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**THE EFFECTS OF CONFLICTING SOCIAL NORMS ON MEAT
CONSUMPTION BEHAVIOR**

Porto Alegre

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CONSUMPTION BEHAVIOR**

Ph.D. Dissertation presented to the Postgraduate Program in Management of the Federal University of Rio Grande do Sul as a partial requirement to obtain the Ph.D. title

Supervisor: Profa. Dra. Marcia Dutra de Barcellos, Ph.D.

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ABSTRACT

Contemporary social problems related to sustainability demand new theoretical approaches in the field of consumer behavior. In terms of food, sustainable diets with reduced or eliminated meat consumption are indicated. They have been reinforced in the scientific academy and traditional and social media, generating an “anti-meat agenda”. However, the discussion has long been controversial: eating meat is part of most diets in Western societies and the prevailing social norm. People are part of several social groups simultaneously, and some of these groups are expected to have a social norm that supports eating meat (e.g., family) and others that do not (e.g., friends). In this case, there is a conflict between the social norms of different groups. Considering that the influence of social norms on consumer behavior is well recognized, the conflict between norms is expected to affect meat consumption behavior. However, does conflict between social norms of different groups reduce meat consumption? We investigated the effect of conflicting social norms from different groups on meat consumer behavior by conducting two studies, consisting of a systematic literature review and exploratory empirical research with a mixed method, one qualitative and the other experimental. As a result of the systematic review, the main patterns of quantitative empirical research related to social norms and food and beverage consumption behavior were described. Six opportunities for further research were proposed considering three dimensions: theoretical, methodological, and contextual. The findings of this stage supported the development of the empirical research, which began with collecting qualitative data through in-depth interviews with 13 people with different dietary profiles (vegetarians, reducers, and full meat-eaters). Based on the findings and theory, we proposed four hypotheses for the experimental study, two related to the effect of conflicting norms on meat consumption intention, considering the consumption pattern (if full meat-eater, decrease intention; or if reducer, increase intention); and two hypotheses that predicted pro-environmental self-identity and self-transcendence as moderation variables. We conducted a one-factor experimental design survey (N=267) with two conditions among participants (1x2). From an integrative analysis of the two stages of the empirical study, we propose that normative conflict reduces the consumption behavior of full meat-eaters but that this reduction may not be conscious or known by them as a result of a conflict denial strategy (and, hence its effect on behavior). In the case of reducers, we theorize that they may have a greater awareness of conflict at a conscious level and that the strategy they develop to deal with the conflict situation leads to a more linear behavior concerning the amount of meat consumed. The findings indicate that interventions based on conflicting social norms of different groups can be a tool to reduce meat consumption among groups with higher consumption levels.

Keywords: Sustainability. Food. Social Norms. Focus Theory of Normative Conduct. Normative Conflict. Consumer Behavior. Meat. Beef. Sustainable Diet.

RESUMO

Problemas sociais contemporâneos relacionados à sustentabilidade demandam novas abordagens teóricas no campo do comportamento do consumidor. Em termos de alimentação, dietas sustentáveis com redução ou eliminação do consumo de carnes são indicadas e têm sido reforçadas pela academia e nas mídias tradicionais e sociais, gerando uma “agenda anti-carne”. No entanto, a discussão tem sido considerada controversa, pois apesar dos impactos ambientais da produção de carne, comer carne faz parte da maioria das dietas nas sociedades ocidentais e a norma social predominante. As pessoas fazem parte de vários grupos sociais ao mesmo tempo e espera-se que alguns desses grupos tenham uma norma social que apoie o consumo de carne (por exemplo, família) e outros que não (por exemplo, amigos). Nesse caso, há um conflito entre as normas sociais de diferentes grupos. Considerando que a influência das normas sociais no comportamento do consumidor é bem reconhecida, espera-se que o conflito entre as normas afete o comportamento de consumo de carne. No entanto, o conflito entre as normas sociais de diferentes grupos reduz o consumo de carne? Investigamos o efeito de normas sociais conflitantes de diferentes grupos no comportamento de consumo de carnes por meio da realização de dois estudos, sendo uma revisão sistemática da literatura e uma pesquisa empírica exploratória com método misto, com uma etapa qualitativa e outra experimental. Como resultado da revisão sistemática, foram descritos os principais padrões de pesquisa empírica quantitativa relacionados às normas sociais e comportamento de consumo de alimentos e bebidas e foram propostas seis oportunidades para novas pesquisas considerando três dimensões: teórica, metodológica e contextual. Os achados desta etapa subsidiaram o desenvolvimento da pesquisa empírica, que iniciou com a coleta de dados qualitativos por meio de entrevistas em profundidade com 13 pessoas com diferentes perfis alimentares relacionados ao consumo de carnes (vegetarianos, redutores e carnívoros integrais). Com base nos achados e na teoria, propusemos quatro hipóteses para o estudo experimental, duas relacionadas ao efeito de normas conflitantes na intenção de consumo de carne, considerando o padrão de consumo (se carnívoro, intenção diminuía; ou se redutor, intenção aumentava); e duas hipóteses que prediziam a autoidentidade pró-ambiental e a autotranscendência como variáveis de moderação. Conduzimos uma pesquisa de desenho experimental de um fator (N=267) com duas condições entre os participantes (1x2). A partir de uma análise integrativa das duas etapas do estudo empírico, propomos que o conflito normativo reduz o comportamento de consumo dos carnívoros, mas que essa redução pode não ser consciente ou conhecida por eles como resultado de uma estratégia de negação do conflito (e, portanto, de seu efeito sobre o comportamento). No caso dos redutores, teorizamos que esse grupo pode ter uma maior percepção do conflito em nível consciente e que a estratégia que desenvolvem para lidar com a situação de conflito leva a um comportamento mais linear em relação à quantidade de carne consumida. Os achados indicam que intervenções baseadas no conflito de normas sociais de diferentes grupos podem ser uma ferramenta para reduzir o consumo de carne entre grupos com níveis de consumo mais elevados desse alimento.

Palavras-chave: Sustentabilidade. Alimentação. Normas Sociais. Teoria do Foco Normativo. Conflito Normativo. Comportamento do Consumidor. Carne. Alimentação Sustentável.

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1. INTRODUCTION

The climate is dangerously changing, and global warming is challenging to society. Extreme temperatures such as those observed in the historic heat waves of 2021 and 2022 in Europe are “the new normal” in a scenario in which four key climate change indicators—greenhouse gas concentrations, sea level rise, ocean heat content, and ocean acidification—hit record in 2021 (WMO, 2022b, 2022a). The climate crisis requires structural changes in the economic chain, from production to consumption, including individuals’ habits and dietary choices. In this context, consumer decisions are strategic, especially in the three areas of most significant environmental impact in terms of consumption: transport, housing, and food (Ivanova et al., 2020).

Food is a critical consumer sector regarding environment impact and harm (Lehner et al., 2016). Hence, there is increasing social pressure for changes in diet, especially in meat consumption patterns (Cheah et al., 2020). Among foods, meat has received particular attention due to the overall impact of the chain (Clune et al., 2017; Ivanova et al., 2020). A body of studies has been suggesting that more sustainable diets are necessary and has consistently suggested reducing meat and animal product consumption and replacing them with plant-based or other protein alternatives (Creutzig et al., 2018; Springmann et al., 2018). Intensive meat production has been identified as a leading cause of atmosphere-polluting gases, land, water, and energy use, and ecosystem degradation, leading to biodiversity loss (The Lancet, 2018). Decrease meat consumption, substituting plant-based or proteins from other origins—such as lab-grown meats—and substituting meats from animals raised in agroecological systems are alternatives to reduce environmental impacts (Machovina et al., 2015).

The challenges of sustainability's social, economic, and environmental dimensions arising from the current high levels of meat consumption added to the resistance and barriers to reducing consumption. Changes in eating patterns are challenging due to the complexity of eating behavior (Vermeir et al., 2020). Considering that the decision of food consumption involves a multifaceted context, including the social-cultural environment, interventions to reduce meat consumption based on social norms emerge as an alternative that should be investigated since social norms’ influence on behavior is well recognized (Eker et al., 2019; Higgs & Thomas, 2016; Mollen et al., 2013).

As group affiliations and social identity processes are connected to following the social norms of referent groups (Hogg, 2016), eating behavior is affected by social norms

(Stok et al., 2018). Social norms are negotiated rules and patterns to regulate social behaviors communicated and understood by members of a specific group (Cialdini et al., 1990). Although they guide or restrict behaviors and conduct, they are not supported by a formal law system (Cialdini & Trost, 1998). Therefore, the more relevant the membership to the self-concept, the stronger the group identification, the adherence to group social norms (Hirsh & Kang, 2016), and, consequently, the engagement with norm-related behaviors (Lapinski & Rimal, 2005).

Eating meat is the current and well-entrenched social norm in most societies (Sparkman & Walton, 2017) but has been crescent pressure to dietary shifts related to meat intake. Nowadays, meat is depicted as a pharmakon, covered by ambiguities, in an imaginary binary choice between animal *versus* plant food (Leroy, 2019; Leroy & Barnard, 2020). Emerging trends and collective changes in behavior result in new social norms (see Boenke et al., 2022; Sparkman et al., 2020), conflicting with the current norms. The controversy occurs both in the scientific field and mass media, exposing consumers to information conflict and ambiguity. As result, people may be exposed to diverging social norms, consumers are expected to face norm conflicts regarding meat consumption.

Individuals have multiple group affiliations, and the social norms will not always be aligned with each other. Normative conflicts occur when social norms from different valued groups are salient, divergent, and incompatible (Amiot et al., 2020; Hirsh & Kang, 2016). Involved individuals become aware of these divergences and realize their potential to harm their social relationships (Giguère et al., 2010; Hirsh & Kang, 2016).

People use cognitive strategies to solve the conflict that affects their behavior, including the consumption processes. However, the effect of incompatible normative standards on consumer behavior needs to be better studied. A limited number of academic works investigated the conflict of social norms between different groups, and studies with empirical data are scarce. Previous research also has neglected the conflict of social norms between relevant groups and its effect on food consumption. To the best of our knowledge, there is no work published exploring conflict norms and the food consumption domain. Previous studies explored norm conflict in the pro-environmental domain (McDonald et al., 2013, 2014a, 2014b; Salmivaara & Lankoski, 2019) and alcohol consumption behavior (Cail & LaBrie, 2010). Considering the relevance of dietary choices to public health and the environment, food is an important domain to be explored.

To fill these gaps, we investigated the effect of conflicting social norms of different groups on meat consumption behavior. Further, we tried to answer the following question: can conflict between social norms of different groups reduce meat consumption? Therefore, we carried out a mixed method study, consisting of a systematic literature review and two-stages empirical research with consumers, one qualitative and the other with an experimental approach. The studies are interconnected and interdependent: each represents a necessary step in the research journey.

The thesis is structured in seven sections. First, the justification for the study is presented, highlighting the theoretical, managerial, and social contributions. Second, we introduce the thesis goals. The theoretical background is presented in the third section, exploring social identity, group affiliation, and social norms through the lens theories—Social Identity Theory (Tajfel & Turner, 1979) and Focus Theory of Normative Conduct (Cialdini et al., 1990)—and the normative conflicts. We also discuss sustainable diets, food and meat consumption behavior, and the controversies and ambiguities related to meat consumption to build the argument that the conflicting social norms of different groups affect meat consumption behavior.

The fourth section begins by presenting an overview of the two studies that make up the thesis and how they are connected. Afterward, we present each one of the studies, detailing the method and procedures used, the results, and a summary of the main findings. As the methodological path was a process, that is, the results of one stage generated inputs for the next stage, we chose to present and discuss the results in study 1 (systematic review) and the first stage of study 2 (in-depth interviews). Having the results of the third stage (experiment), we went to the general and joint discussion of the data and empirical findings.

Finally, the conclusion is presented, encompassing the main contributions and the research's limitations. The appendices bring the instruments used for data collection, analysis scripts in R, and abstracts of articles presented at conferences.

2. JUSTIFICATION

In this section, we will explain the thesis's theoretical, managerial, and social contributions. The theoretical contribution refers to advancing the Focus Theory of Normative Conduct. There are few previous studies on the conflict of social norms of different groups and until now, each type of conflict was treated separately, and their distinctions and similarities were unclear. Thus, we systematized and differentiated the types of norm conflict, collaborating with the field to better understand the types of conflict and influencing factors. Future research in the area will benefit as the concept of conflicting standards is clarified and evolved.

The research answered a call from the academy to theorize about social norms (Shulman et al., 2017). Social norms are widely used as a component of behavioral change interventions and figure prominently in several influential behavioral theories (Higgs, 2015; Lee et al., 2007; Neighbors et al., 2011; Robinson, 2015). For instance, the Theory of Planned Behavior (Ajzen, 2012) is one of the dominant theories in social psychology and considers injunctive norms as a component (Hassan et al., 2016; Olsen & Grunert, 2010; Wenzig & Gruchmann, 2018). However, in addition to solid evidence of the influence of social norms on behavior, some authors have reported mixed results in previous norm-based interventions (Brannon, 2021; Lapinski et al., 2017; Maddock & Glanz, 2005; Pelletier et al., 2014; Rimal, 2008). Thus, this study's findings help to understand social norms' dynamics better, advancing both the Focus Theory of Normative Conduct (Cialdini et al., 1990) and other behavioral theories that use social norms as a component.

Regarding the study context, expanding studies on the domain of eating behavior deepens the understanding of food consumption behavior and dietary choices. Research indicated that the nature of the relationship between social norms variables is dependent on the focal behavior (Lapinski et al., 2017) and investigations context-specific in food consumption are necessary. Additionally, there has been increasing attention to food production and consumption effects on the environment and human health, especially meat consumption. Considering the growing concern about environmental and climate issues and the increasing intention to reduce or curtail meat consumption (Soule & Sekhon, 2019), it is a flourishing field.

Besides food, the theoretical contribution can be extended to many domains. Studies on the topic can help unravel the influence of normative conflicts on human behavior, collaborating for several areas of knowledge that study social norms and

behavioral phenomena such as Medicine, Nutrition, Psychology, and Management. For example, the finds can collaborate on pro-environmental and healthy behavior, interpersonal, familial, and professional relationships, work environment, professional choices, and political choices.

The thesis contributes to business and economic activity once changes in meat consumption affect the production systems and the economy. Changes in consumption patterns influence global value chains, which must adapt to new scenarios. As a result, there is a demand for more flow and quality of information for decision-making and innovation in production, distribution, and retail processes. Alternative products to substitute meat are also a growing market that can be impacted by new trends in meat consumption, including new niches such as products developed for meat-eaters (Curtain & Grafenauer, 2019). Identifying consumer behavior trends inputs to incumbent firms' adaptations and paths to new business models driven by innovation, technology, and sustainability.

The economic and social importance of the livestock chain is relevant in farming, consuming, and exporting countries. The study was carried out in Brazil, which is currently the world's largest (i) producer of beef and buffalo meat, (ii) meat exporter country (Brazilian Beef Exporters' Association, 2019). Besides the external market, most Brazilian meat production is destined for the domestic market. The importance of meat to the Brazilian economy highlights the impact of changes in eating habits and the demand for meat.

Additionally, there is a predominance of studies on meat and food consumption in developed countries, mainly in the United States and Europe (Shulman et al., 2017), demonstrating a lack of studies in countries with diverse contexts. The social environment is important to social norms and diverse socio-economic-cultural contexts, as Brazil may enrich and evolve the social norm theory.

Studies on meat consumption meet society's demand for a more sustainable and healthier lifestyle and habits. The results may also support public policies on sustainability, nutrition, and food. The increasing global warming, rapid environmental degradation, and the biodiversity loss have presented complex and multidisciplinary challenges in the last decades. Results can contribute to future public interventions and policies to change eating patterns to more sustainable diets.

We explored a socially contemporary and emerging issue: the reduction of meat consumption as a measure to combat global warming. Theories of consumer behavior do not seem to solve contemporary problems related to sustainable consumption behavior,

which motivated us to explore intersections between theory and issues relevant to society, aiming to develop the social norms theory and the field of food and meat consumption. The social contribution lies in articulating valuable information for future research to reduce meat consumption and sustainable diets, considering that the ongoing climate change mitigation is urgent and requires efforts in all areas, including academia. The research is also connected with UN Sustainable Development Goals (SDGs), in particular, Goal 12, and it targets 12.3, 12.8, and 12A.

Another contribution is the study of people who eat meat, who are the majority of the world's population. According to Eker et al. (2019), reducing levels of meat consumption in the general population is more effective in achieving sustainability than drastic changes (such as eliminating meat from the diet) in part of the population. Furthermore, sustainable choices such as reducing the amount of meat in the diet or choosing organic animal products or from free-range animals are relatively more straightforward than excluding meat completely from the diet (Dagevos, 2021). Social norms, and normative conflicts can be drivers or barriers to meat consumption and understanding their effects on the behavior of meat consumers is relevant in this context. Interventions based on conflicting norms could be a way to reduce global levels of meat consumption, as there is reluctance among consumers to change their usual pattern of meat consumption (Hartmann & Siegrist, 2017).

3. GOALS

The main goal is **to investigate the effect of conflicting social norms of different groups on meat consumer behavior.**

To accomplish this, we propose the following specific goals:

a) to explore the theoretical body of knowledge on social norms and conflicts of social norms of different groups, sustainable diets, and food and meat consumption, identifying previous empirical research on the area and research gaps;

b) to identify the effect of conflicting social norms of different groups in meat consumption behavior;

c) to verify if pro-environmental self-identity and self-transcendence moderate the relationship between conflict of social norms of different groups in the intention of meat consumption.

4. THEORETICAL BACKGROUND

In this section, the theoretical basis of the social norm conflict is presented. First, we explore the relationships among social identity, group affiliation and social norms. Then, we discuss the possible types of social norms conflict and its characteristics, deepening the discussion on the conflicting norms of different groups that the person identifies with. After, we approach the sustainable diet, food consumption behavior, and meat consumption. Finally, the ambiguities and controversies related to meat consumption and how it influences social norms in ways that result in normative conflicts are discussed.

4.1. Social identity, group affiliation, and social norms

Humans are social beings by nature, and the social environment has an essential influence on who a person is (Hirsh & Kang, 2016). Each person has a complex psychological system – self-concept - that encompasses a set of identities constructed from the interaction between personal characteristics and the social environment (Amiot et al., 2007). This set of identities organize previous experience and manifest social roles, determining who a person was, is, and who may become in the future, and is considered a strong predictor of future choices and behavior (Oyserman, 2009a). Identities are hierarchically organized (Dermody et al., 2018) and relatively stable (Oyserman, 2009b; Swann Jr., 1983). Insofar as they are embedded within the social context, they can be adaptable, malleable, and situation-sensitive (Oyserman, 2009b; Reed et al., 2012).

Self-concept represents thoughts and feelings about yourself and results from the fusion of perspective of others (extrinsic) to yourself perspective (intrinsic) about yourself (Swann Jr., 1983). The intrinsic perspective and personal characteristics, such as personality and traits, are highly particular, unique and affect and are affected by the social environment (Oyserman, 2009a). The construction of components of the self-concept is environmentally and culturally contextualized, immersed in the social context, based on relationships, social roles played, and group memberships (Terry et al., 1999).

According to Social Identity Theory (Tajfel & Turner, 1979), individuals segment, categorize, and classify the social environment through groups, and to categorize themselves as part of the environment from group affiliation (Terry et al., 1999). Self-categorization enables the relative perception of the individual's position and a broader understanding of the role in the social system (Abrams & Hogg, 1990). This

process occurs through the identification with a specific group and its members, highlighting intragroup cohesion, and by comparing the similarities and differences of that group with the other groups of the social system, resulting in intergroup differentiation (Terry et al., 1999).

Group affiliation results in following a specific prototype, which guides behavior, beliefs, attitudes, and feelings (Hogg, 2016). The group prototype is influenced by a single, particular, and shared normative system, and members of a specific group are expected to act according to the group's norms (Fritsche et al., 2018; McDonald et al., 2013). These norms are called social norms and must be followed to confirm and maintain affiliation. It is a prevalent behavior in the community, and this prevalence is known by the members (Hawkins et al., 2019).

