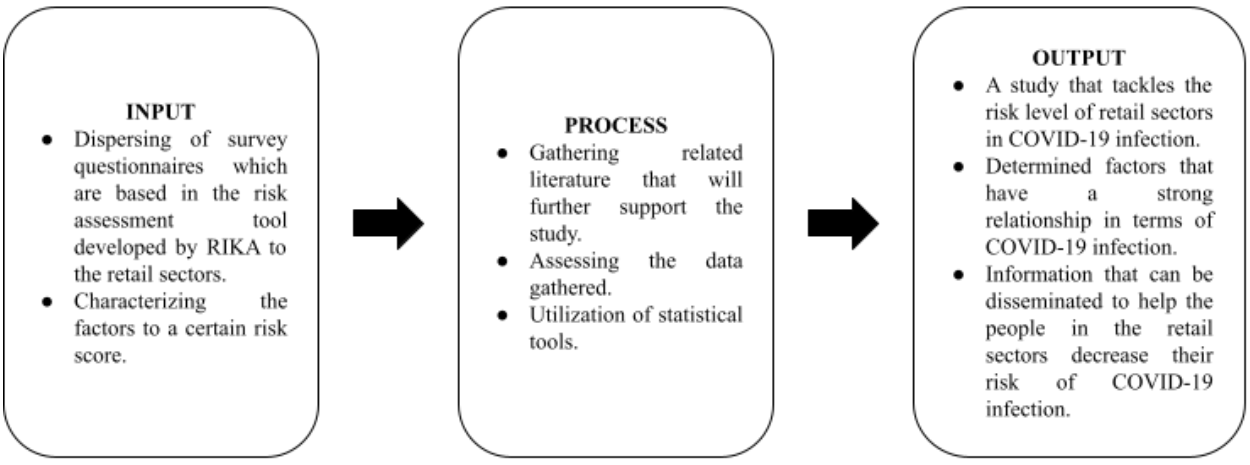

Figure 1. Conceptual Framework

Figure 1 tackles the input, the process, and the output of the conceptual framework which represents the step-by-step process of how the researchers conducted and produced the study.

2.2. Respondents of the Study

The respondents who are involved in this study are the people of the retail sectors whereas they can be identified as owners, vendors, and staff who are working and exposed in this challenging time of the pandemic. Their group provided enough sampling numbers which resulted in varied results and opinions which are useful in the study.

2.3. Statistical Treatment of Data

Descriptive Statistics were used in the demographic profiling and also to determine the frequency distribution table where the intervals are computed based on the summation of minimum and maximum scores of the data that were divided by three, which are classes that represent low, moderate, and high-risk levels of infection of the retail sectors. Risk scaling was utilized to determine the weight of the factors. The total scores obtained by each factor were interpreted with the use of the frequency distribution table. Furthermore, Pearson correlation was performed to compare the interactions between two variables included in the RIKA risk assessment, this will show what variables have a strong correlation that has an evident connection in terms of COVID-19 infection. Lastly, the results of the correlation were interpreted through the use of the correlation coefficient value by Hopkins (2000).

3. Results and Discussion

3.1. Profile of Respondents

As the medium of collecting the data for this study, an online questionnaire was distributed to different owners/sellers/staff of the retail sector in the Luzon area, particularly in National Capital Region (NCR) and Region IV-A CALABARZON. A total of 41 respondents were garnered—comprising 6 males (14.63%) and 35 females (85.37). The different demographic information was initially asked to identify who among the respondents are under each condition.

Table 1. Summary Statistics of Demographic Profile

Respondent's Profile	Category	N	%
Gender	Male	6	14.63
	Female	35	85.37
Age	21 and below	12	29.27
	21 - 30	20	48.78
	31 - 60	9	21.95
Area of Residence	NCR	21	51.22
	Region IV-A	20	48.78
Position	Owner	23	56.10
	Seller	5	12.20
	Staff	13	31.71
Years Employed	less than a year	9	21.95
	1-5 years	23	56.10
	more than 5 years	9	21.95
Employment Status	Part-time	18	43.90
	Full time	23	56.10
Monthly Income	10,000 and below	15	36.59
	10,000-20,000	10	24.39
	20,000-40,000	11	26.83
	40,000-70,000	3	7.32
	70,000-130,000	2	4.88

As seen in Table 1, the majority of the respondents are under the adolescence and young adults bracket—29.27% of the respondents or 12 in quantity are under 21 years old, 20 of the respondents are in between 21 - 30 years old, 48.78 in percentage; lastly, only 9 of the respondents are in the age bracket of 31 - 60. Furthermore, 56.10% of the

respondents are the owner of the retail store, 12.20% of them are sellers, and 31.71% are staff. 21.95% of the respondents were employed not more than a year, 56.10% were employed between 1 - 5 years, and 21.95% for more than 5 years. In addition, 56.10% of the respondents are employed full-time, and 43.90% are part-time. Lastly, the majority of the respondents have a monthly income of 10,000 and below.

