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POST-COVID-19 CONSUMERS' NEED FOR SOCIAL CONNECTIONS

How lockdown strictness influence consumers' behavioral intentions of buying in physical stores

Maria Madalena Guerra Cardoso Pinto

Dissertation presented as partial requirement for obtaining the Master's degree in Information Management

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ABSTRACT

With the unexpected outbreak of Covid-19, society started to face a time of self-isolation and social distancing to prevent the virus from spreading. And as this pandemic continues to spread, people are living differently, buying differently, and, in many ways, thinking differently. The virus is reshaping the industry in real-time, rapidly accelerating long-term underlying trends in the space of mere weeks.

The main goal of this research is to understand and try to predict what are the main changes in consumers' behavior after the pandemic social isolation era. With this study, we will take some conclusions on what the behavioral intentions of consumers are, considering two socially different scenarios of customer experience. First, we conclude that convenient shopping is an actual trend, during these pandemic times and even after, and secondly considering the consumers personality as a moderator, whether they intend to return to physical experiences (such as buying in physical stores) after this breakdown.

This research indicates if new habits formed now will endure beyond this crisis, permanently changing what consumers value; how and where to shop; and how they live and work.

Even as this crisis continues to evolve, by exploring the changes that are happening now, we can consider what consumer goods businesses should do today to prepare for what's next.

For that purpose, this study aims to identify the new trends that appeared or have grown rapidly, and if they will become a part of the new consumer behavior process pos COVID-19.

KEYWORDS

COVID-19 consumer behavior; factors consumer behavior; social distancing effects; physical buying experience, big-five personality traits.

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1. INTRODUCTION

The occidental world was just leaving the great crisis of 2008 and COVID-19 came without warning and left a massive effect on the economy worldwide, besides the pandemic effects upon human health and social engagement.

The government's policies to fight this pandemic were mainly related to social distancing, so the world witnessed a general lockdown all over the world with businesses and primary services closing, telework becoming a reality to stay and the shutdown of all unnecessary human contact.

The understanding of the effects of social distancing on consumers is essential for businesses to adapt to the new eventual trends that would appear as a consequence of the new reality and more important, what are the main behaviors and new trends that are here to stay.

During the year of 2019, before the appearance of COVID-19, according to Euromonitor 2020, *convenience* is a consumer's trend for 2020. Convenient consuming is related to the time, location and effort related to that consumption. Related to that, COVID-19 was just a trigger to accelerate this predicted digital transformation, especially the evolution of e-commerce retail, one of the most convenient ways of shopping.

Although some authors (Kim, 2020) concluded that this pandemic explains the major increase in online sales during the lockdown days, it is also true that those social distancing policies left a path of destruction in populations mental health. So the main question of this research is, after lockdown times and after social distancing is no longer required, could we register a "comeback" to physical stores as a consequence of the massive lack of social experiences?

In this study, the main objective is to understand what the effects of the strictness of lockdown were on consumers related to the intentions of returning to physical stores. Measuring the different types and levels of lockdown policies, based on the American reality, this research goal is to analyze an eventual relation between the lack of social experiences that were registered in different locations and their intentions of purchasing in physical stores in order to experience that social event.

The need for social connections is used as a mediator for this study since it can also explain the consumer intentions. Besides that, the personality trait, extraversion, appears as a moderator on this need for social connections, so that prior researches demonstrate that extrovert consumers have higher need for social connections and consequently, higher intentions of returning to retail stores.

During these uncertain times, businesses need to adapt to the new trends that appeared and are here to stay for this new pos-covid era, so with this study, we aim to identify and explore what are the main trends that are top priorities to consumers and consequently to businesses, and if they remain the same after this pandemic crisis.

2. LITERATURE REVIEW

2.1 THE SOCIOECONOMIC IMPLICATIONS OF THE CORONAVIRUS PANDEMIC

In March 2020, the world was forced to stay home because of the new COVID-19 (a disease that had its origin in Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV-2)) (Nicola et al., 2020). Having social distancing as mandatory, all borders were closed, and most public services as well as businesses were forced to close their doors to the public (Nicola, et al., 2020).

Besides all businesses' natural adaptations to this new reality, consumers are also rethinking their decision process considering the social distancing and all the requirements of the WHO. Based on a real-time survey, consumers answered about their expectations of how this is going to affect the economy and what kind of behaviors did they change (Knotek et al., 2020). Consumers believe that the effects on the economy and this crisis concerns a lot more people than the original health crisis (Knotek et al., 2020). The possibility of losing their jobs is the main fear and that influences some behaviors such as postponed planned larger purchases and change their financial planning in some way (Knotek et al., 2020). The authors concluded that related to this fear, consumers had increased their savings for effects of precaution.

The evolution of this prevision verifies the fact that all changes and factors of the consumer decision process are not that temporary, and it will origin new trends for next year. For that, it is important to acknowledge and identify the new processes that appeared and select some of them as trends for the future.

2.2 FACTORS AFFECTING CONSUMER BUYING BEHAVIOR

Consumer Buying Behavior refers to the buying behavior of the ultimate consumer. Many factors, specificities, and characteristics influence the individual in what he is and the consumer in his decision-making process, shopping habits, purchasing behavior, the brands he buys, or the retailers he goes to. A purchase decision is the result of each one of these factors. Consumers are led by their culture, subculture, social class, group

memberships, family, personality, psychological factors, etc. By identifying and understanding the factors that influence their customers, brands have the opportunity to develop a strategy, a marketing message (Unique Value Proposition), and advertising campaigns more efficient and more in line with the needs and ways of thinking of their target consumers, a real asset to better meet the needs of its customers and increase sales (Ali & Ahmad, 2016).

To identify and determine the possible trends that have an origin with this pandemic context, there is the need to understand the consumer behavior and for that, we can ask the questions (Ali, 2016), who is the market and what is the extent of their power concerning the organization; what do they buy; why do they buy; who is involved in the buying; how do they buy; when do they buy and where do they buy.

As these circumstances are special, there is the need to ask these questions to identify and evaluate the factors that changed during the consumer decision process. In this study we will focus on the “where do they buy” considering two options: online shopping and physical purchasing.

2.3 CONVENIENCE AS A TREND

Before COVID-19 was declared a pandemic, convenience was already a trend for 2020, for various tasks but mostly in purchasing and paying processes, according to Euromonitor 2020 (Westbrook & Angus, 2020). The new convenience is to do our daily activities from home. Whether it is exercise, work, shop, or play, people want to have a more convenient life with less need for travel to the gym, supermarkets, or even the office. As the pandemic has extended, these trends have started to become the norm. This has reversed the flow of shopping as well and now the store comes to our home (Sheth, 2020).

In 2019, e-commerce has increased five times faster than the regular physical retail, although, only 10% of retail sales happened online, so, this pandemic is just a trigger to accelerate an existing trend, and businesses need to update their resources to digital selling (Kim, 2020). Even for those who never adopted the concept of e-commerce, are

now willing to shop online as this has been the only safe alternative to access to groceries during the pandemic (Kim, 2020).