Social norms are negotiated rules and patterns to regulate social behaviors, communicated, and understood by members of a specific group (Cialdini et al., 1990). Guides or restrict behaviors and conducts, although they are not supported by a formal system of laws (Cialdini & Trost, 1998), and this influence on behavior is underdetected by people (Nolan et al., 2008). Social norms are shared among group members actively, by instructions, demonstration, rituals, or passively, in a nonverbal way or by observation and imitation (Cialdini & Trost, 1998). The normative information can be directly communicated by other group members' behavior and opinions or indirectly by communicated information about a group and signals sent from social institutions (Yamin et al., 2019).

From a functional point of view, the strength of social norms derives from the inherited ability to survive as an individual and as a group, and the adaptive and psychological need to belong to a community (Cialdini & Trost, 1998; Yamin et al., 2019). McDonald & Crandall (2015) highlight that social norms have a biological basis, considering human's evolutionary history and neurological structure, but these are learned and reinforced by a psychological process embedded in the social and cultural context. Social norms are part of the culture and work as group cohesiveness by shared customs, traditions, standards, rules, and values (Cialdini & Trost, 1998).

From this sociocultural context, different types of social norms emerge in the source of motivation (Cialdini et al., 1990; Hamann et al., 2015), despite that social pressure is a common motive to adherence to social norms (Thøgersen, 2006). Descriptive norms are standard social behaviors, following what the group's colleagues do and are learned by observation and imitation (Cialdini et al., 1990; Miller & Prentice, 2016). Represents what behavior is "normal" (Thøgersen, 2006) and guides behavioral choices

when the situation is new or unclear. Injunctive norms - also called prescriptive norms (Hawkins et al., 2019) - are related to socially valued behaviors resulting from approval or disapproval by their group peers, and that determines what should and what should not be done. Sanctions or the feeling of moral sanctions are the main motivational component of this type of norm. Thøgersen (2006) suggests that in terms of levels of internalization and integration with the self, descriptive norms are more strongly related to the external environment while injunctive norms are more introject.

Both descriptive and injunctive norms influence beliefs and behaviors (Smith & Louis, 2008). Still, their alignment can result in a more substantial effect on behavioral change compared to using a norm alone (Schultz et al., 2018). On the other hand, the misalignment between descriptive and injunctive norms can weaken their effects on consumer behavior (Hamann et al., 2015). Injunctive norms are considered more powerful and general. Also, exert more significant transsituational influence than descriptive norms (Cialdini et al., 1990; Kallgren et al., 2000), and in the situation of conflict between descriptive and injunctive norms, injunctive overlap descriptive norms (Cialdini & Trost, 1998; Plows et al., 2017).

The strength of social norms is influenced by the degree of individual's identification with the group and salience of the norm or group membership (Goldstein et al., 2008; Hirsh & Kang, 2016). Regarding salience of the norm, both the theory of the focus of normative conduct and the theory of social identity recognize that norms are not uniform in force at all times, and salience reinforces the effect of the norm, in a theoretical alignment (Hirsh & Kang, 2016).

However, there a difference between the theories. By the lens of focus theory of normative conduct, in some situations, cues and signals activate a specific norm, increasing their effectiveness (Cialdini et al., 1990). Considering social identity theory (Tajfel & Turner, 1979) and the multiple social group identification (Amiot et al., 2020), the context can highlight an affiliation and social identity of a specific group. When a specific social identity is highlighted by environmental cues, group norms are also highlighted concerning other group norms at that particular time and context, affecting the behavioral impact of the group norm highlighted (Abrams et al., 1990). So, by this lens, the salience of the norm is a result of the salience of affiliation and social identity.

Besides salience, group identification is important to norm adherence. Perceived similarity (Lapinski & Rimal, 2005), group's meaningfulness to the individual (Goldstein et al., 2008), affinity and desire to connect with a reference group (Lapinski & Rimal, 2005) and the importance of the group for the self-concept (Hirsh and Kang, 2016)

influence the strength of group identification. The higher the identification with some group, the greater the adherence to group social norms (Hirsh & Kang, 2016) and, consequently, greater is the engagement with the behavior related to the norm (Lapinski & Rimal, 2005).

4.2. Different groups, different norms: exploring normative conflicts

The complexity of the social environment can result in situations in which norms are different and misalign, leading to normative conflicts. There are two possible situations of normative conflict: conflicting norms within the same group and conflicting norms of different groups.

In the first case, a conflict occurs between descriptive and injunctive intragroup norms simultaneously activated and contradictory (Ge et al., 2020). The conflicting norms emanate from the same source (a specific group—e.g., family or peers) and usually put the individual in a situation of supportive versus unsupportive norm (Smith et al., 2012). Here, what is relevant is the relationship and the strength of the two types of norms.

In this normative conflict, the group formally approves some behavior, but members did not engage in this behavior indeed. Or, in reverse, people disapprove of some behavior but, in fact, behave like this. For example, a group of peers can approve and stimulate meat consumption reduction, but the real behavior of the members is to maintain the same pattern of meat intake.

The misalignment between the two types of norms has been studied empirically, and most results indicated that conflict could weaken the normative influence on intentions and behavior (Hamann et al., 2015; Jun & Arendt, 2020). It occurs because conflict may: i) undermine conformity to either norm, reducing the intention to engage in the behavior in question (J. R. Smith et al., 2012; Staunton et al., 2014); and ii) to reduce perceived social pressure to conform with the norm, discouraging people from engaging in the behavior (Jun & Arendt, 2019). According to Smith et al. (2012), when descriptive and injunctive norms are incongruent, the intentions to engage are equivalent to the intentions of individuals exposed to norms related to disapproval or disengagement in some behavior. On the other hand, an alignment between descriptive and injunctive norms results in an increased norm effect on behavior compared to using a norm alone (Cialdini, 2003; Schultz et al., 2018).

However, Plows et al. (2017) suggest that the misalignment between descriptive and injunctive group norms can mobilize healthy eating behavior. The authors explain

that healthy eating impacts primarily at the individual level, and norm misalignment may have a motivator effect on behaviors considered positive, like healthy eating. Meat can be considered both beneficial and prejudicial to health, presenting positive and negative outcomes (Barnard & Leroy, 2020b, 2020a; Leroy & Barnard, 2020).

The second type of normative conflict occurs when people are exposed to conflicting norms of different groups, activated simultaneously. Group memberships are defined by many factors, including nationality, peer group, family, friendships, gender, race, sexual orientation, and political preferences (Higgs, 2015; Hirsh & Kang, 2016). Thus, a person is concomitantly affiliated with and influenced by different social groups and is exposed to different normative expectations (Amiot et al., 2020). Considering the norm as a group standard (McDonald & Crandall, 2015), it is reasonable to expect that groups have different norms among themselves (McDonald et al., 2013). Consequently, social norms can be important and incompatible simultaneously, which can lead to normative conflicts (Fritsche et al., 2018; Randers et al., 2021).

Group identification plays an important role in this situation. In a conflict between norms of a valued group to the self-concept (high identification) and norms of another group less important (low identification), it is expected to reinforce the behavior related to social norms of the group the person identifies with (i.e., relevant group). It highlights outgroup differentiation and strengthens group cohesiveness, stability, and affiliation (Fritsche et al., 2018; Hogg, 2016).

Although, when the normative misalignment occurs between norms of two relevant groups, the group identification cannot help resolve the conflict. For example, consider two groups, friends and family, both relevant and with the same level of identification. In this situation, one individual can be part of a group of friends with a supportive norm related to reducing meat consumption. However, at the same time, their family group can have unsupportive norms related to reducer behavior. The individual is aware of the divergence and realizes that this difference can lead to a position that harms their social relationships because of incompatible behavioral expectations (Giguère et al., 2010; Hirsh & Kang, 2016). As a result, there is a feeling of failure to satisfy the role requirements of identities and comply with a group's norms, which puts the affiliation at risk (Gibson et al., 2020).

Previously research explored the conflict between social norms of different groups in the pro-environmental domain (McDonald et al., 2014a, 2014b; Salmivaara & Lankoski, 2019; Staunton et al., 2014)) and alcohol consumption behavior (Cail &

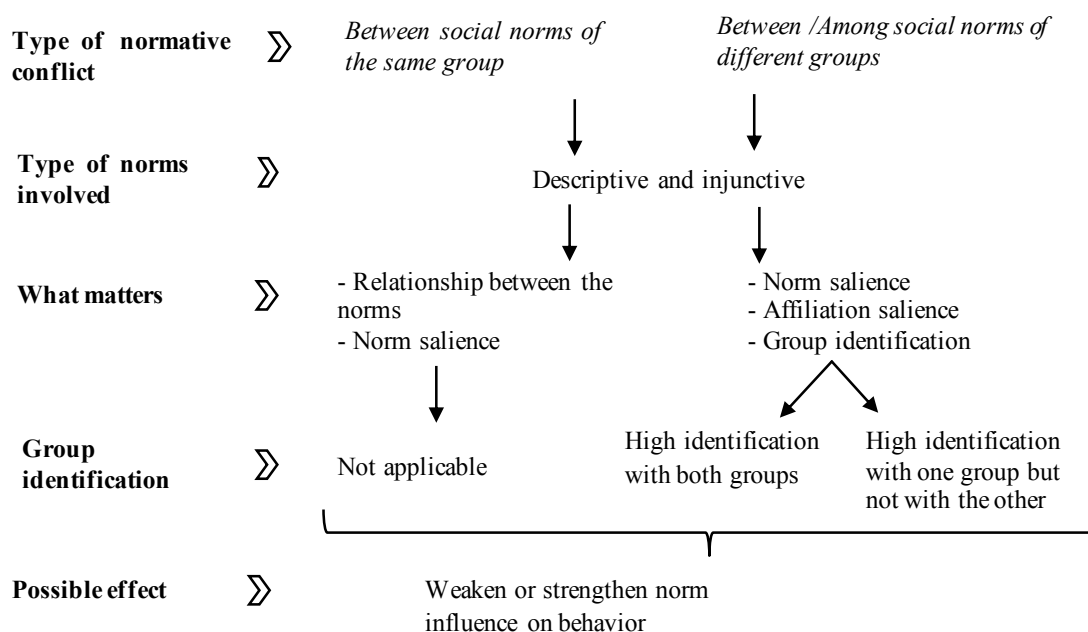
LaBrie, 2010). Norms conflict impact in behavior can be mixed, positive, or negative and are influenced by other factors (Fritsche et al., 2018; McDonald et al., 2014a).

People use cognitive activities and behavioral strategies to solve this conflict and ensure stability (Reed et al., 2012). Potential reactions include switching between identities, suppressing one of the conflicting identities, enhancing elements of the dominant identity, and denying the conflict (Giguère et al., 2010; Hirsh & Kang, 2016).

Compensatory consumption of products and/or services to reinforce a specific identity is one possible strategy to enhance a dominant identity (Coleman et al., 2019). Suppose a compensatory consumption behavior is a direct strategy. In that case, scholars interpret the act of avoiding consumption also as a manifestation of self-identity and an indirect strategy to reinforce self-concept. Thus, consumption reduction, avoidance, or rejection are practices of anti-consumption and self-expression to take distance from undesired self-identity (García-de-Frutos et al., 2018).

Figure 1 summarizes the discussion and helps organize our understanding of normative conflicts.

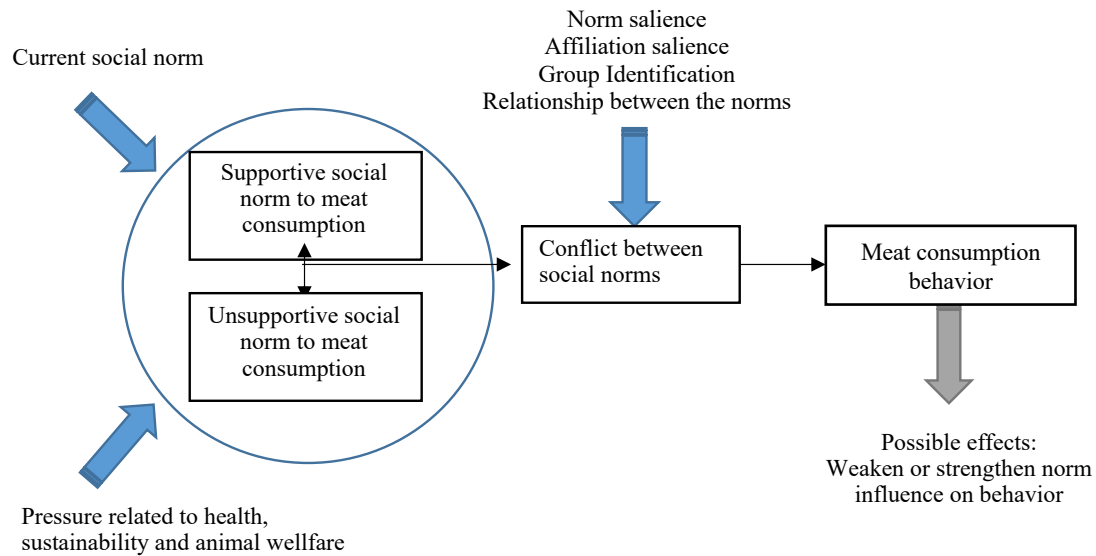
Figure 1 - Type of normative conflicts and main characteristics



Source: the author

Finally, the theoretical framework to conflict between social norms regarding meat consumption is proposed in Figure 2.

Figure 2 - Theoretical framework of normative conflicts



Source: the author

4.3. Reducing meat consumption as part of a sustainable diet

There is growing pressure to shifts in food consumption patterns to healthier and more sustainable diets due to the overall impact of food production and consumption. Diet-related problems as obesity, diabetes, and other chronic diseases have increased worldwide in the last decades (World Health Organization, 2020). Agriculture and livestock are responsible globally for using a relevant portion of water, land and energy, and greenhouse gas emissions (Springmann et al., 2018). For example, the food system is worldwide responsible for 30% of energy consumption and 22% of greenhouse gas emissions (UN, 2015; Willits-Smith et al., 2020). The food system encompasses all the activities and outcomes from production to consumption, and its primary objective is food security (Eriksen, 2008). Sustainable food systems should consider the three main dimensions of sustainability—economic, social and environmental—, in a holistic approach (FAO, 2018). Thus, changes in the food consumption patterns are necessary to achieve food and nutrition security sustainably.

In terms of environmental impact, sustainable diets support food production chains that reduce gas emissions, freshwater use, biodiversity loss, land-system change, and preserve nitrogen and phosphorus cycles (Willett et al., 2019). Regarding the social dimension, sustainable diets must consider rights, equity, markets, access to resources, food traditions, and equal access of vulnerable groups taking into account gender class

and race (Jones et al., 2016; Springmann et al., 2018). Also, should consider socio-cultural outcomes nutrition, health and animal welfare (FAO, 2018).

Dietarian shift recommendations include reducing or eliminating some food categories from the diet, as high sugar-added and ultra-processed products (Cranston et al., 2020; Willett et al., 2019). Reducing meat and animal product consumption and replacing them with plant-based products and alternative animal protein sources (e.g., insects) have also been suggested (The Lancet, 2018; Vermeir et al., 2020). Also, the consumer can reduce the social and environmental impact of food by selecting options produced organically, locally, free-range, and fairly traded (Soule & Sekhon, 2019).

The consumer can engage in sustainable diets by (i) choosing products with sustainable production and (ii) changing their dietary pattern of food intake (M. C. D. Verain et al., 2015). The first strategy can be considered an efficient behavior strategy because the consumer seeks to maintain their original diet but reduces its impact by selecting products organic, locally produced, fairly traded, from agroecological systems, from free-range animals, and choices that avoid food waste (Ivanova et al., 2020; Soule & Sekhon, 2019). The second strategy involves eliminating or curtailing the consumption of food categories, such as reducing or stopping meat consumption (M. C. D. Verain et al., 2015).

However, changes in eating patterns are challenging and hard to achieve due to the complexity of eating activity (Vermeir et al., 2020). Sobal et al. (2014, p. 6) pointed out that “eating is a multifaceted, contextual, dynamic, multilevel, integrated, and diverse activity” encompassing multiple dimensions as physical, biological, psychological, and socio-cultural. Additionally, previous research identified an attitude-behavior gap regarding purchasing sustainable food products, which differs from the consumer behavior process described in the consumer behavior theory (Vermeir & Verbeke, 2006).

Food choice involves multiple daily decisions, and the context matters (Sobal et al., 2014). In a multi-perspective view, food choice is more complex than an individual decision: habits, culture and social structures, as family, groups, organizations are determinants (Klößner, 2017; Sobal et al., 2014). It is a social process and plays an essential role in expressing group identity (Rosenfeld & Tomiyama, 2019). As group affiliations and social identity processes are connected to follow group social norms (Hogg, 2016), social norms affect eating behaviors (Olsen & Grunert, 2010; Stok et al., 2018; van Rongen et al., 2020).

Besides the role of groups and social norms on self-identity and self-concept previously discussed, the influence of social norms on food consumption has a role that

goes beyond food intake for survival purposes (Rozin, 2005). Eating behavior is a consequence of two interdependent functions: adaptive and social-personal (Neuman, 2019). Evolutionary and adaptive functions increase the influence of norms on behavior because group norms help guide selecting the correct type and quantity of food. Descriptive norms indicate what is normal by imitation and observation, explaining the greatest influence of descriptive norms on every type of dietary behavior (Bell & Holder, 2019).

Additionally, social-personal functions are important to social representations of personal and collective identities (Cheah et al., 2020). Also, it represents community belongingness, gastronomic, cultural, religious, and familiar traditions (Leroy & Praet, 2015; Rosenfeld & Tomiyama, 2019).

The complexity of eating behavior takes on another dimension concerning meat consumption. Meat intake was crucial in human evolution, proved essential for the evolution of physical and cognitive abilities (Milton, 1999). It is a high-quality nutritional food because of its nutrient density, highly satiating, and components that cannot be easily substituted (Leroy & Barnard, 2020). Also, eating meat has social and cultural importance: the omnivorous diet is the social norm in most societies (Macdiarmid et al., 2016; Soule & Sekhon, 2019).

As a current norm, meat has a “nutritional, sensory, and cultural centerpiece of a meal”, called meat centrality (Bohm et al., 2015). Deviant meat-eating behaviors cause social reactions, which do not happen with other food items. For example, vegans suffer discrimination for not following standard eating behaviors, including vegaphobia and stigmatization (Markowski & Roxburgh, 2019; Plante et al., 2019; Vandermoere et al., 2019).

From a biological point of view, the human being is an omnivorous animal. However, despite the physiological ability to eat meat, people can make a personal choice whether or not to eat it. The literature describes the dietary patterns related to meat intake into categories that vary between authors. For example, Springmann et al. (2018) analyze four energy-balanced dietary patterns: flexitarian, pescatarian, vegetarian, and vegan, while de Gavelle et al. (2019) explores four dietary types: omnivores, pro-flexitarians, flexitarians, vegetarians. Soule and Sekhon (2019) suggest six categories, according to environmental, health, animal welfare motivations, and diet outcomes: omnivore conventional, meat-eaters concerned about animal welfare, flexitarian/reducitarian, pescatarian, vegetarian, and vegan.

De Backer and Hudders (2015) classified meat diet patterns into three categories: full-time meat-eaters, flexitarians, and vegetarians. Similarly, Apostolidis and McLeay (2019) identified three consumer groups: meat-eaters, meat reducers, and vegetarians. Randers et al. (2020) identify meat consumption patterns as consumption, reduction, or avoidance of meat. These three categories seem to cover the main categories of behavior related to meat consumption.

Besides attempting to classify meat consumption behavior into categories, Rosenfeld and Tomiyama (2019) suggest that the behavior is a continuum of vegetarian-to-omnivore rather than a dichotomy (Figure 3). One extreme of the continuum, the full-time meat-eaters, represents the current standard behavior in western societies and includes consumers that adopt an efficient behavior strategy of purchasing more sustainable meat (Apostolidis & McLeay, 2019). In the middle, reducers are people who eat meat with a conscious reduction in the amount consumed without abstaining from meat completely (Rosenfeld et al., 2019). The terms flexitarian and its cognate reducetarian or reducer are used in the academic literature to describe vegetarians who eventually eat meat and meat-eaters who deliberately consume less quantity and frequency or eat just some kind of meat (e.g., fish or chicken and not red meat) (Dagevos, 2021).