3.2 Summary of Risk Factors

The following tables showed the summary of risk scores per risk factor identified. With the aid of the review of related literature, the following variables per sub-factors were ranked based on their risk level.

Table 2. Summary of Risk Score for Health Risk

Factor	Variable	Risk Scale	N	%
Age	21 and below	1	12	29.27
	21 - 30	2	20	48.78
	31 - 40	3	5	12.20
	41 - 50	4	1	2.44
	51 - 60	5	3	7.32
	60 and above	6	0	0.00
Comorbidities	none	1	34	82.93
	1	2	7	17.07
	2	3	0	0.00
	3 or more	4	0	0.00
Gender	Female	1	35	85.37
	Male	2	6	14.63
Smoking Habit	Never	1	34	85.00
	Seldom	2	3	7.50
	Occasionally	3	3	7.50
	Very frequently	4	1	2.50

Table 2 showed the summary of the risk score of the respondents in terms of health risk. For the sub-factor of age, the 21 and below bracket was measured as the lowest in risk, and as the age of the respondent increases, his/her risk of infection increases as well (Increased Risk of Severe Illness from COVID-19, 2021). As seen in the result, most of the respondents are under the 21 – 30 age bracket quantifying 48.78% on scale 2. Furthermore, according to the World Health Organization (2021), people with pre-existing medical conditions have a high risk of developing critical illness with the virus. Thus, having no comorbidity was determined to be the lowest in risk and it'll progress as to how many illnesses or diseases the respondent has. The majority of the respondents don't have an underlying illness or disease. Moreover, males are at high risk than females as they tend to practice at high-risk lifestyles such as drinking alcohol and smoking—smokers are at high risk for their cardiovascular system deteriorates as they continue this habit (Griffith et al, 2020, WHO supports people quitting tobacco to reduce their risk of severe COVID-19, 2021). Based on the results, the majority of the respondents are females and are non-smokers.

Table 3. Summary of Risk Score for Behavioral Risk

Factor	Variable	Risk Scale	N	%
Use of face mask	N95 mask	1	2	4.88
	Medical mask	2	34	82.93
	Cloth mask	3	5	12.20
	Others	4	0	0.00
Frequency of Handwashing	Very frequently	1	20	48.78
	Frequently	2	18	43.90
	Seldom	3	3	7.32
	Never	4	0	0.00
	Yes	1	27	65.85

Sanitizing before touching the face	Sometimes	2	14	34.15
	No	3	0	0.00
Following social distancing	Yes	1	29	70.73
	Sometimes	2	11	26.83
	No	3	1	2.44
Anxiety about situation	Not very	1	2	4.88
	A little bit	2	22	53.66
	Very much	3	17	41.46
Trust in Government measures	Yes	1	2	4.88
	Maybe	2	11	26.83
	No	3	28	68.29

Table 3 showed the summary of the risk score of the respondents in terms of behavioral risk. According to the Centers for Disease Control and Prevention (2021), the N95 mask is the most effective in protecting people against COVID-19. Hence, people using this type of mask have a low risk of infection. Based on the results, 82.93% of the respondents use a medical mask which is still considered moderate in risk. Frequency of handwashing, sanitizing before touching face, and following social distancing are the primary health protocols that must be obeyed and practiced because this lessens the risk of infection. The lesser the people practice these protocols, the higher the risk they'll obtain the virus. Seen in the results that most of the respondents are at low risk since they frequently follow these protocols—for handwashing, 48.78% of the respondents answered very frequently, 65.85% of the respondents answered yes to sanitizing, 70.73% follow the social distancing protocol. Next, the anxiety of the respondents towards the pandemic is very obvious as the majority of them answered a little bit (53.66%) and very much (41.46%). The more anxious they are about the situation, the more they'll be at high risk. Lastly, the trust of the people in the government's pandemic response influences as well their risk of infection because this could cause social and economic problems among the two groups. Based on the results, 68.29% of the respondents are at high risk because they do not trust the current administration.