A previous study concludes that the two dominant motivations for online shopping are convenience and economics (Rangaswami & Gupta, 2000), but the flexibility of time, location and product variety can be important factors as well (Rohm & Swaminathan, 2004). Consumers motivated by “overall convenience” may shop online as opposed to conventional retail stores (Rohm & Swaminathan, 2004).

2.4 THE EXPERIENCE OF PHYSICAL PURCHASING

Studies showed that having longer durations of social isolation are associated with some negative and concerning mental health behaviors such as post-traumatic stress, avoidance, anger, and others (Brooks et al., 2020)

The cognitive experience of buying some product or service, that is a consequence of the main stimulus in the environment that surrounds the customer and connects them to the brands (Bustamante & Rubio, 2017a). Marketing campaigns seek mental responses that could be positive thoughts, memories, ideas, among others (Bustamante & Rubio, 2017).

The experience of purchasing goods in a physical store, and not online, stands out because of the social context that happens. The customer can connect, interact, and interpret with the other components of the service in order to engage in individual or collective processes (Bustamante & Rubio, 2017).

The environment can provoke physiological responses in the customers and then influence his/her state of comfort/discomfort (Yalch & Spangenberg, 2000) and consequently their positive intention of purchasing in that store.

The retail shopping experience is considered a motive for the physical store shopping itself, as online retailers may have difficulties on replicating the sensory effects and the trial experiences regularly available in a physical store. So, in this study, the retail

shopping experience is considered a physical store characteristic that motivates offline consumers, as opposed to online consumers (Rohm & Swaminathan, 2004).

2.5 STRICTNESS OF LOCKDOWN

To control the pandemic, physical distancing policies have been defined and with them, greater social isolation, increased anxiety, and other mental health impacts (Smith & Lim, 2020). Being a novel virus, all the effects and transmission behavior were also uncertain and for that, different strategies were implemented between similar regions, even between different US states (Carneiro et al., 2020).

For this study, the context of the US states is the most accurate reality of different lockdown strategies to provide a quantitative level and comparison of how strict each lockdown in each US state was and what were the consequences.

Considering the study developed by Carlos Carneiro (2020), each US state implemented lockdown policies sooner or later (or never) considering the day of the first covid case confirmed.

2.5.1 United States policies

During the months of March and April 2020, the first covid cases were registered in the United States of America, consequent of the spread of the virus that appeared in early December 2019 Wuhan, city of China (Nicola et al., 2020).

On March 19, 2020, California was the first state to issue an order demanding all residents to stay at home except for essential supplies and demanding also all businesses considered nonessential by the state (Arit, 2020).

After that, Governors in 42 other states took similar orders, but always with specific details for each state. Contrary to those, seven states did not issue orders demanding residents to stay at home in response to the coronavirus – Arkansas, Iowa, Nebraska, North Dakota, South Dakota, Utah and Wyoming. In those seven states, other policies were issued, such as closing some businesses that were considered nonessential and schools to in-person instruction.

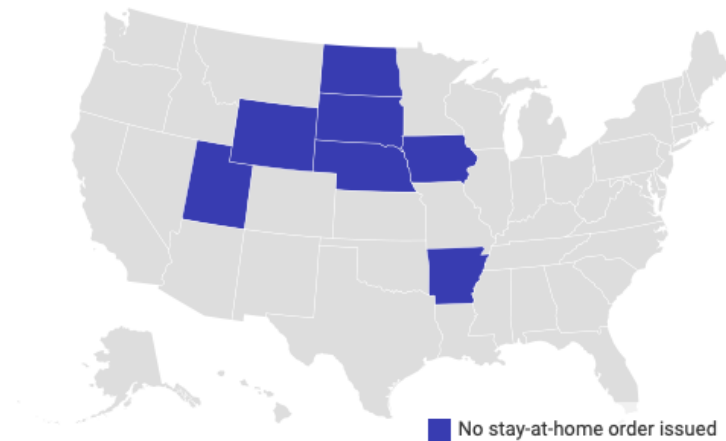


Figure 1 - States that did not issue a stay-at-home order in response to the coronavirus (COVID-19) pandemic

Only one of these seven states did not issue a stay-at-home order and did not require any businesses to close: South Dakota.

Governor Kristi Noem distinguished the importance of protecting civil liberties and based on that, has not closed businesses, or banned public gatherings. Just schools have been closed since March 16, 2020. By April 22, 2020, South Dakota had one of the largest outbreak hot spots in the United States registering 1 850 confirmed cases in a total population of 884 000 (Arit, 2020).

The other six states that did not issued stay-at-home orders to fight the COVID-19 virus, declared different policies to prevent the virus from spreading, such as, closing schools, some nonessential businesses like fitness centers, malls, salons, indoor theaters, restaurants and bars with restricted schedule or opened just for delivery and take out services, prohibited public gatherings with more than 10 people and some quarantine days for people who tested positive for coronavirus (Arit, 2020).

2.5.2 Pandemic, Lockdown and Alterations in Mental Health

During COVID-19 pandemic, mental health outcomes registered a major deterioration explained by many reasons and factors. Not only the increase of psychological distress caused by factors such as unpredictability, uncertainty, severity of diseases, social

isolation and loneliness, misinformation, and economic impacts, but also, and far less researched, the impact on positive and adaptive mental health states that were impeded during the lockdowns, such as mental well-being (van Agteren et al., 2020).

One of the drivers of well-being that explain this deterioration on mental health results, is interpersonal relationships that were kept paused during lockdown and specially during stay-at-home-orders (van Agteren et al., 2020).

As we remain socially distant to prevent the spreading of the pandemic, a serious lack of social experiences starts to worry psychologists and other mental health specialists because of the high impacts on social isolation and mental health problems (Smith & Lim, 2020). Many of us wonder if after this era, society became more anti-social and starts to struggle on socializing, or if on the opposite, we become more human and sensitive for all the live experiences we could get in our lives. This question is also asked when talking about customer and purchasing experience and what are the habits that would appear, remain, or even reappear as new ones.

H1: Consumers who went through a stricter lockdown have higher intentions to purchase in physical stores.

2.6 NEED FOR SOCIAL CONNECTIONS (AS A MEDIATOR)

In the previous chapter, we conclude that stay-at-home orders and businesses closing policies to guarantee social distancing and to prevent the virus from spreading, lead to decreased (or none) interpersonal relationships that explained the increase on warning mental health results (van Agteren et al., 2020) so it raises the question on people needing social connections or not.

The profile of store-oriented shoppers is usually motivated by offline store characteristics such as immediate possession and social contact (Rohm & Swaminathan, 2004), conversely to online shopper profile that prefers the convenient experience.

In this study, social contact motivation will be used as a mediator on the effect of the strictness of lockdown on the intentions to purchase in physical stores. So, it is considered the hypothesis:

H2: Consumers' higher need for social connections (mediator) mediates the effect of the strictness of lockdown on the intentions to purchase in physical stores.