Figure 3 - Continuum of meat consumption pattern



Source: Adapted from Rosenfeld and Tomiyama (2019)

Finally, the other extreme encompasses people who do not eat meat, including different levels of restriction on consuming food of animal origin—vegetarians and vegans—(De Backer & Hudders, 2015). Diets free of or with reduced meat consumption have been linked to four principal motivations in this order of prevalence: animal welfare, health, sustainability and religious arguments (Plante et al., 2019; Soule & Sekhon, 2019). Also, they demand a replacement of the meat proteins, which is done by plant protein (De Boer et al., 2014). The substitution can be made by natural and unprocessed food (e.g., mushrooms, beans) or processed food. Among processed food, there are

products not designed to mimic meat (e.g., tofu) and others mimicking meat in flavor, taste, texture and appearance (e.g., meat-like burgers and sausages) (Santo et al., 2020).

Among the three categories of behavior related to meat consumption described, meat-eaters are the most frequent and current standards. Meat reducers are estimated at around 20-30% of the population in the United States (Rosenfeld et al., 2019) and Europe (Kemper & White, 2021). It is a growing category, with an increasing number of people report their intention to reduce or even stop meat consumption (Apostolidis & McLeay, 2019). In Brazil, approximately 8% of the population calls itself vegetarian (Ibope, 2018), a pattern similar to other countries where vegetarians are around 5-10% (Apostolidis & McLeay, 2019; Bryant, 2019; Rothgerber & Rosenfeld, 2021).

4.4. Controversy and ambiguity in meat consumption: the “perfect environment” to normative conflict

Among food, meat is considered a “villain” of sustainability. From an environmental point of view, its production process results in high levels of greenhouse gas emissions compared to other food categories, in addition to extensive use of bluewater, land, and energy (Clune et al., 2017; Poore & Nemecek, 2018). The world population is growing, and the planet has limited resources to produce the necessary food. Animal-source food provides around 40% of the world’s proteins (Parodi et al., 2018), and the demand for meat is directly related to socioeconomic conditions. Thus, the sum of the growing population and the improvement of socioeconomic and nutritional conditions worldwide imposes a challenge. Scientific research consistently points to a higher effect of meat on a hierarchy of greenhouse gas emissions when compared to other food categories (Clune et al., 2017; Poore & Nemecek, 2018).

Furthermore, in many countries, forests and protected natural ecosystems that are essential for biodiversity are being destroyed through deforestation and fires to use the land for cattle raising and planting soy and crops for food for confined animals (Hoelle, 2017). From a social dimension, many production systems of scale fail to provide animals during their life cycle with minimum conditions of welfare, especially in confinement systems (Vale et al., 2019); workers in the meat industry, especially in slaughterhouses, are exposed to longer-term psychological effects of animal killing, such as mental health disorders and violence-supportive attitudes (Slade & Alleyne, 2021).

Nevertheless, research also indicates that the environmental effects of sustainable diets are context-specific (Springmann et al., 2018), raising a question about the actual

benefits of substitutions for health and the environment (Laroche et al., 2020). For example, in Brazil, beef cattle production developed on a large diversity of soils and biomes, such as Pampa and Pantanal, supports different cattle breeds, production activity levels, technologies, and systems (intensive, semi-intensive, and extensive) (Lobato et al., 2014). In some Brazilian biomes, beef cattle ranching is aggressive to the environment, leading to deforestation and biodiversity loss (Hoelle, 2017). However, Moreira et al. (2020) study of habitat modification and biodiversity loss suggests that extensive cattle grazing over wide native pastures in Brazilian Pampa is more effective in biome conservation than intensive short-term crops—that is, growing grain for consumption.

The ambiguity is repeated in the health field, and both positive and negative outcomes are described. Despite the intake of animal foods is linked to the incidence of chronic diseases like cancer, cardiovascular disease, Alzheimer's disease, overweight, and diabetes (Barnard & Leroy, 2020a), some authors argue that this causal relationship should not be directly linked to meat. For example, vegetarians differ from meat-eaters in various other health-related behaviors besides the amount of meat consumed that can cause diseases: smoking, physical activity, alcohol consumption, and processed food intake (Leroy & Barnard, 2020). Dietary choices such as the excessive intake of nutrient-poor and highly processed foods (e.g., sugar-sweetened beverages, junk food, refined carbohydrates) would be more damaging than meat intake (Leroy & Barnard, 2020; Leroy & Cofnas, 2020).

Another controversy related to meat substitution by plant protein concerns the environmental effects of the replacement choices. There seems to be an alignment in the academy that plant-based diets have less environmental impact than diets with high meat consumption. Meat substitution by mimetic products is a growing market in Western countries (Gehring et al., 2020). Some of them are considered ultra-processed food, and their ingredients can have significant adverse environmental and health impacts associated (Seferidi et al., 2020). Considering that there is limited research on nutrition, chronic disease, and food safety implications associated with consuming industrialized meat alternatives, the benefits of meat substitution for ultra-processed food are controversial (Santo et al., 2020).

All this information regarding the impact of the production of animal products has scientific support and generates a clear “anti-meat agenda” in the sense of reducing meat consumption in diets, especially in developed countries (de Boer & Aiking, 2022). The indications of the Eat-Lancet Commission (Willett et al., 2019) and FAO/UN (World Health Organization, 2020) are examples. In other words, those in a socioeconomic

situation to choose their diet should replace animal products with plant-based options. This information has been released in newspapers (e.g., Peralta, 2021), social media, and publicly endorsed by celebrities— as the actor Joaquin Phoenix eating a vegan burger after winning the Oscar in 2020 and the singer Billie Eilish advocating for more plant-based meals in schools—generating a social trend of reducing meat consumption.

This scenario presents some challenges for consumers. Besides all impacts, meat is a central food in the Western diet, with nutritional, cultural, symbolic, and social importance. It is on national dietary guides (Vale et al., 2019) and it is largely appreciated due to its nutritional characteristics, pleasure (taste and satiety), and symbolism (e.g., status, masculinity, wealth) (Dagevos, 2021; De Backer et al., 2020). Thus, meat consumption has a biosocial complexity and a paradoxical status in actual society (Leroy, 2019). Eating meat is the prevailing social norm—that is, it is normal, usual, and expected behavior in most societies (Soule & Sekhon, 2019). However, at the same time, emerging trends and collective behavioral changes result in new social norms (see Boenke et al., 2022; Sparkman et al., 2020), conflicting with the current norms.

On the consumer side, ambiguity is expressed by cognitive and behavioral manifestations. For example, despite negative attitudes about meat intake (Vandermoere et al., 2019) and a crescent intention to reduce meat consumption (Apostolidis & McLeay, 2019), few attitudes have effectively changed eating patterns. Macdiarmid et al. (2016) affirm that meat-eaters face the meat paradox: although they have negative attitudes about eating meat, they are unwilling to change their habits. In fact, the meat paradox is considered a behavioral ambivalence (Buttler & Walther, 2018)

This belief–behavior inconsistency can be explained by meat-related cognitive dissonance. To naturalize meat intake, consumers apply perceptual strategies such as third-part blame, denying the animal mind, and dichotomization (Rothgerber & Rosenfeld, 2021). Another strategy endorsed by omnivores is rationalizing the consumption by the natural, normal, necessary, and nice justification, known as the 4 Ns (Piazza et al., 2015). Regarding the justification of being “normal”, it refers to “what most people in civilized society do and what most people expect from us” (Piazza et al., 2015, p. 115), and it is linked to dominant social norms in society.

According to Piazza et al. (2015), the justification for being “natural” is based on biology: meat intake was crucial in human evolution and its nutritional value was essential for human physical and cognitive abilities evolution. The “necessary” category, on the other hand, is arguments that rely on the need to eat meat for broad reasons, such as survival, strength, health, and animal population control, among others (e.g., “Human

beings need meat to survive”). Finally, eaters justify that eating meat is “nice”, referring to the taste and its capacity for satiety or fulfillment.

4.5. Summary of the theoretical background

We present the theoretical basis of the thesis: the *Social Identity Theory* (Tajfel & Turner, 1979) and the *Focus Theory of Normative Conduct* (Cialdini et al., 1990). The theoretical gap identified is the effect of *conflict between the social norms of different relevant groups*. Thus, we discuss the concept of *self-identity* and *social norms* to justify our understanding of the normative conflict. *We systematized the types of possible normative conflicts* and explored their possible effects on behavior. We also seek to understand the *complexity of eating behavior* and, consequently, why *social norms are relevant in meat consumption*. Finally, we explain the *controversial and ambiguous context surrounding meat consumption* nowadays, which, in our view, exposes individuals to *normative conflicts that affect their consumption behavior*.

Next, we present the studies that make up the thesis.

5. STUDIES

5.1. Overview of the current studies

To achieve the objectives, two studies were conducted. First, a systematic literature review, with the objective of providing data and information related to past research in meat consumption and social norms. The systematic review is an appropriate strategy because it summarizes previous knowledge exploring primary empirical sources in an orderly manner, following a predefined protocol (Paré et al., 2015). Also, it is recommended to acquire knowledge of different theoretical and methodological approaches in a specific research area, explore variables and also consider them in future research, and suggest further research questions (Bryman, 2016).

In this stage, we identified interpretable patterns in the field, including theories, methodologies, geographic focus, year of publication, samples, and variables. Based on these findings, we highlighted research opportunities associated with theoretical, methodological, and contextual dimensions. We proposed seven topics for future research applying social norms to reduce meat consumption.

After, based on these opportunities and the literature review chapter, we structured the empiric data collection with consumers. Empirical data was collected by applying an exploratory and sequential mixed method approach (Bryman, 2016; Cruz-Cárdenas et al., 2016), with a two-stage research strategy. We combined qualitative and quantitative data collection techniques to enable data triangulation and the convergence of evidence, reinforcing the validity and reliability of the study (Yin, 2001; Bryman, 2016). The steps of the empirical research were as follows:

Stage 1 - Qualitative research: In this stage, to deep the understanding of the theory and the context of meat consumption, qualitative research was conducted. This approach is indicated to describe details of the causal mechanism or process for a narrow set of cases (Bryman, 2016). As there were no previous studies on the subject, we chose to conduct in-depth interviews to understand whether and how the conflict between social norms of different groups affects meat consumption behavior. In addition to the field exploration, this stage allowed the proposition of the theoretical model and the elaboration of the hypotheses that were tested in the experimental stage.

Stage 2 – Experimental research: In this phase, we identified the effect of the conflict of social norms of different groups on meat consumption behavior and tested the moderation relationships proposed in the theoretical model. We chose experiments as a

methodological approach because of previous research described gap between self-reported behavior and real behavior (Wenzig & Gruchmann, 2018). As surveys, generally, access self-report behaviors, experimental designs are indicated to access actual behavior (Van der Werff et al., 2013). The design proposed is the choice experiment, characterized by high external validity and reduced respondent's hypothetical biases, revealing actual behavior (Apostolidis & McLeay, 2019).

Table 1 demonstrates how each stage of the research is related to the general and specific objectives of the thesis and the research question.

Table 1 - Summary of the methodological procedures and their connection with the thesis-specific goals

Thesis goals	Method	Sources	Sample	Analysis approach
To identify previous empirical research on the area and research gaps regarding the effect of social norms on food and meat consumption behavior	Systematic literature review	Peer-reviewed papers	44 papers	Descriptive
To identify and describe the effect of social norms conflicts in consumption behavior	In-deep interview	Consumers	13 participants	Thematic analysis
	Laboratory experiment	Beef consumers	267 participants	T test, ANOVA Spotlight
To verify if pro-environmental self-identity and self-transcendence moderate the relationship between conflict of social norms of different groups in the intention of meat consumption intention				

Source: the author

In the next section, we will present the systematic review study.

5.2. Study 1: Systematic Review

5.2.1. Methodological procedures

To explore the theme, we started with an exploratory search by collecting papers in Google Scholar, ISI Web of Science, and Scopus databases in 2020 and 2021. The goal was *to identify the extent of the existing knowledge on conflicting social norms of different groups and food consumption*. The snowball technique was used to search the references of the articles reviewed in these steps. The search covered keywords related to social norms (including norms, norm, normative, injunctive, descriptive) and conflict (including misalignment, discrepancy, divergent, incompatible, disparity, ambiguity, ambivalence,

conflict, dissonance, identity-related conflict, identity conflict, and its variants). We also included filter keywords related to consumption (consumer, consumer behavior, consumption) and food (food, meat, beef, drink, beverage).

We found articles related to both intragroup and intergroup norms misalignment. Selecting the studies related to the conflict of social norms between/among groups, only four papers remained: Cail and LaBrie (2010) and McDonald et al. (2013, 2014a, 2014b). Table 2 presents a summary of the research.

Cail and LaBrie (2010) surveyed the effect of the disparity between injunctive norms of parents and closest friends (peers) on the alcohol consumption behavior of college students. According to the results, when parental and peer norms were misaligned, males were likelier to choose peers' norms associated with higher alcohol consumption. There was also a difference in the effect of disparity on gender: males and females drank similarly at low levels of disparity, but it increased alcohol consumption in males at high levels.

The other three papers investigated pro-environmental behavior. McDonald et al. (2013) aimed to explore the effect of conflicting descriptive norms from multiple relevant groups on pro-environmental behavioral intentions. The proposed mediated-moderation model presents norm conflict as the independent variable, behavioral intentions as the dependent variable, pro-environmental attitudes as the moderator, and perceived effectiveness as the mediator. The authors conducted three studies, and there was an alignment among results, suggesting that "conflict among the norms of multiple ingroups has consequences for behavioral decision-making" (McDonald et al., 2013, p. 68). There was consistency in the pattern of results across the three studies. The effect of norm conflict was verified as both energizing and demotivating behavior moderated by attitudes. The mediator effect of perceived effectiveness on behavioral intentions was demonstrated only in high perceived effectiveness. Individuals with high perceived effectiveness and positive pro-environmental attitudes have increased pro-environmental behavioral intentions by norm conflict; individuals with high perceived effectiveness and negative attitudes had lower behavior intentions.

McDonald et al. (2014a) examined the influence of descriptive norm conflict on pro-environmental intentions and behavior (water-saving), considering perceived effectiveness as a mediator. The authors hypothesized two competing effects of norm conflict: motivating or demotivating. The general results demonstrated a motivating effect of norm conflict on intentions and behavior, mediated by perceived effectiveness.

Table 2 - Main characteristics of the previous research on intergroup norm conflict

Paper	Behavioral domain	Type of norm	Method	Reference group	Sample	Demographic variables	Norm measure	Manipulation	Conflict measure	Dependent variable	Moderator	Mediator
Cail & LaBrie, 2010	Alcohol	Injunctive	Survey	Parents and peers	3.753 undergraduate students from the United States	age, sex, height, weight, race and ethnicity	Injunctive Norms Questionnaire (Baer, 1994); descriptive norms by estimative	-	Calculated from the absolute value of the difference scores between groups	Behavior	-	-
McDonald, Fielding and Louis, 2013	Pro-environmental	Descriptive	Experiments, 3 studies	Study 1: family members, fellow studies, and people with the same nationality (Australians); Study 2 and 3: friends, family, and peers/colleagues	Study 1 and 2: 157 and 113 (respectively) undergraduate students from Australia; Study 3: 138 nonstudent adults from India	Gender (control)	Study 1: by estimative; Study 2 and 3: manipulation directly	Study 2 and 3: by a task	Study 1: calculated from the absolute value of the difference scores among the three groups	Behavioral intentions	Attitudes	Perceived effectiveness
McDonald, Fielding and Louis, 2014a	Pro-environmental	Descriptive	Experiments, 2 studies	Study 1: household and community; Study 2: family, friends and peer colleagues	Study 1: 1080 house owners in Australia; Study 2: 461 respondents, aged from 15 to 68, from Australia, UK and USA	age, gender, level of education, region of residence, number of household members, and household income	Study 1 e 2: By estimative	-	Studies 1 and 2: calculated from the absolute value of the difference scores among the three groups	Behavioral intentions; behavior	-	Perceived effectiveness
McDonald, Fielding and Louis, 2014b	Pro-environmental	Descriptive	Survey	friends, neighbors, the local community	57 participants, Australia	-	By estimative	-	from the absolute value of the difference scores among the three groups	Behavioral intentions	Attitudes	-

Source: the author

Increased norm conflict was associated with increased perceptions of effectiveness and intentions to engage in the target behaviors.

McDonald et al. (2014b) studied the behavioral intentions related to environmental conservation, using attitudes as moderators. The results demonstrated that the conflict among social norms affects behavior intentions, and the moderation role of attitudes was weak: for individuals with less positive attitudes, norm conflict was associated with marginally lower intentions to engage in the target behavior; for individuals with more positive attitudes, norm conflict did not affect behavioral intentions.

The limited number of papers found reinforces the perception that the research problem chosen is a theoretical gap that has been scarcely explored. In addition, the amount of research found was low, making it impossible to carry out a systematic analysis. Thus, we expanded the scope of the systematic review, excluding conflict as a limiting theme. Considering that one of the articles concerning normative conflicts was carried out in the context of alcohol consumption, it includes the consumption of alcoholic beverages (drink) in the search keywords and food.

We considered both food and drink consumption behavior because alcohol and food consumption behavior share some particularities: they often occur in social contexts (Higgs & Thomas, 2016; Padon et al., 2016), are strongly influenced by situational factors (Higgs, 2015; Oostveen et al., 1996; Sobal et al., 2014), and are affected by social norms (Lac & Donaldson, 2018; Liu et al., 2019; Mollen et al., 2013; Rimal & Real, 2005). Finally, there is an important *corpus* of research on alcohol consumption and social norms, which could bring new approaches and insights to research in the context of food.

Based on that, we refined the inclusion and exclusion criteria, databases, type of publication, and key works. The last search comprised papers from the ISI Web of Science (WoS) and Scopus database and was not restricted by date. ISI Web of Science is widely accepted and frequently used to analyze scientific publications (González-Serrano et al., 2020; Morioka & de Carvalho, 2016). Scopus was selected as the largest database of abstracts and citations reviewed by peers and its emphasis on social sciences (Bossle et al., 2016; Homrich et al., 2018).

The keywords were chosen to encompass theory (social norms), method (empirical quantitative), and domain (food and drink). We applied the terms *social norms*, *social norm*, *descriptive norm*, *injunctive norm*, *eating norm*, *group norm*, *mediator*, *moderator*, *variable*, *experiment*, *survey*, *quantitative*, *empirical*, *food*, *meat*, *beef*, *drink*, *beverage*, *consumption*, and *consumer*.

These terms were applied using Boolean operators OR and AND as a “topic” in WoS (encompassing title, abstract, and keywords). The exact search string was applied in Scopus for “article title, abstract, and keyword”. We selected a broad group of knowledge areas with a consolidated body of knowledge on social norms and behavior for a multidisciplinary approach, assuming that this diversity of areas expands theoretical and knowledge perspectives. Considering the interdisciplinarity of the concept and manifestation of social norms, this diversity contributes to various theories and approaches, enabling the development of the theory (Legros & Cislighi, 2020).

The final categories were: i) in WoS: Substance Abuse, Sociology, Anthropology, Nutrition Dietetics, Psychology Applied, Psychology, Environmental Science, Ethics, Psychology Multidisciplinary, Business, Environmental Studies, Food Science Technology, Social Sciences Interdisciplinary, Green Sustainable Science Technology, Management, Communication, Behavioral Sciences, Economics, Ecology, Social Issues, Multidisciplinary Sciences, Psychology Social; ii) in Scopus: Medicine, Nursing, Psychology, Social Sciences, Pharmacology, Toxicology, and Pharmaceutics; Business, Management, and Accounting; Environmental Science; Economics, Econometrics, and Finance.