Table 4. Summary of Risk Score for Exposure Risk

Factor	Variable	Risk Scale	N	%
Residential type	Detached home	1	33	80.49
	Condo	2	2	4.88
	Apartment	3	6	14.63
	Informal settlement	4	0	0.00
Occupation	Off-site worker	1	31	75.61
	Essential worker	2	8	19.51
	Frontliner	3	2	4.88
	Medical personnel	4	0	0.00
Travel history	No history	1	23	56.10
	With travel history	2	8	19.51
	Attended mass gathering	3	4	9.76
	Travel history & mass gathering	4	6	14.63

Table 4 showed the summary of the risk score of the respondents in terms of exposure risk. Physical distancing was proven to be effective in controlling the rapid spreading of a virus. Hence, the residential type of the respondents was considered in the assessment tool, wherein people in the informal settlement are at high risk of infection because they are usually crowded (Hong et al., 2021). Based on the result, the majority of the respondents are at low risk since 80.49% of them reside in a single-detached home. Furthermore, the majority of the retail sector respondents are off-site workers, some are essential workers and frontliner. Since 75.61% of the respondents are off-site workers—the majority are owners and staff of the retail business, they are at low risk of infection. Lastly, although some of the respondents had a travel history and attended mass gatherings for the past 2 weeks, still, 56.10% of them are at low risk.

Table 5. Summary of Risk Score for Social Policy Risk

Factor	Variable	Risk Scale	N	%
Effectiveness of lockdown	most are following	1	13	31.71
	some are following	2	21	51.22
	very few are following	3	7	17.07
Community compliance	most are following	1	13	31.71
	some are following	2	19	46.34
	very few are following	3	9	21.95

Table 5 showed the summary of the risk score of the respondents in terms of social policy risk. The respondents' risk of infection increases, as the number of people in their community following the lockdown and protocols, decreases since the spreading of the virus won't be controlled. Subsequently, a possibility of contracting the respondent also (Hong et al., 2021).

3.3 Summary of Risk Level

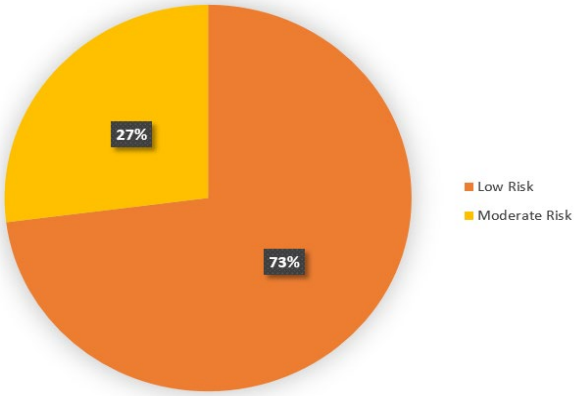

Figure 2. Summary of Risk Level

Figure 2 showed the summary of risk levels among the respondents of the retail sector wherein 73% of them are at low risk, and 27% are at moderate risk. Although the retail sector is exposed to different people in their work, the result still showed a dominance of low risk. It is only reasonable since the results based on the RIKA Assessment Tool showed that the majority of the respondents in the study are at low risk because they possess the following conditions: young adults, does not have a pre-existing medical condition, female, non-smokers, follows the health protocols, resides in a detached home, off-site workers, and their community complies in the general protocols.

3.4 Results of Correlation

Pearson correlation was utilized to the sub-factors to further understand the results and know what among these sub-factors correlates. The results were interpreted through the use of the correlation coefficient value by Hopkins (2000). Based on the results as shown in Table 6, age and sanitizing have a positive moderate correlation value of 0.460—this entails that as the age of the respondents increases, their risk of infection increases in terms of sanitizing because they are less frequent to practice this behavior. Total risk score and age has a positive moderate correlation value of 0.464 which means that as an individual age, their total risk increases because their body's capability to fight off the virus deteriorates as well as their behavior and social beliefs lessens (Coronavirus disease (COVID-19) advice for the public: Mythbusters, 2021). In line with this are the smokers, as they continue this habit, their total risk of getting infected escalates also because their cardiovascular system—which is vital in protecting themselves against the virus would deteriorate; as seen in the result, it has a 0.338 moderate correlation (WHO supports people quitting tobacco to reduce their risk of severe COVID-19, 2021). Moreover, the more some fewer people follow social distancing, the more it influences the anxiety of the people—the result showed a 0.392 moderate correlation for these sub-factors and according to Lan and Suharlim, et al. (2020) it mentioned that there are lower risks of being anxious when people often practice social distancing (p=0.009). As World Health Organization (2020) stated, frequent hand washing and