2.7 EXTRAVERSION AS A MODERATOR

Personality is “the coherent pattern of affect, cognition, and desires (goals) as they lead to behavior” (Revelle & Wilt, 2013). In the words of the American Psychological Association (APA), personality is “individual differences in characteristic patterns of thinking, feeling, and behaving” (APA, 2017).

The most prevalent personality model «Big Five», or the five-factor model of personality and there is a valid and reliable assessment scale for measuring those factors. But to understand how to measure those factors in a person's personality, we must go back to the beginning of personality research.

These five factors do not provide completely exhaustive explanations of personality, but they are known as the «Big Five» because they encompass a large portion of personality-related terms (Jingli, 2018). The five factors are not necessarily traits in and of themselves, but factors in which many related traits and characteristics fit. A popular acronym for the Big Five is «OCEAN».

The Five Factors of personality are openness (to experience), conscientiousness, extraversion, agreeableness, and neuroticism.

Extraversion

This factor has two familiar ends of the spectrum: extraversion and introversion. It concerns where an individual draws their energy and how they interact with others. In

general, extraverts¹ draw energy or «recharge» from interacting with others, while introverts get tired from interacting with others and replenish their energy from solitude (Jingli, 2018).

Social interaction is associated with positive affect, contributing to mental well-being (van Agteren et al., 2020) and explaining why extraverts derive more pleasure than introverts from interacting with others (Srivastava et al., 2008). From that quote, for this study, extraversion will be considered as a moderator on the effect of the strictness of lockdown, such that those who are more extroverts would have higher needs for social connections and therefore, for intentions to purchase in physical stores.

Consequently, it can be postulated that:

H3: Extraversion (moderator) will moderate the effect of the strictness of lockdown on the need for social connections and the intentions to purchase in physical stores such that those who are more extroverts would have higher needs for social connections and therefore, for intentions to purchase in physical stores.

The proposed research model is presented below in Figure 3.

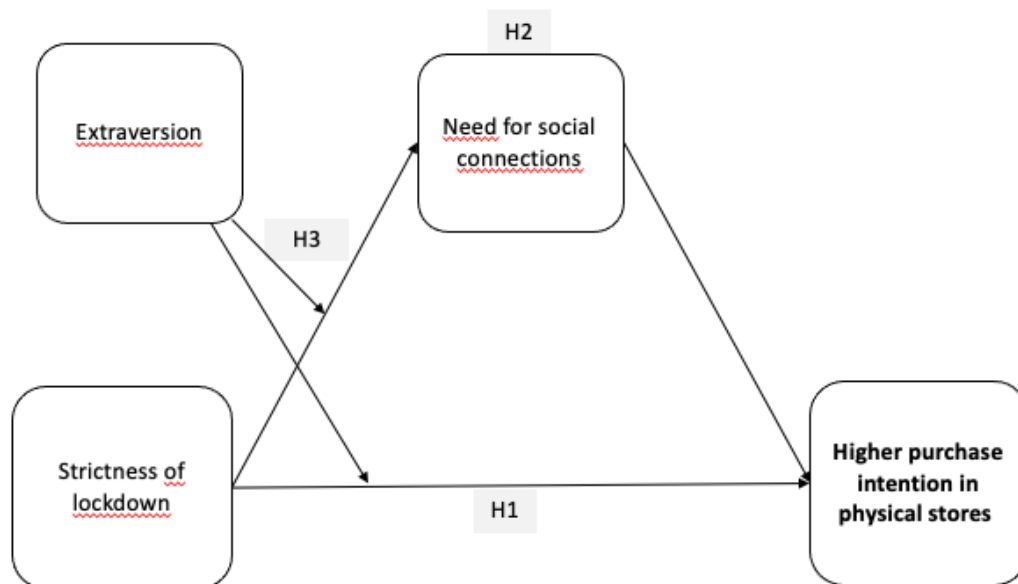


Figure 2 - Research Model

¹ In this dissertation, we use the terms “extravert” and “introvert” to refer to individuals who are relatively high or low on the dimension of extraversion.

3. STUDY DESIGN AND METHOD

Since we're trying to analyze the relationship between the variables in order to determine if there is a cause-effect relationship of the strictness of lockdown on consumers' intentions of returning to physical stores, quasi-experimental research will be conducted, as it is the most suitable research design.

The methodology applied in this study is divided in 3 steps. In a first step, the measurement instruments used in this investigation and the items related to each variable. In a second step, the characterization of the sample collected based on data collection carried out through the application of an online questionnaire is carried out. The third stage focuses on the statistic results of this research and the relation with the proposed research model.

This study aims to investigate the effect of different levels of strictness of lockdown described in our sample by the policies that were issued by their state governances (light lockdown vs. strict lockdown) on their actual shopping preferences (online shopping vs. physical stores) after COVID-19.

Additionally, consumers' need for social connections is also studied in this research as a mediator to the possible effects of people's lockdown, based on the model developed by Rohm and Swaminathan (2004). Additionally, the personality trait extraversion will be the moderator considered in this model.

Quantitative data was collected through an online survey and the IBM Statistical Package for Social Sciences (SPSS), version 28, was used to process and analyze the data collected.

The complete online questionnaire can be seen in Appendix A.

3.1 MEASUREMENT INSTRUMENTS

This research includes 4 variables, each one measured on several items. Multi-item scales were generated based upon previous measures, a review of the relevant literature, and preliminary questionnaires. The online survey contains 24 items on a 1 to 5 point Likert scale, used to measure the respondents' level of agreement with each item, with 1 being "strongly disagree" and 5 "strongly agree", including also some reverse coded items. Another 8 items were included with a scale 1- to 3- point quantitative scale to measure the respondent's perception of the strictness of their lockdown, with 1 being "with no social restrictions", 2 being "with some social restrictions only during critical days" and 3 being "super strict, with no connections during several months".

Additionally, to those items, respondents also need to fill questions related to their residency and the state where they spent most of their lockdown. Related to shopping preferences, a final question with a scale from -10 being *online shopping* and 10 *in store shopping*.

The measurement items used for the constructs were all adapted from previous scales referenced in literature, with some being slightly modified to fit more adequately in the research context. Appendix B summarizes the measurement items.

3.1.1 Extraversion

"Extraversion" items were adapted from the Big Five Inventory model (John & Srivastava, 1999). BFI is convenient because items are constructed with some context in a single phrase, and not just a list of single adjectives that usually are answered less consistently (OP P John & Srivastava, 1999).

3.1.2 Need for Social Connections

Need for social connections items were constructed from scratch, with some adaptations of measures used in literature mentioned above, such as Rohm and

Swaminathan (2004) model and the study related to customer experience in physical retail environments developed by Bustamante and Rubio (2016).

3.1.3 Purchase Intentions in Physical Stores

Items related to the purchase intentions in physical stores were based on Rohm and Swaminathan (2004) model, where Items related to the measures shopping convenience; immediate possession; social interactions and retail shopping experiences were used.