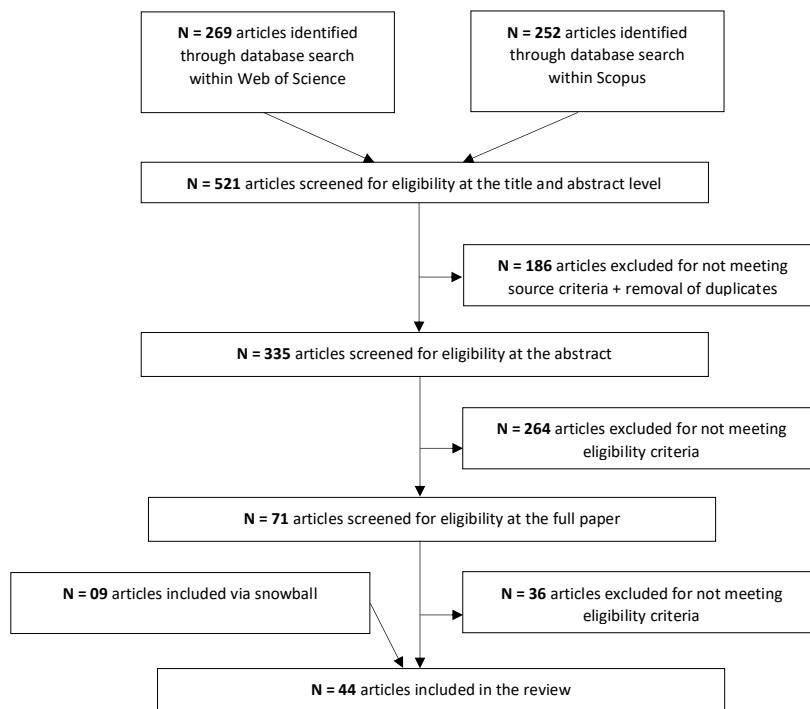
Our search yielded 521 papers (WoS, $n=269$; Scopus, $n=252$), and 98 duplicates were excluded. We have limited the review to journals that met one of the following criteria: being included in the Association of Business Schools (ABS) list or with a Scopus Cite score of 2 and above, or a Social Science Citation Index score of 1 and above (Rosado-Serrano et al., 2018). The application of source criteria resulted in the exclusion of 88 papers.

The inclusion criteria were papers i) peer-reviewed; ii) available in English; iii) related to consumer behavior; iv) that investigated social norms’ influences on food and/or drink consumption; v) that empirically investigated the effect on consumer behavior or intent; vi) with quantitative method research and vii) studying social norm as an independent variable. We have excluded literature reviews and papers focusing on children’s behavior exclusively because of the development specificities of this life phase and people in some conditions that could influence food or drink intake (i.e., pregnancy). We also have excluded papers that test social norms as a moderator or mediator construct. I opted to include alcohol consumption in the scope, considering the consolidated body of research in the area.

I screened the abstract of 335 remaining papers for relevance and to assess which met the inclusion criteria. Full papers were consulted when the abstract did not meet the inclusion or exclusion criteria. 264 papers were excluded, resulting in 71 articles being thoroughly read. After reading, 36 were excluded. Finally, 35 full papers remained. I applied a snowball method

to track other references, and after reading, we included 09 papers that matched all the protocol criteria. Figure 4 demonstrates the systematic review process.

Figure 4 - Systematic review process



Source: the author

Our final sample was 44 papers (Table 3). The paper's analysis was guided by categories previously defined and aligned with the review's primary objective. The categories were: authors, title, journal, year of publication, author affiliation, and department, data collection country, type of norm studied, lens theory, research objective, type of food or drink, if studied behavior or intentions or both, mediators, moderators, demographic control variables, scales and measures, method, sample characteristics, benefits to the participants, mainly results and agendas to future researches on the social norm.

Table 3 - Articles included in this review

Journal	Articles	References
Addictive Behaviors	7	(Cail & LaBrie, 2010; Dumas et al., 2019; LaBrie et al., 2012; Lac & Donaldson, 2018; Maddock & Glanz, 2005; Oostveen et al., 1996; Tahaney & Palfai, 2018)
Appetite	6	(L. K. Hawkins et al., 2020; Howland et al., 2012; Lally et al., 2011; Mollen et al., 2013; Nix & Wengreen, 2017; Wengreen et al., 2017)
Health Communication	6	(Brannon, 2021; Real & Rimal, 2007; Rimal, 2008; S. W. Smith et al., 2020; Thompson et al., 2020; Yang & Nan, 2019; Yun & Silk, 2011)
Psychology of Addictive Behaviors	3	(Litt et al., 2012; Neighbors et al., 2010, 2011)
Communication Research	2	(Lapinski et al., 2017; Rimal & Real, 2005)
Health Psychology	2	(Baker et al., 2003; Rice & Klein, 2019)
Journal of Studies on Alcohol and Drugs	2	(Jackson et al., 2014; Lee et al., 2007)
American Journal of Health Behavior	1	(Pelletier et al., 2014)
Basic and Applied Social Psychology	1	(Rosas et al., 2017)
British Food Journal	1	(Golob et al., 2018)
British Journal of Health Psychology	1	(Stok et al., 2014)
Communication Theory	1	(Rimal & Real, 2003)
European Journal of Marketing	1	(Olsen & Grunert, 2010)
International Journal of Behavioral Nutrition and Physical Activity	1	(Bevelander et al., 2020)
Journal of Applied Social Psychology	2	(Staunton et al., 2014)
Journal of Experimental Social Psychology	1	(Liu et al., 2019)
Journal of Health Communication	1	(Padon et al., 2016)
Journal of the American College Health Association	1	(Licciardone, 2003)
Organization and Environment	1	(Salmivaara & Lankoski, 2019)
Preventive Medicine	1	(Croker et al., 2009)
Psychological Science	1	(Sparkman & Walton, 2017)
Sustainability	1	(Wenzig & Gruchmann, 2018)
Technological Forecasting and Social Change	1	(Hynes & Wilson, 2016)
Total number of journal articles	44	from 23 journals

Source: the author

5.2.2. Results

The reviewed articles allowed the identification of general information from the research, context of the study, and related to the studied theory, which is presented below.

The researches were carried out predominantly in North America (68%). The United States, The Netherlands, and United Kingdom are the countries with the largest number of

studies. The other continents were Europe (30%) and Oceania (2%). None of the studies were conducted with a Latin American or Asian sample.

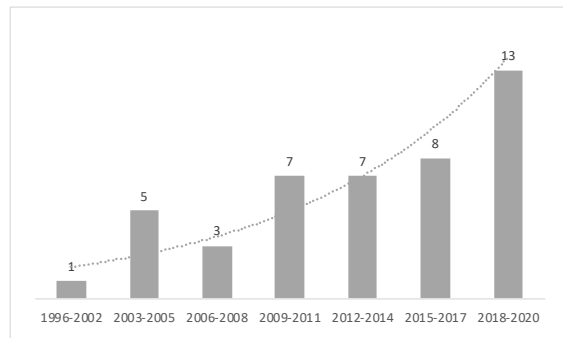
Table 4 - Countries where the research was carried out

Continent	Country	Quantity
Oceania	Australia	1
Europe	Finland	1
	Germany	1
	Norway	1
	Slovenia	3
	The Netherlands	5
	United Kingdom	1
	North America	United States
	Canada	1
Total: 44 research in 8 different countries from 3 continents		

Source: the author

The papers reviewed were published between 1996 and 2020. 70% of our sample are papers published in the last ten years ($n=31$), and it is noted that an increase in publications in the last five years: 45% were published from 2016 to 2020 ($n=20$).

Figure 5 - Distribution of the papers included in the systematic review per 3-year interval



Source: the author

The papers could be classified into two broad categories. The first focus on theory-related objectives and hypotheses, using food and beverages as the study context. Some of these papers reported more than one study, including other behaviors unrelated to food or drink intake (e.g., physical activity, sedentary behavior, recycling). The second category encompasses studies whose primary focus was food and/or sustainable consumption and risky behavior, seeking in the application of theory a solution to problems related to these themes.

Regarding the social norms-related theories, I was able to identify the theoretical perspective in 20 papers. Table 5 systematizes the theories related to social norms that supported the investigations.

Table 5 - Theoretical perspective related to social norms that supported the investigations

Theory	Summary	Paper
Focus Theory of Normative Conduct (Cialdini et al., 1991)	Social norms are negotiated rules and patterns to regulate social behaviors communicated and understood by members of a specific group. There are two types of social norms: descriptive and injunctive.	Hawkins et al. (2020); Jackson et al. (2014); Rosas et al.(2017); Salmivaara and Lankoski (2019); Smith et al. (2020); Sparkman and Walton (2017); Yang and Nan (2019)
Theory of normative social behavior (TNSB) (Rimal & Real, 2005)	There are two types of norms: descriptive and injunctive. Descriptive norms refer to people's perceptions about the prevalence of behavior and affect individuals' behaviors. Three normative mechanisms moderate the effect of descriptive norms on behavior: injunctive norms, outcome expectations, and group identity.	Lapinski et al. (2017); Padon et al. (2016); Real and Rimal (2007); Rimal (2008); Rimal and Real (2005); Yun and Silk (2011)
Social norm approach/theory (Perkins & Berkowitz, 1986; Berkowitz, 2004)	There is a misperception between perceived norms (what we think our peers believe) and actual norms (what they believe and how they act). Interventions on social norms should correct this misperception.	Lac and Donaldson (2018); Smith et al. (2020)
Theory of planned behavior (TPB) (Ajzen, 1991)	Attitudes, subjective norms, and perceived behavioral control predict an individual's intention to engage in a specific behavior, which is the most proximal determinant of actual behavior.	Baker et al. (2003); Hynes and Wilson (2016); Staunton et al. (2014)
Extended norm taxonomy (Thøgersen, 2006)	Norms are assumed to form a continuum of increasing levels of internalization and integration into the self, from individual internal to external levels. Descriptive norms are more external, while injunctive norms are more internal and encompass subjective and personal norms (introjected and integrated).	Wenzig and Gruchmann (2018); Hynes and Wilson (2016)

Source: the author

Social norms can be descriptive or injunctive, or even dynamics. The papers explored descriptive and injunctive norms ($n=20$), just descriptive ($n=13$) or injunctive ($n=4$) norms, or did not make a distinction between the type of norms, just calling "social norms" ($n=7$). One paper address dynamic norms (Sparkman & Walton, 2017).

A diversity of reference groups used in the analyzed studies were identified. The type of group used in the manipulation seems to depend on the type of sample and objective of the study. The findings were aggregated into categories, as shown in Table 6.

Table 6 - Reference groups identified in the review

Category	Examples
Other students	Students from the same university or school; classmates
Family	Just parents; parents, brothers and sisters
Geographic proximity	People living in the same country or neighborhood
General	“Peers”; “people of the same age”; “significant others”; “people that are important to me”

Source: the author

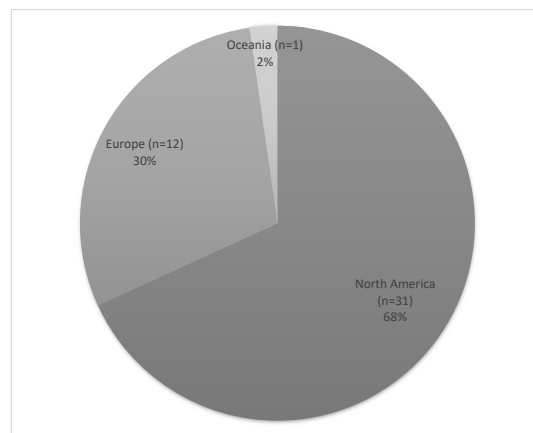
Regarding the type of behaviors, food, and drink, the analyzed research focus on studying healthy behaviors in general (including diet and exercise), unhealthy behaviors, risk behaviors, healthy eating, dietary decisions, and sustainable consumption. The papers investigated a range of food and drink types: alcohol, sugar-sweetened beverages, fruits and vegetables, fast food, junk food, meat, fish, and healthy, unhealthy, local, ethical, environmentally friendly, and organic food. Alcohol ($n=22$) and fruit and/or vegetables ($n=11$) were the research's most frequently used types of products. The meat was studied in one research (Sparkman & Walton, 2017).

The analyzed papers present a predominance of surveys ($n=29$), using both cross-sectional ($n=24$) and longitudinal strategies ($n=5$). Experiments were also frequent in our sample ($n=11$), carried out in the laboratory ($n=7$), field ($n=3$), and laboratory and field ($n=1$). Other methods were secondary data analysis ($n=2$) and a multimethod research design ($n=2$).

The paper's data collection was primarily based on self-report instruments using scales from previous studies. To stimulate participation, incentives were offered in more than half of the studies ($n=25$). Gift cards, money, small rewards (e.g., snacks), and course credits are examples of incentives. The panels provided by established research agencies such as Amazon's Mechanical Turk (Mturk) and GfK Custom Research pre-recruited panel (KnowledgePanel) were used (Golob et al., 2018; Padon et al., 2016; Sparkman & Walton, 2017).

The findings indicated that the samples comprised people from 13 to 77 years old. The participants were primarily undergraduate students. Sample sizes varied between studies: 2 studies used samples smaller than 100 respondents; 26 studies used samples from 101 to 500 respondents; in 8 studies, the sample had 501 to 1.000 respondents, and 14 reported samples larger than 1.001 respondents. The total sum exceeds 44 studies as some papers reported more than 1 study and, therefore, more than 1 sample.

Figure 6 - Type of sample



Note: Undergraduate students ($n=28$); General ($n=7$); Youth ($n=7$), Other ($n=2$). Youths are adolescents and people between 13 and 29 years old; General is people between 16 and 65 years old; Others encompass studies that used a sample of adolescents and their parents or just parents.

Source: the author

A multiplicity of control variables were found. The most frequently used, in different study contexts, were sex/gender ($n=37$), age ($n=30$) and ethnicity (race/white or non-white; $n=20$). It was noted that some control variables are linked to the type of food or drink studied. For example, studies of the effect of social norms on food control for variables such as height and weight, body mass index, minutes of exercise per week, and meat intake pattern (vegetarian/not vegetarian). In alcohol consumption, geek status, class standing, prior alcohol use, age of the first drink, parental drinking, gender, and living on or off campus are some variables that predict alcohol consumption.

5.2.3. Discussion

The results indicated a prominence of investigations carried out in the United States, using the Focus Theory of Normative Conduct as theoretical lens and with undergraduate students. The reviewed literature evidenced the predominance of investigations carried out in North America (especially in the United States) and Europe, demonstrating a lack of studies in countries with diverse contexts. This finding is aligned with Shulman's et al. (2017) review of social norm research in the social sciences. They found that research-based in the United States was the most common (>50% of the papers), followed by the United Kingdom and The Netherlands. Our results demonstrated the same pattern. The social environment is essential to self-concept (Oyserman, 2009a), self-categorization (Abrams & Hogg, 1990), social identity

and group affiliation (Hogg, 2016), and, consequently, social norms. Studies in another socio-economic-cultural context may reveal specificities and enrich and evolve the social norm's theory.

In the last five years, there has been an increase in publications in the field and related to the food domain. Initially applied to interventions related to alcohol consumption, the study of the effect of social norms on intention and eating behavior seems to be gaining ground in the face of social and environmental demands for changes in diet. Among foods, healthy versus unhealthy food studies were prevalent in the sample, reinforcing this perception.

The results reinforce the cross-disciplinary approach to social norms research proposed by Legros and Cislighi (2020). We found investigations published in diverse areas, such as Psychology, Marketing, Health/Medicine, Communication, and Sustainability/Environment. Consequently, several theories and approaches are expected, sometimes conflicting (Legros & Cislighi, 2020).

We were able to identify a variety of theories applied to social norms studies. The Focus Theory of Normative Conduct was the most cited and frequently used in the literature reviewed and applied to a broad range of behaviors. All the theories identified have in common the differentiation between descriptive and injunctive norms. Several authors argue that the conceptual distinction between the types of norms is essential, as each is a distinct construct with a different effect on behavior (Lee et al., 2007; Rimal & Real, 2003; Staunton et al., 2014). For example, the TNSB considers descriptive norm as the independent variable and injunctive norm as moderating variable (Rimal & Real, 2003, 2005).

Our search strategy sought research in which social norms were the independent variable. Thus, we filtered the results, excluded most papers that used the TPB and just analyzed research on extended theory models. TPB is widely used in studies on consumer behavior and considers injunctive norms as moderating variable (Hassan et al., 2016). However, according to (Shulman et al., 2017), the extensive use of TPB "reflects the field's focus on using social norm theories rather than theorizing about social norms or advancing social norms theories" (p.11).

Our results suggest that undergraduate students are the most frequent sample in the studies, which can be explained because this cohort consumes more alcohol than others and are particularly vulnerable to drinking (Rimal, 2008). Also, young adulthood is a unique developmental period during which many health behaviors are formed (Pelletier et al., 2014), and alcohol use is the most critical risk factor in productive life loss among those ages 15–29 (World Health Organization, 2019).

Despite the relevance of investigation and intervention on students and youths, investigating other cohorts can be important in the food domain. Considering the global trend of population aging and the lesser effect of social norms on the behavior of older people (Eker et al., 2019), studies focusing on adults and the elderly can collaborate with the advancement of the theory and the development of behavioral interventions with a more comprehensive effect. Among the control variables described as predictors of behavior in previous studies, sorority/fraternity affiliation, place of residence (living on or out campus), and educational level are directly linked to the sample type. Gender, age, ethnicity, and socioeconomic status are also identified as predictors, reinforcing the importance of diversifying the sample type.

Due to the predominance of studies with university students, the reference groups used in the interventions are generally peers or other students. Some studies explore the family (primarily parents) as a reference group. Reference group plays a central role in the social norm influence because norm adherence is related to the degree of identification with the group (Goldstein et al., 2008). Group identification is influenced by perceived similarity (Rimal et al., 2005), the group's meaningfulness to the individual (Goldstein et al., 2008), affinity and desire to connect with a reference group, and the importance of the group for the self-concept (Lapinski & Rimal, 2005). Stronger group identification implies greater adherence to the social norms of the group (Hirsh & Kang, 2016) and, consequently, greater engagement with norm-related behaviors (Lapinski & Rimal, 2005).

Considering that the importance of others students and family can decrease in adulthood, diverse reference groups could be explored in future studies. Questioning the respondents who are their reference group can be a strategy for identifying essential groups (and consequently, norms) that influence his/her behavior. Another critical issue is the group's proximity. We have identified in this review differences between proximal and distal groups' norms affecting consumption intentions and behavior (Jackson et al., 2014; Lac & Donaldson, 2018; Maddock & Glanz, 2005; Yun & Silk, 2011). The results indicated that the closer the group is, the stronger the effect of the norm. Thus, we recommend that future studies pay special attention to the reference group used in the manipulation, specifically concerning i) verifying the actual relevance to the participant and ii) proximity.

The results suggest that surveys based on self-report instruments using scales from previous studies are the most frequent methodological strategy in the analyzed studies, commonly based on undergraduate student samples.

5.2.4. Opportunities to further research on reduction meat consumption

We have identified some aspects for further research. The insights are related to underexplored topics and can potentially collaborate with Social Norms Theory, methodology, and meat consumption context.

a) Theoretical insights

Explore norm misperception. The misperception of the norm is a phenomenon explored in alcohol consumption studies and is still poorly investigated in the food domain. It refers to the overestimation of the peer drink norms and is the base of the Social Norm Theory (Perkins & Berkowitz, 1986). According to Dumas et al. (2019), prior research has consistently found the misperception of the drinking norm by university students, which is associated with heightened alcohol consumption, heavy drinking, and related negative consequences. The other's behavior is magnified, and the norm is perceived with a bias, influencing behavior. Misperception of the social norms was found in studies in both alcohol and dietary domain (Lally et al., 2011). However, our review identified few studies exploring this theoretical phenomenon in the context of food. Interventions to correct these misperceptions can reduce drinking (Padon et al., 2016), giving room for further investigation to reduce meat and other foods for which reduced consumption is indicated.