sanitizing are the first line of defense of every individual against COVID-19, that's why it both resulted in a positive high correlation against the total risk score, 0.582 and 0.540, respectively. Furthermore, the total risk score and government trust have a moderate correlation value of 0.333. As mentioned by von Seidlein et al., (2021) as the residential type gets crowded, the higher the risk of the people acquiring the virus. Hence, the result of 0.375 moderate correlation for total risk score and residential type is reasonable. Moreover, the more frequently an individual visits places and attend mass gatherings for the last few days, the higher they are exposed to infection—a positive moderate correlation of 0.408. Lockdown and compliance also resulted in a moderate correlation of 0.463—this implies that as the people fell short of complying with health protocols, the less effective the lockdown is. In connection to that, moderate correlation is evident in the total risk score of an individual and the level of compliance of his community; this further implies that the fewer people in the community are complying with the protocols, the higher risk it can infect a person. Likewise, lockdown and total risk score resulted in a high correlation with a value of 0.586—this indicates that the fewer people following the protocols during a lockdown and the less effective it is, the higher the chance a person or a fraction in the community could acquire the virus (Hong et al., 2021).

Table 6. Summary of Correlation Result

Variables	Pearson Correlation	P-Value	Remarks
Age and Comorbidities	0.019	0.906	Negligible Correlation
Age and Face Mask	-0.010	0.950	Negligible Correlation
Comorbidities and Hand Washing	0.094	0.560	Negligible Correlation
Age and Sanitizing	0.460	0.002	Moderate Correlation
Comorbidities and Sanitizing	-0.053	0.740	Negligible Correlation
Age and Anxiety	-0.018	0.910	Negligible Correlation
Comorbidities and Anxiety	0.162	0.310	Negligible Correlation
Total Risk Score and Age	0.464	0.002	Moderate Correlation
Total Risk Score and Comorbidities	0.152	0.343	Negligible Correlation
Total Risk Score and Smoking Habit	0.338	0.031	Moderate Correlation
Social distancing and Anxiety	0.392	0.011	Moderate Correlation
Hand Washing and Anxiety	-0.053	0.741	Negligible Correlation
Sanitizing to Anxiety	-0.101	0.532	Negligible Correlation
Face Mask and Government Trust	0.071	0.660	Negligible Correlation
Total Risk Score and Face Mask	0.209	0.191	Negligible Correlation
Total Risk Score and Hand Washing	0.582	0.000	High Correlation
Total Risk Score and Sanitizing	0.54	0.000	High Correlation
Anxiety and Government Trust	-0.112	0.486	Negligible Correlation
Total Risk Score and Anxiety	-0.062	0.699	Negligible Correlation
Total Risk Score and Government Trust	0.333	0.034	Moderate Correlation
Total Risk Score and Residential	0.375	0.016	Moderate Correlation
Lockdown and Compliance	0.463	0.002	Moderate Correlation
Total Risk Score and Travel History	0.408	0.008	Moderate Correlation
Total Risk Score and Lockdown	0.586	0.000	High Correlation
Total Risk Score and Compliance	0.464	0.000	Moderate Correlation

4. Conclusion

With the help of related literature, the researchers were able to validate factors and sub-factors concerning COVID-19 infection to essential retail workers or retail sector employees and employers in general. The most prevailing research papers that have been published for the last few years when the pandemic started are the exposure risk and mental health of healthcare workers (HCWs) which made the researchers come across workers and employers from the retail industry. After minimal ease of restrictions from the government around the world, the retail sector suddenly became one of the top trends in the ongoing pandemic. Therefore, claiming and assuming that even with fewer restrictions during the pandemic, more and more humans have higher risks of COVID-19 infection especially for the retail sector.