3.1.4 Strictness of Lockdown

The measurement instrument of the independent variable “Strictness of lockdown” is the survey section related to the state/region where the respondents spent most of their lockdown period, what was their personal perception about the strictness of their own lockdown in that region and what were the policies assumed by each state.

3.2 DATA COLLECTION AND PARTICIPANTS

The data was collected between the 22nd of November and the 26th of November of 2021 and 180 participants from a United States based online panel (Amazon Mechanical Turk) were recruited for financial compensation. 90 responses were collected at first to analyze the distribution of participants' location state. Just 1 respondent was from one of the states that is considered in this study for having a lighter lockdown, so for the following 90 responses, filters were added so only people from Arkansas, Iowa, Nebraska, South Dakota and Utah could answer and guarantee a better sample.

However, for the second sample half, only 49 responses were registered during almost 8 weeks. These difficulties in collecting the responses are related to the filtered states that happen to be smaller and with less knowledge or culture on signing in on platforms, such as Amazon Mechanical Turk, to answer surveys for reward.

The sample was 57,7% male and 42,3% female. The most representative age range was from 19 to 35 with a total percentage of 46,5% and the age average of the participants

was 40. Considering educational levels, 62,5% of the respondents have a bachelor's degree, followed by 22,7% of participants with a master or postgraduate degree.

Classification Questions	Results (%)	
Gender	Male	57,70%
	Female	42,30%
Age	19-35	46,50%
	36-50	35,20%
	51-65	16,90%
	66-84	1,40%
Education Level	Less than high school	0,00%
	High school graduate or equivalent	5,60%
	Some college, no degree	9,20%
	College graduate	62,50%
	Postgraduate	22,70%
In which state do you currently live in?	States with stricter lockdown	68,30%
	States with lighter/any lockdown	31,70%
In which state did you spend most of your lockdown days?	States with stricter lockdown	69%
	States with lighter/any lockdown	31,00%

Table 1 - Survey Respondents' Profile

3.3 RESULTS

To be able to test the scenarios and see if there are any differences between samples (lighter lockdown sample vs stricter lockdown sample), one- way ANOVA tests include four assumptions:

1. The samples must be independent.
2. There are no outliers that distort the test results.
3. All samples are drawn from normally distributed populations.
4. The samples have a common variance (Homogeneity of Variances).

Firstly, in each group there were different participants, with no participant being in more than one group, therefore the assumption of independence of observations is met.

Secondly, it is possible to conclude that there was not any extreme outlier that needed to be removed from the sample through an outlier analysis using boxplots.

The normality assumption can be tested using the Shapiro-Wilk test and the Kolmogorov-Sminov test, although researchers suggest the first one as the most accurate for testing the normality of data (Thode, 2002).

In the next chapter, the measurement model was assessed to ensure indicator reliability and construct reliability between the variables.

3.3.1 Measurement Model

In order to evaluate reflective models, it is necessary to assess indicator reliability and internal consistent reliability (Sarstedt et al., 2014). The indicators' reliability was assessed by observing the factor loadings, that must be higher than 0,7 (Hair et al., 2014). We can conclude that all items related to the variables *Extraversion* and *Need For Social Connections*, except E2_2 (-0,020), E2_5 (0,174), E2_7 (0,011), NSC1_1 (-0,099) and NSC1_2 (0,155), have loadings greater than 0.7, thus confirming that indicators' reliability has been reached.

Regarding the variable *Strictness of Lockdown* measured by the items related to respondents' perception of their own lockdown, 4 of the items have loadings greater than 0,7 and the other 4 items have lower values.

The 5 items related to the fourth variable *Intentions of Purchase in Physical Stores*, present loadings greater than 0.7 except item IPS1_3 (0,022).

Following, we verified the constructs' reliability using two important criteria – Cronbach's Alpha (CA) and Composite Reliability (CR). CA provides an estimate of the reliability based on the intercorrelations of the observed indicator variables (Hair, Hult, Ringle & Sarstedt, 2017). As we can verify with greater detail in Table 2 *Extraversion*, *Need for Social Connections* and *Strictness of Lockdown*, all have values greater than 0,7. The variable *Intentions of Purchase in Physical Stores* is the exception with a Cronbach's Alpha of 0,591. Regarding CR, this indicator is most appropriate when doing PLS analysis

as it considers the indicators to have different loadings, unlike Cronbach's Alpha (Henseler, Ringle & Sinkovics, 2009). Consistent with the Cronbach's Alpha results, each construct, except the variable *Intentions of Purchase in Physical Stores*, shows values above the recommended 0,7, fluctuating from 0,708 for Strictness of Lockdown to 0,800 for *Need for Social Connections*, thus confirming construct reliability.

Indicator reliability and internal consistent reliability results can be seen in Table 2.

Construct	Item	Outer Loading	Cronbach's Alpha	Composite Reliability
Extraversion	E2_1	0,737	0,728	0,739
	E2_2	-0,020		
	E2_3	0,723		
	E2_4	0,769		
	E2_5	0,174		
	E2_6	0,647		
	E2_7	0,011		
	E2_8	0,813		
Need for Social Connections	NSC1_1	-0,099	0,740	0,800
	NSC1_2	0,155		
	NCS1_3	0,82		
	NCS1_4	0,677		
	NCS1_5	0,816		
	NCS1_6	0,807		
	NCS1_7	0,781		
Strictness of Lockdown	SL7_2	0,6	0,782	0,708
	SL7_3	0,716		
	SL7_4	0,472		
	SL7_5	0,24		
	SL7_6	0,667		
	SL7_7	0,756		
	SL7_8	0,339		
	SL7_9	-0,072		
Intentions of Purchase in Physical Stores	IPS1_1	0,099	0,591	0,644
	IPS1_2	0,787		
	IPS1_3	0,022		
	IPS1_4	0,829		
	IPS1_5	0,679		

Table 2 - Indicator reliability and internal consistent reliability

3.3.2 One-way ANOVA Tests

To test if there were statically significant differences on the consumer *purchase intentions in physical stores* between two groups defined by their type of lockdown (stricter vs lighter), a one-way ANOVA test was performed.

Defining the variable *strictness of lockdown* as independent variable and the *purchase intentions in physical stores* items as dependent values.

Firstly we use the shopping preferences items scaled from 1 to 5 as dependent variables and the results show significant differences between lockdown type (0 – lighter lockdown vs 1 – stricter lockdown) at the reversed item item IPS1_1 ($F(1,140) = 4.085$, $p \leq 0.05$), where it was asked to our sample if they agreed that internet is a convenient way of shopping and the mean registered in the respondents with stricter lockdown was 1.96 compared to 1.66 registered in the second group. Also at item IPS1_2 ($F(1,140) = 8.034$, $p \leq 0.05$) where the respondents confirmed or not if internet is often frustrating , in the context of shopping, and we registered a difference between the means of 3.71 and 3.09 related to a stricter and lighter lockdown. respectively. The remaining 3 items show insignificant differences as we can see in Table 3 with the ANOVA analysis for Test 1.