The complexity of social environment: disparity, misalignment, or conflict of social norms. Social norms may not always be congruent with each other. In multidimensional choices – such as sustainable food, involving the same time eating and sustainable-related factors – injunctive or descriptive norms within one in-group can even be opposed (Salmivaara & Lankoski, 2019). Another situation is the disparity or conflict of social norms from different groups that the person identified, as investigated by Cail & LaBrie (2010). Their findings indicated a significant association of disparity in norms between peers and family, individual consumption, and negative consequences related to alcohol. The effect of simultaneous activation of misalignment norms, either within or between groups, on meat consumption behavior has not yet been studied and may reveal novelties and opportunities for interventions.

b) Methodological insights

Diversification of samples. Examining other cohorts can be important in the food domain despite the relevance of investigation and intervention on students and youths. Considering the global trend of population aging and the lesser effect of social norms on the behavior of older people (Eker et al., 2019), studies focusing on adults and the elderly can collaborate with the advancement of the theory and the development of behavioral interventions with a more comprehensive effect. Among the control variables found, predictors of behavior in previous studies, sorority/fraternity affiliation, place of residence (living on or out campus), and educational level are directly linked to the sample type. Gender, age, ethnicity, and socioeconomic status are also predictors, reinforcing the importance of diversifying the sample type.

Attention to the reference group. Due to the predominance of studies with university students, the reference groups used in the interventions are generally peers or other students. Some studies explore the family (primarily parents) as a reference group. Reference group plays a central role in the social norm influence because norm adherence is related to the degree of identification with the group (Goldstein et al., 2008). Considering that the importance of other students and family can decrease in adulthood, diverse reference groups could be explored in future studies. Questioning the respondents who are their reference group can be a strategy for identifying essential groups (and consequently, norms) that influence their behavior.

Another critical issue is the group's proximity. We have identified in this review differences between proximal and distal groups' norms affecting consumption intentions and behavior (Jackson et al., 2014; Lac & Donaldson, 2018; Maddock & Glanz, 2005; Yun & Silk, 2011). The results indicated that the closer the group is, the stronger the effect of the norm. Thus, we recommend that future studies pay special attention to the reference group used in the manipulation, specifically concerning i) verifying the real group relevance to the participant and ii) proximity.

Interestingly, the concept of proximity can apply to groups in digital environments, and this seems to have not been explored so far in studies related to social norms. Social media plays a central role in today's life, reinforced recently by restrictions on mobility and social relationships due to the Covid-19 pandemic. This opens up doors for exploring groups related to social media (i.e., Instagram) and online communication tools (i.e., Whatsapp, Telegram) and their influences on social norms.

Search for actual behavior. Most of the research reviewed in our work were self-reported surveys. However, it must be considered that there is a gap between self-reported behavior and actual behavior (Wenzig & Gruchmann, 2018). Besides, attitude-behavior gaps

were observed in purchasing sustainable food products (Vermeir & Verbeke, 2006) and meat intake (Macdiarmid et al., 2016). Therefore, experimental designs are indicated to access actual behavior (Van der Werff et al., 2013).

Experiments conducted in the field or with actual behavior are challenging and sometimes “messiness”, exposure to contamination, and lack of control of unforeseen environmental cues (Salmivaara & Lankoski, 2019). However, examining real-life conditions increases the external validity of finding (Mollen et al., 2013) and is recommended to deepen understanding of the effects of norms on behavior (Yang & Nan, 2019).

c) Contextual insights

Understand the “social” by a more amplified geographical scope. We found a predominance of investigations on developed countries, mainly the United States. It suggests that there is room to diversify the geographic focus, seeking to cover more diverse societies, habits, and cultures. The social environment is essential to self-concept (Oyserman, 2009), self-categorization (Abrams & Hogg, 1990), social identity and group affiliation (Hogg, 2016), and, consequently, social norms. Studies in another socio-economic-cultural context may reveal specificities and enrich and evolve the social norm’s theory.

Meat consumption is impregnated by symbolism, expressing group identity and social-cultural representations (Rosenfeld & Tomiyama, 2019; Roth, 2005). The Food and Agriculture Organization of the United Nations recommends culturally acceptable diets besides environmental, social, economic, and health factors (FAO, 2018). For example, it is important to investigate de meat consumption behavior in large national markets, such as Brazil, the third largest beef consumer worldwide (Borges et al., 2020). Therefore, it is important to consider the study context's social, economic, and cultural aspects in the context of food consumption research.

Next, we summarized the opportunities and proposed a set of research questions related to social norms and meat consumption to further investigation (Table 7).

Table 7 - Emerging research questions for future research on social norms and meat consumption

Dimension	Opportunities to research on meat consumption	Research questions to future studies
Theory	Exploring norm misperception	Do people overestimate the meat consumption of relevant others?
	The complexity of social environment: disparity, misalignment or conflict of social norms	Can conflicting social norms reduce meat consumption behavior?
Method	Diversification of samples	Do the influence of social norms meat consumption-related is equal through the different life-stages?
	Attention to the reference group	Which relevant groups exert the greatest influence on decisions about the quantity, type and frequency of meat consumption through social norms?
	Search for actual behavior	Are there differences between self-reported meat consumption behavior and this behavior in real-life conditions?
Context	Understand the “social” by a more amplified geographical scope	Does the social-economic-cultural context influence the effect of social norms on meat consumption behavior?

Source: the author

5.2.5. Main findings

The systematic review explored the empirical and quantitative research on social norms and consumer behavior in the food and drink domains. The results indicated a prominence of *investigations carried out in the United States, using the Focus Theory of Normative Conduct as lens theory and with undergraduate students*. In the last five years, we found an *increase in publications related to the food domain*. Initially applied to interventions related to alcohol consumption, the study of the effect of social norms on intention and eating behavior seems to be gaining ground in the face of social and environmental demands for changes in diet. Among foods, healthy versus unhealthy food studies were prevalent in our sample, reinforcing this perception.

5.3. Study 2: Empirical research

The systematic review provided valuable information that guided the methodological choices of the empirical stage. Besides exploring the disparity, and misalignment conflict of social norms, we considered in the empirical collection the following suggestions from the systematic review: diversification of samples, attention to the reference group, search for actual behavior, and amplification of the geographical sample scope.

As few quantitative studies on social norms and meat consumption were identified, it seemed relevant to carry out an exploratory data collection using in-deep interview technique, followed by a behavioral experiment. We managed to diversify the study sample, which was not restricted to undergraduate students. Both in the interviews and the experiment, the sample consisted of people of different genders, ages, households, and education. The greater variety in the respondents' profiles strengthens the findings' reliability.

We looked for the actual behavior of consumption through the experimental study. Due to a lack of financial resources, the study was carried out only in the laboratory, and it was impossible to carry out field studies. However, we tested the effect of conflicting social norms on behavior intention, which is a predictor of the behavior itself (Echegaray & Hansstein, 2017). The experimental study also considered the importance of group identification and relevance in the design and manipulation.

In addition, we sought to expand the geographic scope of data collection, conducting the study in Brazil. Brazil was chosen as the study primarily context of convenience, but also because the country's characteristics are suitable for the study. Livestock plays an essential role in the Brazilian economy: the country is currently one of the world's largest producers and exporters of beef (ABIEC, 2022). Besides exportation, Brazil has the world's second-highest rate of household meat consumption (Euromonitor, 2020), and the internal market absorbs approximately 2/3 of the total production of beef (Ferraz & Felício, 2010).

Brazil is a country with continental dimensions with geographical regions with diverse characteristics. Many Brazilian areas have local cultures closely linked to cattle breeding. Among the productive regions of Brazil, we selected the most southern Brazilian state, Rio Grande do Sul. The state borders Uruguay and Argentina and shares the Pampa biome with these countries. This biome is characterized by pastures, temperate climate, and land availability for livestock production. Therefore, it has a historical tradition of extensive cattle breeding, which influenced the local traditions, culture, and eating habits (Hauschild et al., 2020). According to Milford et al. (2019), being a meat producer region influences meat consumption patterns, and meat producers' countries have a culture of appreciating meat. Rio Grande do Sul has the highest average meat consumption among all Brazilian states (IBGE, 2020). These factors reinforce a social norm supporting meat consumption in the country, providing a social environment that tends to stress norm conflict, which is suitable for the study.

Data collection started by conducting 13 semi-structured in-depth interviews with adults living in the southern region of Brazil. The study covered people with diverse dietary patterns, including vegetarians, meat eaters, and meat eaters, which is unusual. Studies in the field have

focused on people who have restricted or eliminated meat from their diets (Rosenfeld & Tomiyama, 2019; Salmivaara et al., 2022), although meat eaters make up the majority of the population. Based on these results, we structured the experimental study's theoretical model and hypotheses.

Afterward, an experimental research was conducted with 263 people who eat meat, verifying if the normative conflict increases or decreases the consumption intention and if the meat consumption pattern (reducer or full meat-eater) affects the intention in a conflict situation. It was also verified whether pro-environmental self-identity and self-transcendence moderate the relationship between normative conflict and consumption intention.

Next, the two research stages' methodological procedures and empirical findings will be detailed.

5.3.1. Stage 1: In-deep interviews

5.3.1.1. Method

We carried out 13 semi-structured in-depth interviews with consumers to answer *how the conflict between social norms of different groups affects meat consumption behavior?* This technique was chosen because it allows for more detailed and in-depth probing, even on sensitive topics. In addition, it seemed appropriate because the participant was not influenced by a specific social group at the time of collection, as is the case with the focus group approach (Malhotra & Birks, 2007). The sample size was determined by data saturation, exceeding the number of interviews in which data saturation is commonly found in studies of Management, which is 12 in-deep interviews (Boddy, 2016).

Participants were recruited to collaborate on research on eating habits through the researchers' networks and subsequent snowball sampling. We do not specify the focus on meat consumption in the invitation to reduce bias and avoid pre-conceptualizations. Participants varied about eating, reducing, and avoiding meat. Also, we sought balance in the representation of sex and different cohorts.

The participants did not receive any compensation or incentive for participating. All respondents that answered the invitation and met the requirements (born and resident in the Rio Grande do Sul; over 18 years old; being able to choose to eat meat or not, regardless of economic and health restrictions) were interviewed. Regarding the last requirement, Brazil is a developing country with significant inequalities between social classes. These inequalities

impact the possibilities of purchasing food, especially foods with a higher sale value, such as red meat. Health concerns and diseases can also change food consumption, affecting meat consumption patterns.

Study participants are of both sexes (5 men and 8 women), aged between 18 and 47 years old. We interviewed people with different dietarian patterns: two (2) participants do not eat meat, seven (7) are reducers, and four (4) are full meat-eaters. Among the reducers, three (3) participants had phases in their lives when they did not eat meat. All thirteen (13) participants consume dairy products and eggs. Reported weekly beef consumption was from 1 to 8 servings and was notably lower among consumers who reported reduced meat consumption (from 1 to 2 servings). Lunch is the meal in which respondents report consuming beef more often. The beef consumption characteristics of the interviewees were described without fitting the behaviors into categories to contemplate their nuances and complexities. Another factor that led us to this choice is that the participants avoided self-identifying as vegetarian, flexitarian, or reducetarian. Thus, we identify behavioral inclinations, choosing not to explore social identity labels (Rosenfeld et al., 2019). Table 8 presents the primary participants' characteristics.

The interview script was elaborated from the thesis' theoretical background and was previously validated by experts and pre-tested in two interviews, not included in the analysis. In this order, the questions explored self-identities, group affiliation, dietarian patterns and habits, opinions on meat consumption, social norms regarding meat consumption, conflicting norms of different groups, and pro-environmental self-identity (Appendix 1).

We initially addressed meat consumption in general, and during the interview, specifically on beef. In this way, we sought to reduce the effect of the difference between types of meat in taste, price, and quality perceived, also allowing for an emphasis on the type of meat produced in the region.

We explored the pro-environmental self-identity, one of the constructs of the theoretical model, asking the participants their level of environmental concern and examples of dairy actions that tried to capture pro-environmental intentions and actual behavior, in line with Whitmarsh and O'Neill (2010). The questions that refer to the environment and sustainability were deliberately left for the end of the interview so that this topic would not bias the answers.

Table 8 - Participants' characteristics

Interviewed	Sex	Age	Household composition	Occupation	Consume meat?	Beef consumption characteristics
E1	female	20	father and brother	undergraduate student	No	She hasn't eaten any kind of meat for more than 4 years
E2	female	20	parents	undergraduate student	No	She hasn't eaten any kind of meat for over 3 years but remains flexible if you want to eat it
E3	male	47	alone	business owner	Rarely	He avoids all meats; was a vegetarian for more than 15 years and returned to eating meat during the pandemic; plans to stop eating meat again
E4	female	20	parents and brother	undergraduate student	Occasionally	She has reduced her meat consumption, avoiding it whenever possible; ideally, she would like to stop eating
E5	female	34	alone	police officer	Occasionally	She has gone periods without eating meat, avoiding it whenever possible; ideally, she would like to stop eating
E6	female	25	husband	Ph.D. candidate	Occasionally	She avoids red meat; gives preference to grains in the diet, and among meats, prefers the taste of pork and chicken
E7	female	39	husband and son	bank officer	Yes	She has been a vegetarian and currently eats meat. However, avoids it on occasions when she eats out and has doubts about the quality and taste
E8	male	37	wife and son	engineer	Yes	He has reduced red meat consumption for health reasons and family influence
E9	male	34	roommates	researcher	Yes	He reports some sporadic replacement by plant-based alternatives when he eats out; he prefers chicken meat
E10	female	24	husband	undergraduate student	Yes	No type of reduction or replacement; expresses the desire to stop or reduce consumption
E11	female	22	parents	undergraduate student	Yes	No type of reduction or replacement; expresses the desire to stop or reduce consumption
E12	male	18	parents and sister	school student	Yes	No type of reduction or replacement; no intention to stop or reduce consumption
E13	male	19	parents and brother	undergraduate student	Yes	No type of reduction or replacement; no intention to stop or reduce consumption

Source: the author

The study was conducted according to the guidelines in the Declaration of Helsinki and the standards of ethics in research with human beings. All interviews were preceded by informed consent and conducted in Portuguese by a trained researcher. Primary collection data was between June and July 2021 by an online pre-scheduled meeting using the Zoom platform.

After finishing all the data collection, we proceeded with the analysis. Interviews were recorded, and transcripts were verbatim. Thematic analysis technique was applied, following the steps proposed by Braun and Clarke (2006) to data analysis: familiarization with qualitative data (i.e., reading transcripts of all interviews); generation of initial codes; search for themes; review of themes; definition of the conceptual limits of the themes; reporting of thematic findings and their applications.

The software Atlas.ti software was used for data systematization. The dimensions of analysis were defined *ex ante*, from the theoretical background (conflicting norms, effect on behavior); however, the categories emerged from the analysis (perceived conflicting yes/no; effect on behavior yes/no; type of effect). We also analyzed group affiliation, dietarian patterns and habits, opinions on meat consumption, and pro-environmental self-identity. After coding, we crossed the categories with demographic information (age, household, sex, dietary pattern).

5.3.1.2. Findings

To verify the current general social norm or standard in the society in which they live, we asked respondents if eating meat is common where they live, something people usually do. Respondents were unanimous in recognizing that the current social norm in their region supports and even encourages meat consumption. The speeches report the consumption of meat linked to habits, social life, and local culture and define meat consumption as standard behavior.

“(...) the question of culture, at least for us, Rio Grande do Sul, the main dish, the culture, which is the main pillar is the barbecue (...) So, the culture influences a lot in our base and our choice in whether we like it or not” (E3, male, 47).

“I think it is more of a social living thing... we usually get together to eat, right? I think that eating much meat is very characteristic of Rio Grande do Sul.” (E5, female, 34).

“(...) my father, to him, if he does not have meat in a meal, it is not a meal. So, he has this thing that he needs to have meat to consider lunch, a dinner. I think we end up consuming meat in a somewhat rampant way with the justification of “ah our diet is necessary (...) The whole barbecue thing, we have this ritual of having a barbecue every Sunday.” (E6, female, 25).

Normative conflicts between norms from different groups could be identified in seven cases, all involving participants who eat meat. The norm misalignment involves the social norms of three groups: family, peers, and region. Previous research already identifies national norms (Nguyen & Platow, 2021), and, as Brazil is a country with continental dimensions, we consider “regional group” people who live in the same state (the Rio Grande do Sul). The conflict between family and peers’ norms is prevalent (six cases) and is reported by reducers and full meat-eaters. They report that the family has norms that support meat consumption, and the peer group has social norms favorable to reducing consumption (or unsupportive to meat consumption), leading to the disparity.

One participant expresses a conflict between regional and family norms. His wife was born and raised abroad (Colombia). In this case, different from other participants that report alignment between family and regional norms, the “close family” group norms are unsupportive of beef consumption. We will come back to this case later.

No normative conflicts are identified in six cases. Among these, three participants (one male, 47 years old, living alone; two females, both 20 years old, living with their families) have in common to be or have been vegetarian for a long time for motives related to ethics and animals’ rights and welfare. They are also the participants of our research with the lowest reported level of meat consumption. Their eating behavior does not seem to be connected to a group influence or the supportive regional and familiar social norms, nor affect it.

The 47-year-old participant suggests that maturity helped him better deal with the conflicts and pressures related to meat consumption. When asked if you feel pressure to eat meat:

“In the beginning, yes... that thing of: ‘Oh, no, eat there’(...) but people mature too, right? So, my friends got older, so did I... before the people were younger and had more pressure, it bothered me more, now everything is calm.” (E3, male, 47)

However, the two other cases are young females, around 20. They even report pressure from their family to eat meat and friends not to eat it, but they do not perceive themselves as pressured and feel affected by it.

The other three people who do not relate to normative conflicts are two males and one female, young adults (between 18 and 20), full-meat eaters, and living with parents. Their family eats meat, and none of the groups they are part of appear to have social norms in disparity with family norms. They seem to fit with the family and regional group's social norms without question.

In addition to exploring whether the conflict between norms exists and is felt, another goal of our research was to understand how the norms disparity affects behavior. Among the six cases in which there is a perception and feeling of conflict, we could identify that it affects consumption behavior in three cases. The first case is interviewee E4, a female, 20 years old, who is reducing meat consumption. She has a group of friends that are vegetarians and reducers. This group has an unsupportive norm to eating meat. She began changing the dietarian pattern by reducing beef consumption and outlined a gradual reduction strategy. The first step was reducing the intake of beef; the second was to stop eating beef, which she is currently trying; and, after, to reduce the consumption of chicken, pork, and fish. Finally, she intends to stop eating meat by the end of the process.

According to her, conflicting norms make her reduction strategy difficult. For example, because of the family norm, which supports meat consumption, she feels pressured to eat meat at family meals, mainly when her father prepares barbecue on Sundays, a regional culinary tradition.

“(...) I usually eat once a week, to have a barbecue on Sunday and to please everyone.”
(E4, female, 20)

When asked if she feels pressured to change her pattern of meat consumption, she answers:

“I do not know if I feel pressured, maybe more influenced. (...) I think it is a little bit because I see people doing this (reducing consumption) and thinking that maybe it is cool to do it too, you know? But there are also many people who do not do that... so, I don't know, I think I feel a little pressure.” (E4, female, 20)

To solve the conflict, she seems to adapt her food intake according to the group's expectations and norms at the time of the meal.

The second case is E5, female, single, 34 years old. She wants to stop eating all types of meat and has already spent eight months without meat intake. Nowadays, she tries to reduce her meat intake and has a group of girlfriends that support the reduction, mainly due to concern for animal welfare and rights. However, she feels pressured by her mother, her closest relative. According to the interviewee, her mother expressed aversion when she told her mother about her desire to stop eating meat. Her mother also referred to people who don't eat meat as “it”.

“With my mother, for example, I have lunch with my mother once a week, whenever I go there is meat. Or it's chicken or red meat, but it has meat, you know? She doesn't know how to cook without meat.” (E5, female, 34).

“She (her mother) said: Oh, and now you're going to turn ‘it’ over, and then it's going to be hard to cook for you”. (E5, female, 34).

Interviewee E5 keeps trying to consume less meat, especially beef, but the conflicting norm makes it difficult. She maintains her meat intake when she has meals with her mother, and when cooking for herself or eating with her supportive friends, she chooses vegetables and fish.