Despite this pandemic being a burden, Filipinos are certainly concerned about their health, especially for retail workers. For some individuals, the retail industry is their only source of income as an employee or an employer where 56.10% of respondents considered the retail industry as full-time. For that reason, Filipinos still follow rules and protocols that could prevent them from being infected by the virus as much as they can. Otherwise, they'll be unemployed and are suffering from the virus infection. Most of the respondents on health risks are seen to be on the risk scale of 1. The majority of the respondents under the behavioral risk are classified with a risk score of 1. For exposure risk all sub-factors are classified in the risk scale of 1. Therefore, a risk scale of 1 means lower risk of COVID-19 infection. However, the use of medical face masks (82.93%), is very anxious about the situation (53.66%), and do not have trust in gov't measures (68.29%) are under the risk levels of 2 and 3 respectively. This indicates that these sub-factors have a higher risk of COVID-19 infection towards retail workers and employers. With that said, these sub-factors should attentively be looked into thoroughly for future researchers as these may be a high contributor to COVID-19 infection compared to other sub-factors. Lastly, all sub-factors of the social policy risk category, are found to be on the risk scale of 2 which means there is a moderate risk of COVID-19 infection towards retail workers and employers.

As the findings validated that, 73% of the respondents are considered to be at lower risks of getting infected. While the other percentage of 27% is under moderate risk. Analyzing their age range, most of the respondents were in the lower bracket of below 21 to 30 years old which means that they have lower risks of getting infected. However, the upper bracket of the age range is considered to have moderate risk because based on the computed frequency table, the most prevailing factor for a risk level of moderate is their age difference. This means the higher an individual's age is the more they are prone to the virus infection. With 73% of the respondents having lower risks of COVID-19 infection concludes that these individual retail workers or employers are positively healthy and comply with rules and protocols. Though, with unexpected results, this isn't true for all other regions around the Philippines. Different *barangays*, cities, and provinces may have implemented their protocols to make a safe and protective environment. Others may have more crowded locations compared to the ones the respondents of this research are living in, some may not afford masks, face shields, or even alcohol to sanitize their hands, and many more. Many individuals still do not comply with community and government rules which increases the possibility of getting infected by the virus. Discipline and as well as alertness are morals that every citizen should have and without this flattening, the curve is never going to be achieved.

Next, for the results of correlation, only a few variables were significantly correlated from one another namely, age and sanitizing, total risk score and smoking habit, total risk score and government trust, total risk score and residential, lockdown and compliance, total risk score and travel history, total risk score and lockdown, total risk score and compliance with a correlation value of 0.46, 0.464, 0.338, 0.392, 0.582, 0.54, 0.333, 0.375, 0.463, 0.408, 0.586, 0.464, respectively. The findings found that total risk score and hand washing, total risk score and sanitizing and, total risk score and lockdown have the highest correlation effect with a p-value of 0, this explains those who aren't following the lockdown protocol and not frequently sanitizing and washing their hands are at high risk of COVID-19 infection. According to WHO, the spread of the COVID-19 virus begins when touching their eyes, nose, or mouth without washing their hands, people may become affected by the virus. Hence, with the given results, it is obvious that in the prevention of getting infected by the COVID-19 virus, citizens, not only essential workers, shall always sanitize, wash their hands, and comply with lockdown policies.

More than ever before, retailers need the assistance of their workers during this crisis. That is because retailers are often responsible for the health of all employees since as mentioned earlier, the retail industry is labor-intensive. Successful businesses in the retail industry only prevail when given proper care to employees is implied. And with that, dedication and motivation from employees undoubtedly will offer great quality services to consumers. (Sulaiman, 2020). Essential workers must be protected when businesses reopen, according to OSHA. Unprotected workers will undoubtedly bring the virus home, slowing efforts to limit infection spread, reduce morbidity and death, and reinforcing a balanced economy. (Michaels & Wagner, 2020).

5. Recommendation

As the world faces a new normal, government officials and organizations must take into consideration the risk of their people being infected by the virus. Hence, the implementation of strict health and safety protocols must be immediately

done. The Occupational Safety and Health Administration together with concerning agencies such as the Inter-Agency Task Force for the Management of Emerging Infectious Diseases (IATF) must come up with a strategic plan on how workers would be able to travel safely from their point of origin up to the workplace. In addition, a skeleton workforce must be continued until it is recommended as this will lessen the exposure of the employees to COVID-19. Moreover, there must be a strict implementation of wearing masks, sanitizing, hand washing, social distancing, and contract tracing in the workplace to control the virus. Lastly, it is recommended for employers to make sure that their employees are fully vaccinated and are in good health as this will be the foundation of all other aspects in their businesses and/or companies.

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