The complete tables regarding this ANOVA test is also included in Appendix D.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
IPS1_1	Between Groups	2,735	1	2,735	4,085	0,045
	Within Groups	93,723	140	0,669		
	Total	96,458	141			
IPS1_2	Between Groups	11,800	1	11,800	8,034	0,005
	Within Groups	205,636	140	1,469		
	Total	217,437	141			
IPS1_3	Between Groups	0,264	1	0,264	0,400	0,528
	Within Groups	92,391	140	0,660		
	Total	92,655	141			
IPS1_4	Between Groups	2,182	1	2,182	1,550	0,215
	Within Groups	197,064	140	1,408		
	Total	199,246	141			
IPS1_5	Between Groups	4,798	1	4,798	3,348	0,069
	Within Groups	200,639	140	1,433		
	Total	205,437	141			

Table 3 - ANOVA (Test 1)

For the second test, instead of using the items (scale 1 to 5) as separate values, the dependent variable is the composite value of those 3 items that register loadings above 0.7:

- IPS1_2 – *The Internet is often frustrating*
- IPS1_4 – *I would rather buy at store than wait for delivery*
- IPS1_5 – *I like to shop where people know me*

The results show some significant differences in the intentions of purchase in physical stores between the two groups of respondents ($F(1,140) = 6.621$, $p \leq 0.05$). See Table 4 for the complete ANOVA analysis.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
IPS_composite	Between Groups	5,606	1	5,606	6,621	0,011
	Within Groups	118,533	140	0,847		
	Total	124,138	141			

Table 4 - ANOVA (Test 2)

The complete tables regarding this ANOVA test are also included in Appendix E.

The third test using just one item that measure respondents self-perception of their own type of consumer (scale from -10 (online shopping) to 10 (in store shopping) show insignificant differences between lockdown type (0 – lighter lockdown vs 1 – stricter lockdown) on purchase intentions ($F(1,140) = 0.000$, $p > 0.05$). See Table 5 for the complete ANOVA analysis.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
IPS8_6	Between Groups	0,004	1	0,004	0,000	0,992
	Within Groups	5218,116	140	37,272		
	Total	5218,120	141			

Table 5 - ANOVA (Test 3)

The complete tables regarding this ANOVA test are also included in Appendix F.

Additionally, the last ANOVA test to compare the means of the same two groups, the composite variable related to the need for social connections is used as dependent variable.

The results register insignificant differences between lockdown type (0 – lighter lockdown vs 1 – stricter lockdown) on need for social connections ($F(1,140) = 2.684$, $p > 0.05$). See Table 6 for the complete ANOVA analysis.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
NSC	Between Groups	1,494	1	1,494	2,684	0,104
	Within Groups	77,942	140	0,557		
	Total	79,436	141			

Table 6 - ANOVA (Test 4)

The complete tables regarding this ANOVA test are also included in Appendix G.

3.3.3 Mediation Analysis for the variable Need for Social Connections

Regression analysis was used to examine whether the purchase intentions in physical stores can be explained by the need for social connections. The SPSS macro developed by Hayes (2017) was used to test these effects. We conducted the following single mediation analyses: strictness of lockdown (IV) → need for social connections (Mediator - M1) → purchase intentions in physical stores (DV).

We used PROCESS model 1 with 5,000 samples (Hayes, 2018). First, the results show that strictness of lockdown (0 – lighter lockdown vs 1 – stricter lockdown) does not significantly influence the need for social connections ($b = 0.2218$, $SE = 0.1354$; $p > 0.05$) but the need for social connections had a positive impact on purchase intentions in physical stores ($b = 3.4869$, $SE = 0.6278$; $p < 0.05$).

Strictness of lockdown is not a significant predictor of purchase intentions in physical stores after controlling for the mediator, need for social connections, $b = -0,7624$, $SE = 1,0155$; $p > 0.05$. The indirect effect was tested using a percentile bootstrap estimation approach with 5000 samples, implemented with the PROCESS macro version 3 Hayes (2017). These results indicated the population indirect effect is significant ($b = 0.7735$, $SE = 0.4938$, 95% CI = - 0.1641, 1.7690) therefore need for social connections mediates strictness of lockdown effects on purchase intentions in physical stores. The results of the mediation tests can be found on appendix H.

3.3.4 Moderation Analysis for the variable Extraversion

For the moderation analysis, the goal is to examine whether the moderator *extraversion* describes the level of change between *strictness of lockdown* variable and the independent variables *purchase intentions in physical stores* and the *need for social connections*. Like the previous mediation analysis, the SPSS macro developed by Hayes (2017) was used to test these effects. We conducted the following two single moderation analyses:

- 1) strictness of lockdown (IV) → extraversion (Moderator - W) → purchase intentions in physical stores (DV).
- 2) strictness of lockdown (IV) → extraversion (Moderator - W) → need for social connections (DV).

We used PROCESS model 1 with 5,000 samples Hayes (2017).

Based on the first moderation analysis (strictness of lockdown (IV) → extraversion (Moderator - W) → purchase intentions in physical stores (DV), the results are not significant. First, the R-square is 0.0805, which means that the independent variable (strictness of lockdown) explains only 8% of the variation in the dependent variable (purchase intentions in physical stores).

Taking into consideration all the p-values for strictness of lockdown, extraversion, and intercept, the results are not statistically significant (p-value > 0.05).

As a final note, when considering the conditional effects of the independent variable strictness of lockdown at levels -0.6547, 0.0000 and 0.6547 (SD, Mean and +SD), the results are not statistically significant (p-value > 0.05).

The results of the moderation test 1 can be found on appendix I.

For the second moderation analysis (strictness of lockdown (IV) → extraversion (Moderator - W) → need for social connections (DV)), the results aren't significant. First, the *R-sq* is 0.2269, meaning that the independent variable (strictness of lockdown) only 22% of the variation in the dependent variable (need for social connections).

Following the outputs of this test, considering all *p-values* for strictness of lockdown, extraversion and intercept, the results aren't also significant (*p-value* > 0.05).

Finally, considering the conditional effects of the independent variable *strictness of lockdown* at values of the moderator *extraversion*, the results aren't significant (*p-value* > 0.05) at levels 2.5187, 3.1734 and 3.8281 (SD, Mean and +SD).

The results of the moderation test 2 can be found on appendix L.

3.3.5 Discussion

Prior studies on the effects of social distancing suggest a negative effect specially on the population mental well-being and in their need for social connections (van Agteren et al., 2020). In this study, the main goal was to examine whether the differences between the level of social distancing through lockdown policies explained the consumer intentions of purchasing in physical stores. Based in three ANOVA analysis, one measured by items that describe the consumer preferences showed some interesting results on two items related to the frustration of using Internet and waiting for delivery, confirming significant differences between the two groups. The second test, one composite variable using 3 of the items related to the intentions of physical purchase also presented great results, confirming the significant differences. The third one measured by a single item where it was asked what type of consumer our respondent considered of themselves, and those results demonstrate that there are no significant differences in the consumer preferences between the two groups defined by the type of lockdown experienced by each one. So, we conclude that the populations intentions of purchasing in physical stores vs online shopping could have a relationship with their experienced lockdown and social distancing.