Finally, the third case is E8, male, 37 years old, married to a Colombian. He restricts beef consumption when cooking at home because his wife formally expressed that in the Rio Grande do Sul people eat excessive beef. Nevertheless, he feels pressure from the regional norm to consume beef and does so when he has meals with his co-workers during the work shift. At home, with his wife, he tries to consume other types of meat.

“(…) my wife is Colombian. For her, it is a lot of beef for them here. And especially my wife, well, from her family that came, so it was much more just chicken and chicken, chicken, even for financial reasons there, there is a much bigger difference. And so, I don't think I eat as much beef as I ever did when I used to eat (…) (E8, male, 37).

We also asked participants for general information about their diet, how they keep up with news from their region and the world and their opinion on meat consumption. Regarding the amount consumed weekly, full meat-eaters reported eating between 200 and 1000 g (from 1 to 8 weekly servings). Among reducers, the amount was from 200 to 400 gr. (from 1 to 2 weekly servings). Most respondents stay informed by reading online newspapers and news portals. They also cited social networks such as Instagram, Facebook, Twitter, and television newspapers as sources of information. In addition, other networks were mentioned, such as Reddit, Youtube, Tiktok, Linkedin, and Whatsapp, as well as blogs and podcasts.

None of the interviewees mentioned being informed by the printed newspaper or radio, traditional means of communication. When asked about their opinion on meat consumption, four (4) people focused on their personal experience related to meat consumption – individualized, talking about their difficulty in reducing, cultural pressure, relationship with their health, and nutritional factors. Although the question was generic (*“What is your opinion on meat consumption”*), three (3) participants felt that people should continue to eat meat and six (6) respondents expressed that, in their opinion, people should reduce the consumption of meat. Sustainability appears as an argument among those who think that consumption levels should be maintained and those who think there should be a reduction in consumption. Among the first group, there was a comparison of the impacts of raising cattle with planting monocultures (e.g., soybean), justifying that the first is less harmful to the environment than

the second. Among supporters of reduction, the environmental impact of livestock farming was the argument most frequently used. The term “meat industry” appeared in the speeches as hostile to animal welfare. However, even among the group that supports the reduction, there is a counter-argument related to habits and customs: people know what is best for them concerning economic inequity and access to this type of food. The reasons for reducing consumption cited were: animal welfare (9 respondents mentioned it at some point in their speeches) and sustainability (8 mentioned it). The reasons for maintaining consumption mentioned were: personal taste and health. We also explored pro-environmental self-identity in the interviews, asking, “*What is your concern for environmental issues*”. Afterward, we asked for examples of behavior that expressed their concern. In general, people reported having a high level of concern, but few were able to report more than one sustainable behavior in their daily lives.

The most usual behavior was the separation of recyclable from organic waste. Only one interviewee reported being concerned about the food they consume, including meat and organic foods, and their environmental impact. Both correct and incorrect information and data were cited regarding the environmental impact explicitly related to meat. For example, it seems to us that the general perception is that there is a strong link between cattle ranching and deforestation of protected areas, especially the Amazon Forest, the emission of greenhouse gases (talks like “*cows produce metamethane gas*” and “*feces from livestock release harmful gas to the environment*”), and land and water use. Misinformation was also related to cattle raising, such as an increase in the hole in the ozonium layer and that “*cattle trample the pasture and it will become desert then*”.

It is noteworthy that all statements related to environmental impact were explicitly related to cattle. The argument that most seem to mobilize respondents in favor of reducing meat consumption, both meat-eaters and full-meat eaters, is animal welfare. Cattle, chicken, and pork were animals mentioned in responses related.

5.3.1.3. Discussion

We will discuss the results of qualitative research in advance, as the results will be used in designing the experimental research. The findings are aligned with the literature (Macdiarmid et al., 2016; Soule & Sekhon, 2019), confirming that the current social norm in Western societies supports meat consumption. Furthermore, the results indicate an alignment between regional social norms and family norms: all participants also stated that their “close family”

group eats meat. This alignment can enhance the force of the social norm, increasing meat consumption behavior. It is also possible that the regional norm influences the family norm.

In addition, the respondents who consume meat perceive, compared to their consumption, that family members consume more meat, suggesting an overestimation of the consumption of others. Misperception of the norm is a phenomenon that has already been studied in alcohol consumption and can lead to an increase in consumption (Dumas, et al., 2019). Previous studies have described a misperception between perceived norms (what we think our peers do) and actual norms (how they act), and it is the basis of the social norm approach (Berkowitz, 2004; Perkins & Berkowitz, 1986). Thus, norm misperception seems to occur also in the meat consumption context.

Respondents were asked to indicate which people could be identified as necessary and who would make up the groups they called “close family” and “close friends”. We aimed to identify proximal groups that are relevant to their self-identity. The composition of the “close family” group varied among the interviewees, ranging from just one person (mother) to a broader group, including aunts, grandparents, and boyfriends. The description of “close friends” also addressed a variety of peer groups identified as relevant, including former classmates, former college or current classmates, neighbors, husband’s co-workers, people who play the same sport, people who attend the same church, and friends in general.

Therefore, it seems that the composition of the relevant groups is particular to each individual, which must be considered when approaching identification with the group using the example of members. For example, logically, the parents are part of the family group but not necessarily part of the relevant family group. This could depend on the person's stage of life, if he/she lives with his parents, or if he/she was raised by them, among others factors.

Regarding normative conflict, the reported cases indicate that what differentiates people who perceive or do not perceive conflict is the feeling that this misalignment situation can harm their social relationships because of incompatible behavioral expectations. This finding empirically corroborates what the theory about normative conflicts suggests: to have a behavior effect, it is necessary 1) perception of conflict and; 2) feeling of threat to membership or of disappointing members of the relevant group (Giguère et al., 2010; Hirsh & Kang, 2016). It is not enough just to perceive misalignment; the resulting feeling of the perception seems to make all the difference. We noticed that some people perceive misalignment and feel it as a conflict and a threat to their group affiliation, and those who only perceive misalignment without it causing conflict or psychological discomfort.

In seven cases, people perceive the conflict between social norms of different groups, primarily between family norms and peer groups. The results suggest a major effect on behavior in people who have reduced or are willing to reduce meat consumption, making it difficult to reduce consumption.

When conflict is perceived, the strategy implemented is a behavior adaptation according to the norm's expectations of the salient group. This strategy can be described as a behavioral strategy (Reed et al., 2012), switching between identities (Giguère, Lalonde, and Lou, 2010). In previous research with vegans and vegetarians, Salmivaara et al. (2022) identified three strategies to manage normative conflicts: adapting to, challenging, and weakening the related social norm. Considering that the participants in the research have different consumption habits and that the conflict was concentrated among the reducers, it is possible that each group (full meat-eaters, reducers, and vegetarians/vegans) uses different strategies.

However, in our research, vegetarians and carnivores seem unaffected by the conflict between the social norms of different groups. This result differs from the findings by Salmivaara et al. (2022), who indicated that most vegetarian and vegan respondents experienced situations where they experienced conflict between social norms related to eating meat. The authors pointed out that some respondents did not recognize any situation in which they had to negotiate social norms. That is, there seems to be diversity in how normative conflicts between groups are perceived and how they affect behavior. Eating behavior depends on many factors, so meat consumption follows the same complexity.

5.3.1.4. *Summary of main findings*

The conflict between social norms of different groups occurs most between family and peer groups' norms. When the conflict is perceived, it may or may not affect behavior. The effect on behavior appears to result from a feeling of threat to affiliation and from the effort not to let down members of the relevant groups, whether family or peers. We noticed a more significant effect on the behavior of people who have reduced or are willing to reduce meat consumption, with conflict making reduction difficult. In one case, the conflict led to meat reduction. In all cases where there was an effect on behavior, the family's norm seems more potent than peers' norm in determining the meat consumption pattern.

Otherwise, people "at the ends" of the meat consumption continuum (vegetarians and full meat-eaters) seem unaffected by the conflict between social norms of different groups. They perceive and report the conflict, but it apparently does not change their behavior.

5.3.2. Stage 2: Experiment¹

The exploratory stage made it possible to understand better how the conflict of social norms of different groups occurs. The findings supported the formulation of the research hypotheses, the theoretical model to be tested in the experimental stage, definitions of experiment manipulation, and instrument development. This illustrates completeness and a sense of process, two crucial strengths of mixed method strategy (Bryman, 2016). Two moderating variables of the relationship between normative conflict and meat consumption intention were tested: self-transcendence and pro-environmental self-identity (PESI). PESI was already a moderator in the thesis project. On the other hand, self-transcendence was included as a possible moderator, following the suggestion of the project's evaluator board to include a variable that indicated psychological traits or characteristics.

In the first stage of the empirical study, we explored meat consumption but focused on studying the conflict in beef consumption. In the experiment, we continued to use beef only to reduce confound. Taste preference, texture, religion, and culinary traditions influence the consumption of meat from different animals (Sanchez-Sabate; Sabate, 2019; Apostolidis; McLeay, 2019). The multiplicity of variables that can interfere with the choice of meat led us to this limitation. The beef was chosen because it is the meat most consumed by both whole meat eaters and reducers (Kemper et al., 2022).

Now, the proposed hypotheses and their arguments are presented, as well as the theoretical model, followed by the method and results.

5.3.2.1. Hypotheses and theoretical model

Social norms are the prevailing rules and behavior expected of members of a particular group, being shared among its members actively by instructions, demonstrations, rituals, or passively, non-verbally, observation, and imitation (Cialdini & Trost, 1998; Hawkins et al., 2019). They can be descriptive, indicating the common and prevalent behavior in the group, or

¹ This research was carried out during the course on Experimental Methods at PPGA/UFRGS, taught by Prof. Leonardo Nicolao. Ph.D. students Laís Trevisan and Lucimara Pereira participated in the conception, planning, elaboration of the instrument and data collection; Prof. Leonardo and Prof. Márcia Barcellos participated in the conception, planning and elaboration of the instrument.

injunctive, indicating the behavior that should be done (Cialdini & Trost, 1998). Group affiliation follows a specific prototype, influenced by a unique, particular, and shared normative system that guides behaviors, beliefs, attitudes, and feelings (Hogg, 2016).

Individuals are concurrently affiliated with different social groups and, therefore, exposed to different normative expectations (Amiot et al., 2020; Hirsh & Kang, 2016). Considering the norm as a group pattern (McDonald & Crandall, 2015), two groups with which an individual has high identification and a similar level of relevance to their self-identity may have divergent norms (Hirsh & Kang, 2016; McDonald et al., 2013). Normative conflict is characterized by social norms that are incompatible with each other, involving two or more valued and salient identities at the same time. The individual is aware of the divergence and understands it can harm their social relationships (Giguère et al., 2010; Hirsh & Kang, 2016). There is a feeling of failure to comply with the norms of a group, putting affiliation at risk and configuring a threat to self-perception based on group affiliation (Gibson et al., 2020).

In a conflict situation, people are unsure which identity and social norm should guide their behavior (Gibson et al., 2020). Feelings of threat and uncertainty cause neurophysiological responses (Hirsh & Kang, 2016), leading the individual to seek a solution and return to a situation of emotional stability. To this, he/she can adopt cognitive and behavioral strategies that reduce the conflict, with consequences in their behavioral intention (Reed et al., 2012).

Regarding meat consumption, people can be classified into three broad groups: 1) people who do not eat meat (vegetarians and vegans); 2) people who eat meat but adopt some consumption restriction related to the type of meat (they eat chicken, but not pork, for example), the quantity (they eat smaller portions) or the frequency (they eat meat only a few days a week) (reducers or flexitarians); and 3) people who eat meat without any restrictions (full meat-eaters or unrestricted meat-eater). Despite classification into categories, meat consumption can be seen as a continuum in which people change their behavior over time (days or months) and across life stages (Rosenfeld & Tomiyama, 2019a).

In the case of full meat-eaters, the qualitative study indicated that in a situation of normative conflict between groups of similar importance, their behavior seems to be unaffected. However, according to theory, they are expected to look for balance in fulfilling the expectations of the two groups whose norms conflict. To achieve this balance, it is reasonable to expect that full meat-eaters will move their behavior to a more central point of the continuum, reducing their consumption intention. In this way, full meat-eaters continue to eat meat, corresponding to the expectation of the group whose norm supports meat consumption but reduces the intake if compared to a situation without conflict, in an attempt also to be aligned

with the group that supports the reduction of meat consumption. Consequently, we propose the following:

H1a: Conflict between social norms of different groups on meat consumption causes a decrease in meat consumption intention in people who consume meat without restriction (full meat-eaters).

Reducers consume meat but with restrictions (Gousset et al., 2022). In general, it is a group that has made efforts to reduce its consumption without avoiding it altogether (Dagevos, 2021), contrary to the current social norm that supports meat consumption (Sharps et al., 2020). The previously exploratory research pointed out that there is an alignment between national social norms, closely related to the regional culture of a place (Nguyen & Platow, 2021), and family norms, which enhance the norm's power. It was also found that reducers tend to increase their meat intake in family meals when exposed to a supportive family norm. Similarly, the study by Salmivaara et al. (2022) on how vegetarians negotiate normative conflicts related to food indicates a strong influence of the family norm on eating behavior. The study results further reveal that people who do not eat meat often choose or are forced to adapt their behavior to the prevailing norm. Rosenfeld and Tomiyama (2019b) found that reducers eat more meat in two situations: being with family or during a celebration or special occasion. Thus, they avoid negative social experiences such as exclusion, disapproval, hostility, or stigma (Kemper & White, 2021; Rosenfeld & Tomiyama, 2019b).

Reducers and full meat-eaters seek balance in meeting conflicting normative expectations, but in a different way. We predicted that aligning national and family social norms would increase the avoidance of family disapproval and stigma. Therefore, the family norm will have more weight in the reducers' decision than the friends' norm, causing an increase in the intention to eat meat in a conflict between these two groups. It is proposed:

H1b: Conflict between social norms of different groups on meat consumption causes an increase in meat consumption intention in people who eat meat with restrictions (reducers).

Furthermore, it is proposed in this study that pro-environmental self-identity and self-transcendence moderate the relationship between the conflict of social norms of different groups and the intention to consume meat. Pro-environmental self-identity (PESI) refers to an enduring sense of self as a person who acts in an environmentally friendly manner (Van der

Werff et al., 2013). As a specific self-identity, it encompasses an identity project, its symbolism, and related lifestyle, which manifests itself in the market space (Dermody et al., 2018).

Previous studies suggest that PESI influences many pro-environmental intentions and behaviors, such as recycling, water, energy use, transport, and purchase of organic products (Whitmarsh & O'Neill, 2010). PESI is considered a strong influence on consumer decision-making (Dermody et al., 2015) and is used to understand sustainable consumption, considering the intention and behavior of both increasing and decreasing consumption (Dermody et al., 2018).

Meat production is seen as harmful to the environment, and reducing or eliminating consumption is considered sustainable and indicated for environmental preservation (Dijkstra & Rotelli, 2022). However, there are still few studies on the influence of PESI in the food domain (Carfora et al., 2019; Wolstenholme et al., 2020).

Pesi was explored in our previous qualitative research. Respondents generally showed great concern for environmental conservation but reported few actions that translated this concern into behavior. Four cases showed a more comprehensive range of pro-environmental behaviors: three reductive and one vegetarian. They positioned their low meat consumption alongside other pro-environmental transport behavior (use the car less, use bicycles as a means of transport), waste management (use of home compost, avoid plastic packaging), saving natural resources (use conscious of water and light), and conscious consumption (consume less, buy second-hand clothes, buy organic food, buy direct from the producer). These findings indicate that pro-environmental self-identity can moderate the relationship between conflict of social norms and consumption intention: the higher the PESI, the lower the consumption intention. Therefore, it is proposed:

H2: Pro-environmental self-identity moderates the effect of conflict between social norms of different groups on meat consumption intention.

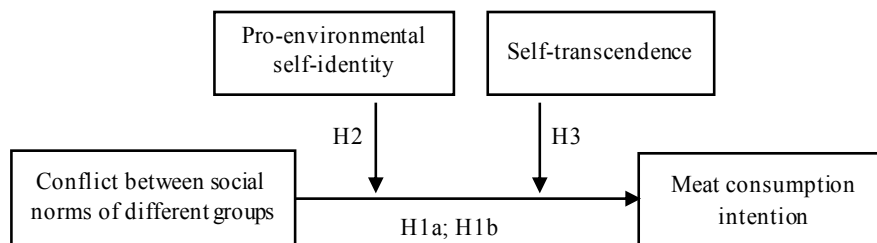
Self-transcendence refers to a holistic view of the world and the perception that all human beings and nature are interconnected (Castelo et al., 2021). It is related to expanding the frontier of perception of interpersonal relationships and temporality, in which the individual perceives himself as part of a whole and with relative importance within a system of superior complexity. Self-transcendence is a higher-order need in Maslow's Theory of Needs hierarchy and may or may not be connected to religious experiences (Koltko-Rivera, 2006).

Previous research points out that self-transcendence is linked to the connection to something greater than oneself, affecting prosocial behaviors (Castelo et al., 2021). The (non)consumption of animal meat is related to the concern for the welfare and rights of animals and moral issues involving the ingestion of other animals (Leroy, 2019). Animal welfare is pointed out in the literature as the main argument for reducing or eliminating meat in diets (Plante et al., 2019; Soule & Sekhon, 2019), which was corroborated by the findings of the qualitative research stage. Four participants (vegetarians and dieters) also questioned the morality and ethics of killing another living being for consumption. In this sense, self-transcendence seems to have the potential to be related to food choices regarding meat consumption. Thus, we propose:

H3: Self-transcendence moderates the effect of conflict between social norms of different groups on meat consumption intention.

The theoretical model is presented in Figure 7.

Figure 7 - Theoretical model of the study



Source: the author

5.3.2.2. Method

One-factor experimental design research with two conditions between participants (1x2) was carried out, consisting of a control group (without normative message) and an experimental group (with conflicting norms between family and peers). The research design, analysis strategy, and central hypotheses were pre-registered on the “As Predicted” platform (<https://aspredicted.org/dz6pc.pdf>). Data analysis was carried out using R statistical software version 4.1.4. and additional packages.

The sample was estimated by seeking the most significant possible statistical power. As the population size is unknown, a minimum sample of 100 respondents per condition was defined to enable statistical results with a reliability of 95%. Data collection was carried out for 15 days in June 2022. To increase the statistical power of the analyses and take into account the expected exclusion criteria and the data collection strategy (online and by convenience), we chose to seek the largest possible number of respondents within the collection period. Participants were recruited through dissemination on the researchers' social networks (Instagram, LinkedIn, Facebook, Whatsapp) and were invited to participate in scientific research on consumption behavior.

The experiment was carried out using an online instrument, in Portuguese, with the support of the Qualtrics platform. The study followed the standards of ethics in research with human beings and was approved by the Research Ethics Committee of the Federal University of Rio Grande do Sul (CAAE 59479522.1.0000.5347).

After reading the presentation text and the consent form and accepting to participate in the research, participants were randomly allocated to one of the two research conditions. For each group, a text referring to that condition was presented. In the experimental condition, participants read a 172-word text that asked them to imagine a situation in which there was a conflict between the social norms of close family and relevant friend groups. The situation was a lunch commemorating the participant's birthday, and the menu offered was beef barbecue and various types of vegetables roasted on the grill. The conflict situation groups were chosen based on the exploratory research findings. In the exploratory research, the family and friend's groups were reported in cases of conflict of social norms. Family norms were identified as norms that support meat consumption, and friends' norms as unsupportive. We sought to describe the conflict situation so that both groups were identified as relevant and important to the participant (identification) and the group's norms were concomitantly salient (salience). Descriptive and injunctive normative messages were used and aligned within the group.

In the control condition, participants were asked to read a 172-word text involving the same situation (a birthday meal and groups of family and friends) but without reference to social norms related to meat consumption. In this situation, the same two relevant groups (identification) were maintained, but the norms of the groups were not identified or salient.

After reading the text, participants of experimental and control groups should indicate their intention to consume bovine meat by answering the question: "Please indicate the option that best represents your choice of food in this context". There were five response options, which described different compositions of dishes (scale from 1 to 5): 1 - "only with vegetables";

2 - “mostly vegetables, little beef”; 3 - “the same amount of beef and vegetables”; 4 - “mostly beef, few vegetables”; and 5 - “only beef”. We restrict the manipulation and choice of bovine beef to avoid confounds.

Demographic data were collected regarding age, sex, educational level (De Backer & Hudders, 2015), frequency of current meat consumption in number of days per week (Malek et al., 2019), if reducing meat consumption, excluding reduction for economic reasons (Gousset et al., 2022; Verain et al., 2022) and types of animal protein consumed, including meat, dairy, and eggs (Hopwood & Bleidorn, 2019).

Consumption profile (whether full meat-eater or restrictive eater) was measured based on self-reported meat consumption patterns (Bryant & Sanctorem, 2021; de Gavelle et al., 2019; Elzerman et al., 2021), and the participant should assess their general pattern of meat consumption by selecting one of the following statements: “I eat meat in my diet” (full meat-eaters); “I eat meat in my diet, but with restrictions on quantity and/or type” (reducers); “I don't eat meat in my diet” (vegetarians).

Pro-environmental self-identity was measured with 4 items rated on a 5-point Likert scale (Dermody et al., 2018; Whitmarsh & O'Neill, 2010). The items are: “I think of myself as an environmentally-friendly consumer”; “I think of myself as someone who is very concerned with environmental issues”; “I would be embarrassed to be seen as having an environmentally-friendly lifestyle”; “I would not want my family or friends to think of me as someone who is concerned about environmental issues”. Likewise, self-transcendence was measured with 4 items adapted from Castelo et al. (2021) and Levenson et al. (2005), evaluated on a 5-point Likert scale. The items are: “I feel that on a higher level, all of us share a common bond”; “All life is interconnected”; “I feel that my individual life is a part of a greater whole”; “I feel a greater sense of belonging with both earlier and future generations”. The scales were initially in English and were translated into Portuguese using the back-translation technique. All data analyses were carried out using R statistical software version 4.0.0 (R Core Team, 2020).

A total of 495 people participated in the experiment. According to pre-established criteria, participants were excluded from the analysis if they: 1) did not accept the research participation term (n=3); 2) did not answer all the questions in the instrument (n=69); 3) took more than 4 hours to fill the research (between the beginning and the end of the instrument) (n=16); 4) do not consume beef (because the manipulation and intention measure were based on bovine meat; n=47); 5) they did not pass the manipulation check (n=93).

The exclusion of respondents who do not eat beef was based on questions about the types of animal protein consumed (excluding those who did not choose beef between the

options) and self-declaration of dietary profile (those who declared that they did not eat meat in their diet). The manipulation check was performed by asking, “Was there conflict in the presented situation?”. Participants allocated in the experimental group who answered “totally disagree”, “partially disagree” and “neither agree nor disagree” were excluded (n=67); participants allocated in the control group who answered “totally agree”, and “partially agree” were excluded (n=26).

Thus, the final sample consisted of 267 people (control condition n=152; conflict condition n=115) of both sexes (69.66% women), aged between 18 and 80 years ($M_{age} = 39$ years; $SD_{age} = 12.28$) and with higher education (66.29% with complete or incomplete graduate degrees).

Regarding the meat consumption profile of the respondents (Table 9), the reducers represent 34.83% of the sample, an approximate percentage of the sum of people who indicated that they consume meat with a frequency of up to 4 days a week.

Table 9 - Profile of respondents' meat consumption

Question	n	%
<i>Frequency of meat consumption (weekly)</i>		
Less than 1 day a week or never	7	2,62%
From 1 to 2 days a week	18	6,74%
From 3 to 4 days a week	53	19,85%
From 5 to 6 days a week	61	22,85%
7 days a week	128	47,94%
<i>Self-identified meat consumption pattern</i>		
Full meat-eater (“I eat meat in my diet”)	174	65,17%
Reducer (“I eat meat in my diet, but with restrictions on quantity and/or type”)	93	34,83%
<i>Have you made efforts to reduce your meat consumption (not for financial reasons)?</i>		
Yes	87	32,58%
No	180	67,42%

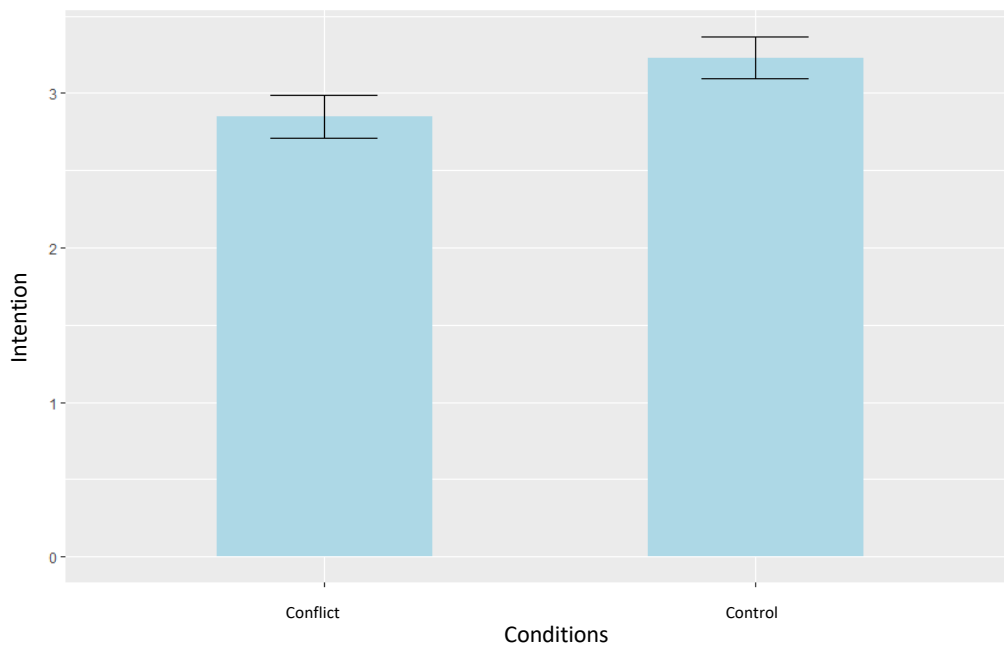
Source: the author

A similar percentage of respondents are making efforts to reduce meat consumption for reasons other than financials. Participants reported consuming more than 5 days a week (70.79%), and 47.94% consumed meat daily.

5.3.2.3. Results

Initially, we compare the consumption intention of the experimental group and the control group. A Welch-adjusted independent samples t-test on the difference score in meat consumption intention between the control and experimental group revealed that meat consumption intention is significantly lower in the experimental (conflict) group than in the control group ($t [265] = 3.67, p < .01$) (Figure 8).

Figure 8 - Consumption intention by experimental condition



Note. Control group: $N = 152, M = 3.23, SD = 0.87$; Conflict group: $N = 115, M = 2.85, SD = 0.78$. t-test p-value = 0.0002856.

Source: the author

For the test of hypotheses H1a and H1b, the means and standard deviation were identified by consumption group (full meat-eaters and reducers) and condition (Table 10; Figure 9). A one-way ANOVA on intention means showed significant differences in means between conditions but no interaction between the consumption group and intention ($F[1, 263] = 10.39, p < .01, \eta^2 = .03$).

A Tukey test revealed a significant difference between the mean intention of full meat-eaters in the conflict and control condition ($p < .01$). In the reducers group, the difference between the means of intention in conflict and control groups was not significant ($p > .05$). Thus, the results support the hypothesis H1a since the mean intention of the eaters in the control

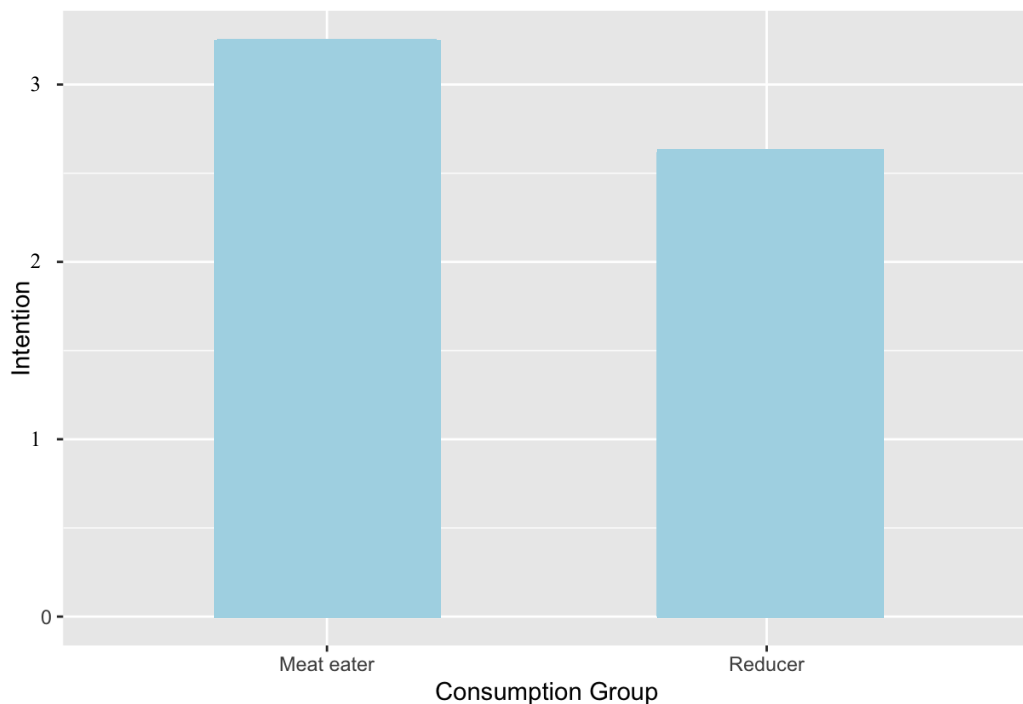
group ($M=3.47$) is higher than the mean intention of the eaters in the conflict group ($M=3.04$), and the means are statistically different at $p < .01$. Hypothesis H1b was not supported since the intention of the reducers between the control group, and the conflict group is not statistically significant ($p > .05$).

Table 10 - Mean and standard deviation of consumption intention between conditions

Condition	Consumption group	n	Mean	Sd
Control	Full meat-eaters	106	3.47	0.75
Conflict	Full meat-eaters	68	3.04	0.72
Control	Reducers	46	2.67	0.90
Conflict	Reducers	47	2.57	0.77

Source: the author

Figure 9 - Consumption intention by experimental condition and consumption group



Note. Meat eaters: $N = 174$, $M = 3.30$, $SD = 0.76$; Reducers: $N = 93$, $M = 2.62$, $SD = 0.83$.

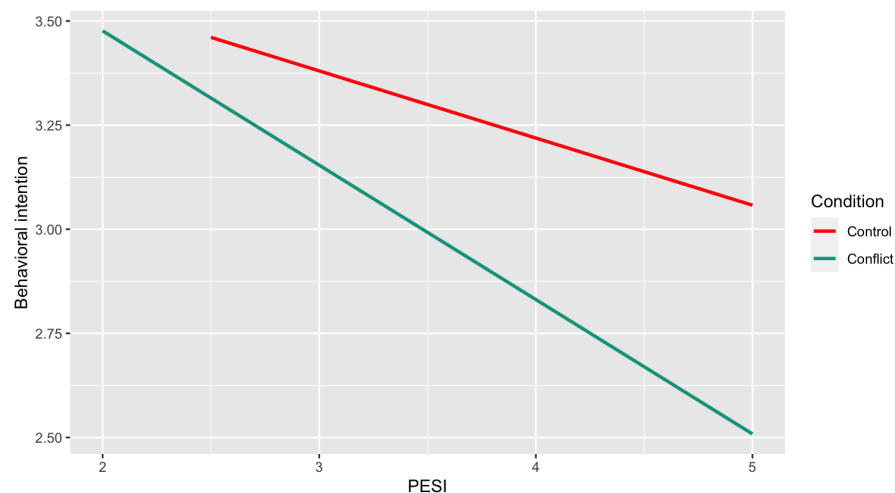
Source: the author

To verify the moderation relations of pro-environmental self-identity (PESI) and self-transcendence (TRANSC), we conducted a linear regression analysis, followed by a Spotlight

analysis. The Spotlight technique is indicated for this type of analysis because it maintains the statistical power available to test the hypothesis, unlike what happens with analysis strategies based on data dichotomization (Fitzsimons, 2008). In addition, the risk of obtaining significant spurious relationships is reduced if the variables analyzed are correlated, being the procedure indicated to test the interaction between two or more variables in experiments in the area of marketing and consumer behavior (Spicer et al., 2013).

It started with the PESI moderation analysis, creating a factor with the answers to the four questions that made up the scale (control condition $M = 3.93$, $SD = 0.64$; conflict condition $M = 3.93$, $SD = 0.54$). Figure 10 shows the interaction between PESI, meat consumption intention, and experimental conditions.

Figure 10 - Interaction between PESI and experimental conditions



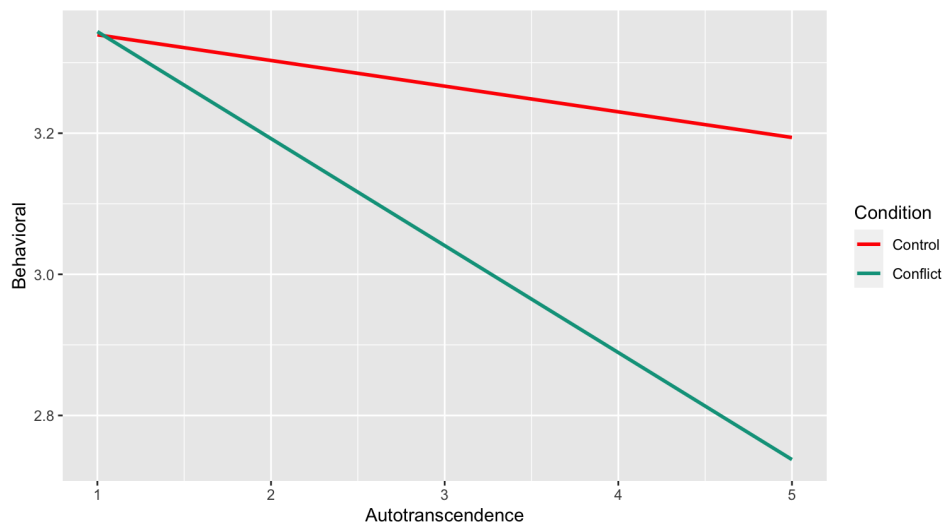
Source: the author

We proceeded the adjustment of the PESI means, centering it on the sample mean. A regression analysis between intention, experimental conditions, and PESI indicated no interaction between the variables ($p > .05$). That is, the PESI does not moderate the intention to eat meat. The only significant interaction was the experimental condition and intention, confirming the result obtained in the previous t-test (β [condition] = -0.38, $t[263] = -3.638$, $p < .001$). Afterward, the conflict condition was placed in contrast codes (coded as zero) as a Spotlight interest condition, and a new linear regression test was performed. The result indicated that PESI moderates intention only in the conflict condition (β [interaction] = -0.16, $t[263] = -2.24$, $p < .05$), supporting partially hypothesis H2.

The moderation analysis of the TRANSC variable in the relationship between normative conflict and consumption intention followed the same sequence of procedures: firstly, a factor was created with the answers to the four questions that make up the scale (control condition $M = 4.00$, $SD = 0.78$; conflict condition $M = 4.24$, $SD = 0.76$).

Figure 11 illustrates the interaction between TRANSC, meat consumption, and experimental conditions, indicating a similar pattern between the two conditions: as self-transcendence increases, consumption intention decreases. The variable was centered on its mean, and the conflict condition was placed in contrast codes. The regression analysis showed no significant interactions between the variables ($p > .05$). Afterward, the conflict condition was placed in contrast codes (coded as zero) as a Spotlight interest condition. A new linear regression test was performed, whose result now indicated interaction only between intention and experimental condition (β [condition]= -0.35, $t[263]= -3.395$, $p < .05$). Thus, hypothesis H3 was also not supported (β [interaction]= -0.11, $t[263]= -0.860$, ns).

Figure 11 - Interaction between self-transcendence and experimental conditions



Source: the author

5.3.2.4. Summary of main findings

The study identified that the conflict between salient norms of different and relevant groups affects meat consumption intention and depends on the dietarian pattern. *Among full meat-eaters, the conflict reduces the intention to eat meat (H1a, supported); among reducers, the conflict does not seem to affect the intention significantly, not supporting the H1b hypothesis.*

Pro-environmental self-identity only moderates the relation between the conflict between the social norm of different groups and intention on conflict situation, supporting partially H3. Self-transcendence do not moderate the relation not supporting the H4.

On the next section we discuss the overall results of this study applying an integrative analysis. The findings are interpreted based on the study's mixed-methods and in the light of the state-of-the-art.

6. INTEGRATIVE ANALYSIS AND GENERAL DISCUSSION

The main goal of the thesis was to investigate the effect of conflicting social norms of different groups on meat consumer behavior. We started exploring the field with a systematic review to identify the previous empirical research on the area and research gaps regarding the effect of social norms on food and meat consumption behavior.

In the second study, we explored the phenomena empirically through a mixed-method study. The first study used in-depth interviews to understand whether normative conflicts are perceived and what effects they would have on behavior. These results were already discussed in section 5.3.1.3. In short, we found that the dominant social norm supports meat consumption, as expected. The findings also indicated that the conflict between the social norms of different groups exists, most between family and peer groups' norms. When the conflict is perceived, it may or may not affect behavior. The effect on behavior appears to result from a feeling of threat to affiliation and from the effort not to let down members of the relevant groups, whether family or peers.

On the one hand, we noticed a greater effect on the behavior of people who have reduced or are willing to reduce meat consumption, with conflict making reduction difficult. In one case, the conflict led to meat reduction. In all cases where there was an effect on behavior, the family's norm seems more potent than the peers' norm in determining the meat consumption pattern. On the other hand, people "at the ends" of the meat consumption continuum (vegetarians and full meat-eaters) seem to be unaffected (or less affected) by the conflict between social norms of different groups. They perceive and report the conflict, but it does not change their behavior.

Previous qualitative research has consistently pointed out that people who reduce or eliminate meat from their diet experience social pressure and that this pressure sometimes leads them to consume more meat than they would otherwise be willing to (Markowski & Roxburgh, 2019; Rosenfeld & Tomiyama, 2019; Salmivaara et al., 2022). Surprisingly, our research findings indicate that conflict only affects reducers. At the same time, people who eat little or no meat in their diet report no effect on behavior, as has been the case in previous research. The lack of effect on meat eaters is expected, given the existing theory that points to eating meat as a well-established social norm (Sparkman & Walton, 2017). Also, several psychological mechanisms, such as cognitive dissonance and denial of animal suffering, "protect" this behavior (Hopwood & Bleidorn, 2019; Piazza et al., 2015).

Consequently, we expected to find opposite effects of the normative conflict between full meat-eaters and reducers in the experimental stage. Among full meat-eaters, conflict was expected to reduce consumption intention. The hypothesis was theory-based (Reed et al., 2012; Giguère et al., 2010; Hirsh & Kang, 2016; Gibson et al., 2020), considering that the conflict takes the person out of his emotional comfort zone, causing, consciously or unconsciously, a reaction. The interviews indicated that meat consumers did not feel affected by the conflict. Despite this, in our experiment, when full meat-eaters were faced with a situation as close as possible to an actual situation of choice, their consumption intention was lower when exposed to normative conflict.

One possible explanation is that when consciously confronted with normative conflict, they used a denial strategy, which works as a self-preservation system by refusing conflict (Giguère et al., 2010; Hirsh & Kang, 2016). Furthermore, the denial process seems to be acting not only on the level of acceptance of the conflict but also on the perception (or acceptance) of the effect of conflict on meat consumption.

In this sense, this finding can be analyzed from the point of view of the under-detected nature of social norms. Since the influence of social norms on behavior is underestimated and under-detected by people (Nolan et al., 2008), so they do not act as external motivators but rather as external motivators that promote intrinsic motivation (Jaeger & Schultz, 2017). As a result, the internal motivation not to eat meat can result from personal issues such as values, personal norms, and ethics and being influenced by under-detected social norms.