Secondly, we also test the mediator effect of the need for social connections of the population in their purchase intentions in physical stores, showing that, there is no direct relationship between the type of lockdown experienced and the need for social connections, however, the last variable has a positive impact in the purchase intentions in physical stores. Finally, through the indirect effects resulting from this test, we conclude that the variable *need for social connections* mediates strictness of lockdown effects on consumer's purchase intentions in physical stores.

Based in our research model presented before, we also considered the personality trait – *extraversion* – for this study as a moderator. Considering as dependent variables *need for social connections* and *purchase intentions in physical stores*, we conducted two moderation tests. Both test results concluded that there isn't a moderation impact of extraversion in these two variables.

4. CONCLUSIONS

All companies wish to get the key and hit the right prevision on what are the main daily changes in their consumers behaviors, however, there are few things in this world that don't influence those behaviors. And for that, this research aims to extend the literature on the main changes and effects in consumers behavior after COVID-19 and its lockdown policies.

In prior research described in the literature review chapter, demonstrated that the prevision for the future consumer trends includes convenience in people's daily decisions and tasks, therefore, shopping is not an exception. Convenient shopping is described for its time consume, effort, location, safety and other, and so, overall, people associate online shopping to the best form of convenient shopping (Angus & Westbrook, 2020). This prevision was published before COVID-19. Therefore, we conducted this research in order to analyze if the main effects of lockdown policies and social distancing has reversed some of these trends in consumer behavior.

The present research extends the literature related to the impact of social experiences, and eventual phenomena and alterations of those, in the consumer behaviors. It reveals that the different experiences of lockdown between population of the same country (United States, in this case) could have a direct effect in the purchase intentions in physical stores. So, that, our results support our first hypothesis of having higher intentions to purchase in physical stores those who went through a stricter lockdown.

Secondly, although the fact that those lockdown restrictions do not affect the need for social connections in our population, the indirect effect results prove that higher need for social connections mediates the effect of strictness of lockdown on the intentions to purchase in physical stores.

As prior research demonstrated, the physical purchasing intentions is much related to the social experience that is take into account (Bustamante & Rubio, 2017b), and so, we confirmed also in this study a positive impact of the need for social connections in the purchasing intentions in physical stores, additionally to our previously defined hypothesis.

Finally, this work reveals that the personality trait, extraversion, previously related to social events and experiences, does not perform any moderation effect in the two dependent variables related to social experiences such that those who are more extroverts would have higher needs for social connections and therefore, for intentions to purchase in physical store, as described in hypothesis 3.

As a final statement to this study, the intentions of purchasing in physical stores is indeed related to the peoples need for social connections, however, those intentions and needs doesn't register any changes or dependences on the type of social restrictions experienced by this population.

4.3 LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

The present study revealed some limitations in its implementation. The first limitation is related to the collection of data and the difficulty of getting a representative sample, even with paid respondents and filtered by state. In order to get a representative sample of each group of states defined by their policies (stricter and lighter lockdown policies), the survey needed to be filtered to get same size samples for the two groups. However, the group of states described as having lighter lockdown policies, are also the smaller and more rural, so the tools like Amazon Mechanical Turk are not that used and we didn't get the same number of responses as the other group.

Also related to the collection of these samples, there is always the risk of respondents to perform random answers because, at the end of the survey, everyone got their reward. To get more accurate and truthful answers, the method of interviews is always better.

Other limitation of this study was the difficulty on getting a reliable variable with the items that were used in the survey. Although the items were related to the same variable, the results of those items weren't consistent and couldn't aggregate some of those items in just one. In some cases, we needed to work with several items with really inconsistent results between them just to measure one variable.

Finally, as a final limitation it was the generalized consumer experience and not focusing in just one product or market. The answers to the survey could be very misaligned because of the consumer experience assumed by each respondent, and how different could it be. For that, results were much more difficult to analyze and to take conclusions.

In terms of future research on this theme, and taking into account the limitations already presented, it is relevant to try to use stratified samples, with questionnaires prepared online but also in person, in order to achieve a larger sample. It would also be important to extend the study and analyze more variables for the model to be even more representative. It is clear that this requires an effort both in conducting the survey, which becomes more complex for the respondents, and in analyzing the variables, which becomes more complex and more demanding for the counterpart.

Also it helps to get more concrete results to study a specified market or to even develop this research in the format of a case study for a specific product or company.

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6. APPENDIX

Appendix A. Online Questionnaire

Hello there,

For the purpose of my MSc thesis at Nova Information Management School, I'm currently doing research on consumption habits and how they were influenced by COVID 19 lockdown. Therefore, I would highly appreciate it if you could take a bit of your time (8-12 minutes) to answer this online questionnaire.

Thank you very much,

Madalena Cardoso Pinto

Q1 - Considering your shopping routine after these lockdown months, nowadays, how do you classify these shopping motives and utilities? Please choose from 1 (Strongly disagree) and 5 (Strongly agree) in each statement to indicate the extent to which you agree or disagree with that statement.

	1. Strongly disagree (1)	2. Disagree a little (2)	3. Neither agree or disagree (3)	4. Agree a little (4)	5. Strongly agree (5)
The Internet is a convenient way of shopping	☐	☐	☐	☐	☐
The Internet is often frustrating	☐	☐	☐	☐	☐
Shopping over the Internet is a pleasant experience	☐	☐	☐	☐	☐
I'd rather have no human contact and buy from home	☐	☐	☐	☐	☐
I don't like being disturbed and/or distracted by others when shopping (store maids or even other customers)	☐	☐	☐	☐	☐
I would rather buy at store than wait for delivery	☐	☐	☐	☐	☐
I like being surrounded by people when shopping	☐	☐	☐	☐	☐
I like to shop where people know me	☐	☐	☐	☐	☐

I prefer shopping
with company
(friends,
family...)

☐☐☐☐☐

I like when store
maids help me

☐☐☐☐☐

While shopping
on the Internet, I
miss the
experience of
interacting with
people

☐☐☐☐☐

I like browsing
for the social
experience

☐☐☐☐☐

I am cautious in
trying new
products

☐☐☐☐☐

I enjoy exploring
alternative
stores

☐☐☐☐☐

Investigating
new stores is
generally a waste
of time

☐☐☐☐☐

I like to try new
products and
brands for fun

☐☐☐☐☐

Q2² - Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please choose from 1 (Strongly disagree) and 5 (Strongly agree) in each statement to indicate the extent to which you agree or disagree with that statement.

I see myself as someone who...

	1. Strongly disagree	2. Disagree a little	3. Neither agree or disagree	4. Agree a little	5. Strongly agree
is talkative	☐	☐	☐	☐	☐
is reserved	☐	☐	☐	☐	☐
is full of energy	☐	☐	☐	☐	☐
generates a lot of enthusiasm	☐	☐	☐	☐	☐
tends to be quiet	☐	☐	☐	☐	☐
has an assertive personality	☐	☐	☐	☐	☐
is sometimes shy, inhibited	☐	☐	☐	☐	☐
is outgoing, sociable	☐	☐	☐	☐	☐

² BFI scale scoring ("R" denotes reverse-scored items):

Extraversion: 1, 2R, 3, 4, 5R, 6, 7R, 8.

Q3 - In which state do you currently live in?

▼ Alabama (1) ... I do not reside in the United States (53)

Q4 - How big is the settlement where you live? Considering the population of the city

- ☐ Less than 5k
- ☐ 5k - 40k
- ☐ 40k - 70k
- ☐ 70k - 100k
- ☐ 100k - 250k
- ☐ 200k - 500k
- ☐ 500k - 1M
- ☐ More than 1M

Q5 - In which state did you spend most of your lockdown days?

▼ Alabama (1) ... I do not reside in the United States (53)

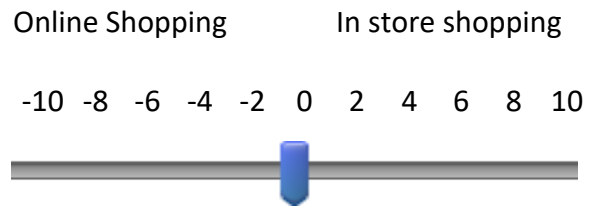
Q6 - How big is the settlement where you spent most of your lockdown days?
Considering the population of the city

- ☐ Less than 5k
- ☐ 5k - 40k
- ☐ 40k - 70k
- ☐ 70k - 100k
- ☐ 100k - 250k
- ☐ 200k - 500k
- ☐ 500k - 1M
- ☐ More than 1M

Q7 - Considering the state you spent most of your time during quarantine, how do you evaluate the strictness of your lockdown in these situations?

	1. With no social restrictions	2. With some social restrictions only during critical days	3. Super strict, with no connections during several months
In your professional life	☐	☐	☐
In your family meetings (family that doesn't live with you)	☐	☐	☐
In friends social events	☐	☐	☐
Going out or going to restaurants	☐	☐	☐
Going to grocery stores	☐	☐	☐
Going to do some retail shopping	☐	☐	☐
Traveling between US states	☐	☐	☐
Traveling to other countries	☐	☐	☐

Q8 - Considering these actual times after covid-19 lockdown, how do you position your consumer experience preferences?



Q9 - Gender

- ☐ Male
- ☐ Female
- ☐ Non-binary / third gender
- ☐ Prefer not to say

Q10 - Age

Q11 - Education

- ☐ Less than high school
- ☐ High school graduate or equivalent
- ☐ Some college, no degree
- ☐ College graduate
- ☐ Postgraduate

Appendix B. Summary of Measurement Item

Construct	Item	Description	Min.	Max.
Extraversion	E2_1	I see myself as someone who... - is talkative	1	5
	E2_2*	I see myself as someone who... - is reserved	1	5
	E2_3	I see myself as someone who... - is full of energy	1	5
	E2_4	I see myself as someone who... - generates a lot of enthusiasm	1	5
	E2_5*	I see myself as someone who... - tends to be quiet	1	5
	E2_6	I see myself as someone who... - has an assertive personality	1	5
	E2_7*	I see myself as someone who... - is sometimes shy, inhibited	1	5
	E2_8	I see myself as someone who... - is outgoing, sociable	1	5
Need for Social Connections	NSC1_1*	I'd rather have no human contact and buy from home	1	5
	NSC1_2*	I don't like being disturbed and/or distracted by others when shopping (store maids or even other customers)	1	5
	NCS1_3	I like being surrounded by people when shopping	1	5
	NCS1_4	I prefer shopping with company (friends, family...)	1	5
	NCS1_5	I like when store maids help me	1	5
	NCS1_6	While shopping on the Internet, I miss the experience of interacting with people	1	5
	NCS1_7	I like browsing for the social experience	1	5
Strictness of Lockdown	SL7_2	In your professional life	1	3
	SL7_3	In your family meetings (family that doesn't live with you)	1	3
	SL7_4	In friends social events	1	3
	SL7_5	Going out or going to restaurants	1	3
	SL7_6	Going to grocery stores	1	3
	SL7_7	Going to do some retail shopping	1	3
	SL7_8	Traveling between US states	1	3
	SL7_9	Traveling to other countries	1	3
	SL_State	In which state did you spend most of your lockdown days?	0	1
Intentions of Purchase in Physical Stores	IPS1_1*	The Internet is a convenient way of shopping	1	5
	IPS1_2	The Internet is often frustrating	1	5
	IPS1_3*	Shopping over the Internet is a pleasant experience	1	5
	IPS1_4	I would rather buy at store than wait for delivery	1	5
	IPS1_5	I like to shop where people know me	1	5
	IPS8_6	Considering these actual times after covid-19 lockdown, how do you position your consumer experience preferences?	-10	10

Appendix C. Loadings and Reliability Analysis

Construct	Item	Outer Loading	Cronbach's Alpha	Composite Reliability
Extraversion	E2_1	0,737	0,728	0,739
	E2_2	-0,020		
	E2_3	0,723		
	E2_4	0,769		
	E2_5	0,174		
	E2_6	0,647		
	E2_7	0,011		
	E2_8	0,813		
Need for Social Connections	NSC1_1	-0,099	0,740	0,800
	NSC1_2	0,155		
	NCS1_3	0,82		
	NCS1_4	0,677		
	NCS1_5	0,816		
	NCS1_6	0,807		
	NCS1_7	0,781		
Strictness of Lockdown	SL7_2	0,6	0,782	0,708
	SL7_3	0,716		
	SL7_4	0,472		
	SL7_5	0,24		
	SL7_6	0,667		
	SL7_7	0,756		
	SL7_8	0,339		
	SL7_9	-0,072		
Intentions of Purchase in Physical Stores	IPS1_1	0,099	0,591	0,644
	IPS1_2	0,787		
	IPS1_3	0,022		
	IPS1_4	0,829		
	IPS1_5	0,679		

Appendix D. One-way ANOVA (Test 1)

Descriptives

		95% Confidence Interval for Mean							
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
IPS1_1	0	44	1,66	0,888	0,134	1,39	1,93	1	5
	1	98	1,96	0,785	0,079	1,80	2,12	1	5
	Total	142	1,87	0,827	0,069	1,73	2,00	1	5
IPS1_2	0	44	3,09	1,217	0,183	2,72	3,46	1	5
	1	98	3,71	1,210	0,122	3,47	3,96	1	5
	Total	142	3,52	1,242	0,104	3,32	3,73	1	5
IPS1_3	0	44	2,11	0,868	0,131	1,85	2,38	1	4
	1	98	2,02	0,786	0,079	1,86	2,18	1	5
	Total	142	2,05	0,811	0,068	1,91	2,18	1	5
IPS1_4	0	44	3,27	1,208	0,182	2,91	3,64	1	5
	1	98	3,54	1,177	0,119	3,30	3,78	1	5
	Total	142	3,46	1,189	0,100	3,26	3,65	1	5
IPS1_5	0	44	3,20	1,153	0,174	2,85	3,56	1	5
	1	98	3,60	1,216	0,123	3,36	3,85	1	5
	Total	142	3,48	1,207	0,101	3,28	3,68	1	5

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
IPS1_1	Between Groups	2,735	1	2,735	4,085	0,045
	Within Groups	93,723	140	0,669		
	Total	96,458	141			
IPS1_2	Between Groups	11,800	1	11,800	8,034	0,005
	Within Groups	205,636	140	1,469		
	Total	217,437	141			
IPS1_3	Between Groups	0,264	1	0,264	0,400	0,528
	Within Groups	92,391	140	0,660		
	Total	92,655	141			
IPS1_4	Between Groups	2,182	1	2,182	1,550	0,215
	Within Groups	197,064	140	1,408		
	Total	199,246	141			
IPS1_5	Between Groups	4,798	1	4,798	3,348	0,069
	Within Groups	200,639	140	1,433		
	Total	205,437	141			

Appendix E. One-way ANOVA (Test 2)

		Descriptives							
		95% Confidence Interval for Mean							
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
IPS_composite	0	44	3,189	0,833	0,126	2,94	3,44	1	4,67
	1	98	3,619	0,956	0,097	3,43	3,81	1	5,00
	Total	142	3,485	0,938	0,079	3,33	3,64	1	5,00

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
IPS_composite	Between Groups	5,606	1	5,606	6,621	0,011
	Within Groups	118,533	140	0,847		
	Total	124,138	141			

Appendix F. One-way ANOVA (Test 3)

		Descriptives							
		95% Confidence Interval for Mean							
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
IPS8_6	0	44	1,59	5,559	0,838	-0,10	3,28	-10	10
	1	98	1,60	6,332	0,640	0,33	2,87	-10	10
	Total	142	1,60	6,083	0,511	0,59	2,61	-10	10

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
IPS8_6	Between Groups	0,004	1	0,004	0,000	0,992
	Within Groups	5218,116	140	37,272		
	Total	5218,120	141			

Appendix G. One-way ANOVA (Test 4)

Descriptives

		95% Confidence Interval for Mean							
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
NSC	0	44	2,95	0,771	0,116	2,72	3,19	1,00	4,14
	1	98	3,17	0,735	0,074	3,03	3,32	1,00	4,43
	Total	142	3,11	0,751	0,063	2,98	3,23	1,00	4,43

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
NSC	Between Groups	1,494	1	1,494	2,684	0,104
	Within Groups	77,942	140	0,557		
	Total	79,436	141			

Appendix H. Mediation Analysis

Purpose of the mediation analysis: Examine whether purchase intentions in physical stores can be explained by the need for social connections. The SPSS macro developed by Hayes (2017) was used to test these effects.

Model : 4

Y : IPS8_6

X : SL_state

M : NSC_agr

Sample

Size: 142

OUTCOME VARIABLE:

NSC_agr

Model Summary

R	R-sq	MSE	F	df1	df2	p
,1372	,0188	,5567	2,6843	1,0000	140,0000	,1036

Model

	coeff	se	t	p	LLCI	ULCI
constant	2,9545	,1125	26,2661	,0000	2,7322	3,1769
SL_state	,2218	,1354	1,6384	,1036	-,0459	,4895

OUTCOME VARIABLE:

IPS8_6

Model Summary

R	R-sq	MSE	F	df1	df2	p
,4262	,1816	30,7228	15,4227	2,0000	139,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-8,7113	2,0345	-4,2818	,0000	-12,7338	-4,6887
SL_state	-,7624	1,0155	-,7508	,4540	-2,7701	1,2453
NSC_agr	3,4869	,6278	5,5539	,0000	2,2456	4,7282

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
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,0111	1,1079	,0100	,9920	-2,1792	2,2015
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Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-,7624	1,0155	-,7508	,4540	-2,7701	1,2453

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
NSC_agr	,7735	,4938	-,1641	1,7690

Appendix I. Moderation Analysis (Test 1)

Purpose of the moderation analysis: Examine if a moderator describes the level of changes between independent and dependent variables. The SPSS macro developed by Hayes (2017) was used to test these effects.

Model : 1

Y : IPS8_6

X : SL_state

W : E_agg

Sample

Size: 142

OUTCOME VARIABLE:

IPS8_6

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2837	,0805	34,7682	4,0278	3,0000	138,0000	,0088

Model

	coeff	se	t	p	LLCI	ULCI
constant	1,7093	,8988	1,9018	,0593	-,0679	3,4865
SL_state	-,2468	1,0790	-,2287	,8194	-2,3804	1,8868
E_agg	1,1894	1,3349	,8910	,3745	-1,4502	3,8290
Int_1	1,9318	1,6263	1,1878	,2369	-1,2839	5,1476

Product terms key:

Int_1 : SL_state x E_agg

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0094	1,4110	1,0000	138,0000	,2369

Focal predict: SL_state (X)

Mod var: E_agg (W)

Conditional effects of the focal predictor at values of the moderator(s):

E_agg	Effect	se	t	p	LLCI	ULCI
-,6547	-1,5115	1,4547	-1,0390	,3006	-4,3879	1,3649
,0000	-,2468	1,0790	-,2287	,8194	-2,3804	1,8868
,6547	1,0179	1,5747	,6464	,5191	-2,0958	4,1317

Appendix L. Moderation Analysis (Test 2)

Purpose of the moderation analysis: Examine if a moderator describes the level of changes between independent and dependent variables. The SPSS macro developed by Hayes (2017) was used to test these effects.

Model : 1

Y : NSC_agr

X : SL_state

W : E_agg

Sample

Size: 142

OUTCOME VARIABLE:

NSC_agr

Model Summary

R	R-sq	MSE	F	df1	df2	p
,4764	,2269	,4450	13,5038	3,0000	138,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	1,6399	,4750	3,4524	,0007	,7007	2,5791
SL_state	-,2890	,5870	-,4923	,6233	-1,4496	,8717
E_agg	,4277	,1510	2,8319	,0053	,1291	,7263
Int_1	,1396	,1840	,7585	,4495	-,2243	,5034

Product terms key:

Int_1 : SL_state x E_agg

Test(s) of highest order unconditional interaction(s):

R2-chng	F	df1	df2	p	
X*W	,0032	,5753	1,0000	138,0000	,4495

Focal predict: SL_state (X)

Mod var: E_agg (W)

Conditional effects of the focal predictor at values of the moderator(s):

E_agg	Effect	se	t	p	LLCI	ULCI
2,5187	,0625	,1646	,3800	,7045	-,2629	,3880
3,1734	,1539	,1221	1,2608	,2095	-,0875	,3953
3,8281	,2453	,1782	1,3768	,1708	-,1070	,5975