Another relevant issue revealed is the strength of the relevant peer group. In the manipulation used, the family norm is favorable to meat consumption, and, even in line with the broader (regional) social norm, it was weakened by the social norm of the peer group. The average age of the experiment participants (39 years) may have influenced it. Unlike the interviewees in the qualitative stage (average age of 27.61 years), they are already at a stage where they either form their family nucleus or already have greater autonomy over the family.

A characteristic of the experiment sample is that it was mainly composed of women. Previous studies indicate that meat consumption is linked to the expression of masculinity (Backer et al., 2020; Rothgerber, 2013; Timeo & Suitner, 2018). Women are more likely than men to stop red meat consumption for environmental reasons (Giacoman et al., 2021), and we cannot exclude the possibility that the percentage of women in the sample may have biased the results. We must also consider that women may be more susceptible to normative conflict than men.

The findings on the behavior of full meat-eaters are relevant because they help to understand this group's decision-making process. These people have the highest level of meat consumption and frequency, and small changes in individual behavior affect on the way to more sustainable diets. Intervention strategies targeting this group are suggested, such as nudges, framing, or indirect messages. When approached (or confronted) on a conscious level, the denial-based conflict coping strategy will lead them down the path of the prevailing social norm.

Concerning studies of meat consumption, reducers have received attention in research, as well as vegetarians. Thus, the hypothesis that reducers would increase their meat consumption in a conflict between the social norms of different groups was based on the findings of in-depth interviews and previous research with reducers (Rosenfeld & Tomiyama, 2019; Salmivaara et al., 2022). In the qualitative stage, only reducers reported the existence of normative conflict. The effects of conflicting norms on their behavior were increased meat consumption to meet, particularly family expectations (favorable to consumption). Reducers participating in the exploratory phase tend to switch identities and adapt their behavior (and the meat consumption) according to the group sharing the meal. When they are with groups with an unsupportive norm to meat intake or alone, they report eating less or even not eating meat; when with the (supportive) family, they eat more meat in quantity and frequency.

Surprisingly, the reducers did not change their intention to consume meat in the face of conflict in the experiment. One possible explanation is that the reducers are already at a more "central" point of the meat consumption *continuum*, already meeting the normative expectations of the two conflicting groups when both are salient. Also, the interviewees reported situations in which there was no concomitant salience of norms. Again, norm salience appears to be essential in the effect of conflict on behavior.

The results lead us to believe that reducers apply different behavioral strategies for different conflict situations, depending on the salience of the norm. The case exposed in the experiment puts the participant in a situation in which he/she cannot practice the strategy of switching identities, in which he/she places more emphasis on an identity aligned with the group norms when they are salient (Giguère et al., 2010).

Another possibility is that the reducers' behavioral intention does not match their actual behavior. Morwitz et al. (2007) describe that the correlation between intention and actual behavior is not linear for all purchases and choices and may vary according to some factors. Studies highlight a gap between intention and behavior in sustainable consumption behavior (Echegaray & Hansstein, 2017; Park & Lin, 2018).

Concerning the influence of sustainability on meat consumption behavior, we found no effect of factors that we expected to moderate the relationship between normative conflict and meat consumption intention. In some ways, this finding is not a surprise. In the interviews, the participants seem to have much information about the impact of meat production and consumption, especially cattle, on the environment. However, often the information was not correct or accurate. Concern for the environment seems to exist, but it does not translate into behavior. For example, animal welfare was the most cited reason related to the reduction or consumption.

Finally, Table 11 summarizes the research's main findings and the possible theoretical explanations, which can be seen as opportunities for future research.

Table 11 – Main findings of empirical research

	Meat consumption pattern		
	Reducers	Full meat-eaters	All participants
Findings from the interviews	<ul style="list-style-type: none"> - Difficulty in maintaining the desired (reduced) consumption pattern in the face of social pressures; - The conflict between norms of different groups increases consumption, especially when they are in the presence of family members. 	<ul style="list-style-type: none"> - Normative conflict, in general, does not affect meat consumption behavior; - When the close family group has unsupportive norm, meat consumption decreases. 	<ul style="list-style-type: none"> - Current regional social norm is supportive to meat consumption; - Family's social norms are supportive to meat consumption; - Family's norms are stronger than peers' norms; - People are informed and concerned about sustainability, but it is not strong enough to change consumer behavior; - Animal welfare is the main argument in favor of reducing meat consumption.
Findings from the experiment	<ul style="list-style-type: none"> - Consumption intention is not affected by normative conflict. 	<ul style="list-style-type: none"> - Normative conflict reduce meat consumption intention. 	<ul style="list-style-type: none"> - Normative conflict reduce meat consumption intention; - Pro-environmental self-identity and transcendence did not moderate the relationship between normative conflict and meat consumption intention.
Possible theoretical explanation to the divergent results	<ul style="list-style-type: none"> - Reducers are already at a more "central" point of the meat consumption continuum; - The identity exchange strategy is used when there is no simultaneity in the salience of group norms; - When conflicting norms are salient, reducers choose the median point of consumption, seeking either to please the two groups or their genuine will. 	<ul style="list-style-type: none"> - They use the denial strategy in the face of conflict, which leads them to deny its existence and its effect on behavior; - The effect of social norms is underdetected, as well as the effect of normative conflict. 	<ul style="list-style-type: none"> - Peer norms have strength, which may result from aligning these norms with normative information from medias; - Behavioral intention does not match their actual behavior.

Source: the author

7. CONCLUSION

The climate crisis has raised questions about meat consumption. In order to contain global warming, policies and actions are needed to preserve biodiversity, reduce greenhouse gas emissions, and make sustainable use of land, water, and energy (Springmann et al., 2020). Changes in production systems, consumer habits and behaviors are fundamental, especially in food consumption (Ivanova et al., 2020). One of these changes is the need for more sustainable consumption behavior, particularly reducing meat consumption in diets.

This behavioral change has a potentially positive effect on sustainability from the point of view of several factors. The world population is growing, and the planet has limited resources to produce the necessary food. Animal-source food provides around 40% of the world's proteins (Parodi et al., 2018), and demand for meat is directly related to the socio-economic condition. Thus, the sum of the growing population and the improvement of socio-economic and nutritional conditions worldwide imposes a challenge.

From the point of view of environmental preservation and reducing global warming, large volumes of meat consumption demand production on an industrial scale. Livestock production in an intensive system is the one that emits the most greenhouse gases and is linked to the ecosystem of preserved areas (Hoelle, 2017). Additionally, they are the ones that provide the lowest level of animal welfare due to confinement practices and exclusive feed. Lower consumption levels reduce pressure on the production system, allowing the continuation of extensive livestock systems in suitable biomes that benefit from this practice (Moreira et al., 2020).

Social norms affect intentions and behaviors (Higgs, 2015) and may be a vector for the necessary dietary changes. Eating is embedded and influenced by the social context (Higgs & Ruddock, 2020) and social norms (Sharps et al., 2020). Also, the acceptance of social norms is a matter of self-expression and survival, from a cultural perspective (Melnik et al., 2022). Therefore, for this reason, it is necessary to understand the effects of normative conflict on eating behavior.

This thesis aimed to investigate the effect of conflicting social norms of different groups on meat consumer behavior. To accomplish that, we first explored the theoretical body of knowledge on social norms and conflicts of social norms of different groups, sustainable diets, and food and meat consumption in our theoretical review. After a systematic review, we identified previous empirical research on the area and research gap regarding theory, context, and method. Based on that finding, we structured our empirical research with meat consumers.

We found that the conflict of social norms of relevant groups affects meat consumption behavior and can reduce meat consumption intention among full meat-eaters. However, the effect of norms on this group appears to be unrecognized or denied by them. The other group of meat consumers, the reducers, on the other hand, report being more aware of the conflict and having more significant emotional discomfort, but there is little impact on their behavior. This group is more clearly exposed to normative conflict, which makes them consciously detect it and develop strategies, although the actual effect on behavior is less than what they reported.

From an integrative analysis of the two stages of the empirical study, we propose that the normative conflict reduces the consumption behavior of meat eaters but that this reduction may not be conscious or known by them as a result of a strategy of denial of conflict (and hence of its effect on behavior). In the case of reducers, we theorize that they may have a greater awareness of conflict at a conscious level and that the strategy they develop to deal with the conflict situation leads to a more linear behavior with the amount of meat consumed.

This has primarily social implications, as reducing meat consumption appears difficult due to several barriers reported in previous research (Cheah et al., 2020; Hielkema & Lund, 2021). The findings indicate that interventions based on the conflict of social norms of different groups can be a tool for reducing meat consumption among groups with higher consumption levels. If indeed a primarily plant-based diet is the way to sustainable diets and deals with the global warming crisis, the conflict between social norms seems to be a way to be attentively explored by social marketing. In addition, accurate information on both the benefits and negative impacts of meat production and consumption should be disclosed. In particular, there is the challenge of achieving effective changes in consumption behavior in search of more sustainable diets.

From a managerial point of view, the thesis contributes with companies and practitioners providing information on the behavior of meat consumers. Both companies in the meat production chain and companies whose business model is based on new proteins or substitute proteins can take advantage of our findings as an input for their marketing and communication strategies. For example, it is clear to us that reducers and full meat-eaters react differently to conflict and should therefore be approached in a different way.

The research explores, for the first time, the conflict between different groups through an exploratory study. Previous studies approached this theoretical gap through a quantitative and descriptive research strategy (McDonald et al., 2013, 2014a, 2014b). The results collaborate with the development of the Focus Normative of Normative Conduct by a) systematizing the types of normative conflicts; c) deepening knowledge of meat-eating behavior and social norms

through consumer interviews; and d) empirically testing through an experiment how conflicting norms affect the intent of meat-eating behavior. Further, we identified opportunities for future research applying social norms to reduce meat consumption, which, as far as we aware, is unprecedented in the literature.

The findings should be seen within the context of certain limitations. All research has limitations, and then we will point out the main limitations of the methods used in the thesis. In the systematic review, the user databases, the research stream, the adopted filtering process, and the selected type of literature may have omitted some relevant studies. The search strategy sought research in which social norms were the independent variable. I filtered the results, excluded most papers using the Theory of Planned Behavior (TPB), and analyzed research on extended theory models. TPB is widely used in studies on consumer behavior and considers injunctive norms as moderating variables (Hassan et al., 2016). Future studies could use different inclusion and exclusion criteria, databases, and filtering strategies to have different results and can amplify the sample, including works based on TPB.

Regarding the empirical study, the data were collected in only one geographic region, and future studies may include more cases and samples from different countries and cultures. The qualitative stage focuses on a restricted number of cases that do not allow generalizations. Given the study's exploratory nature, the recruitment method did not intend to get a representative sample of the population but to yield a diverse group of participants in terms of gender, age, educational level, and socio-economic status.

In the experiment, more studies should be conducted with more extensive and diverse samples in different countries, seeking to generalize the results. Regarding the moderation variables, both scales were translated from English, and the self-transcendence is an adaptation of the original scale, which may have caused changes in the language that affect the efficiency of the measures. New studies may seek to validate these scales in Portuguese. Future studies can explore if specific psychological traits (i.e., self-esteem, self-enhancement, self-control) or values may influence the effect of norm conflict on behavior. Also, it may investigate the strategies used by reducers in situations of misalignment of norms, exploring the conflict between injunctive and descriptive norms (within the group), the conflict between groups with different importance for self-identity, and designs among subjects with situations that only the norm of a group is prominent each time.

Additionally, other untested influences may have influenced the non-acceptance of the proposed hypotheses and should be verified and controlled in future research. We recommend

more empirical studies, especially field experiments with actual behavior, to deepen understanding of the topic, considering it is a complex and emergent them.

Finally, the normative conflict related to meat consumption is as ambiguous as it sounds. This thesis is a first step towards trying to understand this complex dynamic of interaction between self-identity, groups, social norms and meat consumption, embedded in a context of urgent climate crisis.

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APPENDIX 1

Interview Script

Questão	Dimensão
0.Como está sua vida nesse momento?	Introdução
1.De que forma você se mantém atualizado/a das notícias? (jornal impresso, <i>on line</i> , TV, radio, instagram, facebook...)?	Identificar fonte informações
2. Quais jornais? Quais redes sociais?	Identificar fonte informações
3.Falando um pouco de ti:	
- Pratica algum esporte?	Identificar auto-identidade e grupos
- Está envolvido com alguma atividade regular (artística, musical, política, religiosa, voluntária, educacional, hobby)?	Identificar auto-identidade e grupos
- Você tem filhos? Quantos? Idade? Estudam? Você faz parte de grupo de pais/mães? - Você tem animais de estimação? Qual(is)? Quantos? Você faz parte de grupo de donos?	Identificar auto-identidade e grupos
- Tu moras com quem?	Identificar grupos relevantes
- Qual sua formação/estuda o quê? Trabalha? Em quê (atividade profissional)? - Pensando nos teus grupos de amigos (virtuais ou reais), quais grupos são mais importante para ti? Não conseguiria viver sem - Quem tu definiria como tua família mais próxima?	Identificar auto-identidade e grupos Identificar grupos relevantes Identificar grupos relevantes
10. Em relação à sua alimentação	
- Como você definiria sua dieta?/como tu te alimenta?	- identificar perfil dietético
- Como você costuma fazer suas refeições? (em casa? cozinha? Come fora? pede comida? sozinho, na companhia alguém?)	- identificar hábitos alimentares
- Você consome carne na sua dieta? - De qual tipo (bovina, frango, peixe, porco)?	- identificar perfil dietético - identificar padrão de consumo de proteínas animal

Questão	Dimensão
<p>- E outras proteínas animal? (ovos, leite, queijo, manteiga)?</p> <p>13. Qual seu consumo aproximado diário/semanal de carne bovina (em gramas, porções, reais...)?</p> <p>- Se não come: qual o motivo? Há quanto tempo? Como substitui? Quais produtos (naturais, miméticos)?</p>	<p>- identificar padrão de consumo de proteínas animal</p> <p>- identificar padrão de consumo de carne vermelha</p> <p>- identificar padrão de consumo de carne vermelha</p>
<p>13. Onde compra carne bovina/substitutos? O que leva em consideração na compra? Para cozinhar ou já pronta?</p>	<p>- identificar padrão de compra de carne vermelha</p>
<p>14. Em qual refeição ou situação você costuma consumir mais carne bovina?</p>	<p>- identificar padrão de consumo de carne vermelha</p>
<p>15. Em relação ao consumo de carne bovina, houve alguma mudança no consumo nos últimos 12 meses (por exemplo, tipo de alimento e quantidade)? Se sim, qual motivo (saúde, ambiental, financeiro, etc)?</p> <p>16. Onde você vive você diria que as pessoas costumam carne bovina? Isso é um padrão?</p>	<p>- identificar mudanças no padrão de consumo de carne vermelha</p> <p>- identificar norma social vigente</p>
<p>16. Pensando nos grupos que falamos anteriormente: essas pessoas costumam comer carne? Qual o consumo aproximado de carne bovina das pessoas desses grupos na sua opinião?</p> <p>- Se há diferença: conflito? Como resolve?</p>	<p>- identificar perfil de consumo de carne dos grupos relevantes</p>
<p>17. Seus pais/familiares costumam comem carne? Como eram as refeições da sua família na sua infância?</p> <p>- Se família sim e pessoa não: conflito? Como resolve?</p>	<p>- identificar perfil de consumo de carne dos grupos relevantes</p> <p>- hábitos grupos relevantes (família)</p>
<p>18. O que tu pensas sobre o consumo de carne bovina?</p>	<p>- opinião</p>
<p>19. Você se sente pressionado de alguma forma para mudar seu padrão de consumo de carne (frequência, quantidade, tipo)? Como? Por quem?</p>	<p>- pressão para mudança no padrão de consumo</p>

Questão	Dimensão
<p>20. Se sim, essa pressão resultou em alguma mudança (na alimentação ou sobre o que diz que se alimenta)? Quais?</p> <p>21. Tu diria que é um pensamento comum “as pessoas devem reduzir seu consumo de carne”?</p>	<p>- mudança</p> <p>- norma social dinâmica</p>
<p>21. Qual é teu nível de preocupação com questões ambientais (baixo, médio, alto)? Cite ações/comportamentos que manifestem essa preocupação? Ação deliberada</p>	<p>- PESI</p>
<p>22. Demográficos: gênero, idade, nível de escolaridade, cidade onde vive (urbano ou rural)</p>	<p>- demográfico</p>

APPENDIX 2

Instrument – experiment

Início do bloqueio: Intro

intro Olá! Você está sendo convidado(a) a participar de uma pesquisa sobre comportamento do consumidor.

A pesquisa é conduzida pelos pesquisadores Cristina Ostermann, Laís Trevisan, Lucimari Pereira, Profa. Márcia Barcellos e Prof. Leonardo Nicolao, e está vinculada ao Programa de Pós-Graduação em Administração da Universidade Federal do Rio Grande do Sul (PPGA/UFRGS).

A sua participação nesta pesquisa é **voluntária e anônima** e consistirá em preencher um questionário on-line que leva cerca de **05 minutos** para ser concluído.

Certifique-se de que terá tempo suficiente e um ambiente adequado para completá-lo. Procure um lugar silencioso e sem distrações que prejudiquem sua atenção.

Os benefícios de sua participação são a oportunidade de refletir sobre questões relacionadas a seu comportamento de consumo e contribuir para a construção de conhecimento científico e os riscos da pesquisa são considerados mínimos. Você pode interromper o preenchimento do questionário e desistir de participar a qualquer momento, sem qualquer prejuízo ou constrangimento para você. Caso não queira participar do estudo, você não precisa aceitar esse termo. Essa pesquisa é direcionada para pessoas maiores de 18 anos.

Os resultados da pesquisa serão publicados posteriormente como capítulo de livro ou artigo científico, sempre com o seu anonimato e privacidade assegurados.

Em caso de dúvidas, você pode entrar em contato com as pesquisadoras:

Cristina Ostermann - cris.ostermann@gmail.com

Laís Trevisan - laisvtrevisan@gmail.com

Lucimari Pereira - lucimari.svp@gmail.com

Agradecemos desde já sua disponibilidade!

1. Aceito participar do estudo e tenho mais de 18 anos (1)
2. Não aceito participar do estudo/tenho menos de 18 anos (2)

Pular para: Fim da pesquisa Se Olá! Você está sendo convidado(a) a participar de uma pesquisa sobre comportamento do consumidor... = Não aceito participar do estudo/tenho menos de 18 anos

Fim do bloco: Intro

Início do bloqueio: descompressao

descompressao A seguir apresentamos um texto curto, o qual pedimos que você leia com muita atenção. Imagine a situação proposta da forma mais real possível e procure detalhar na sua mente as ideias, pensamentos e sentimentos que você vivenciaria nessa situação.

Fim do bloco: descompressao

Início do bloqueio: condicaoconflito

conflito É seu aniversário e você convidou dois grupos para um almoço de comemoração na sua casa: seus melhores amigos/as e seus familiares mais próximos e importantes para você. É domingo ao meio-dia e o menu oferecido é churrasco de carne bovina e vários tipos de legumes assados na grelha. Há bastante quantidade de carnes e legumes para todos. No momento em que a comida é servida, seus familiares aceitam a carne. Já seus amigos/as recusam a carne. Seus familiares acham isso estranho e perguntam se eles não ficarão com fome. Seus amigos explicam que evitam comer carne porque têm pena dos animais e por causa do impacto ambiental da indústria da carne. Dizem que as pessoas devem evitar consumir carne nas suas dietas para que tenhamos um mundo melhor. Seus familiares respondem que comem carne porque é bom, saudável e normal. Dizem que as pessoas devem comer carne e que isso não impede de termos um mundo melhor. Nesse momento, após servir os convidados, é o momento de você servir seu prato.

Fim do bloco: condicaoconflito

Início do bloqueio: condicaocontrole

controle É seu aniversário e você convidou dois grupos para um almoço de comemoração na sua casa: seus melhores amigos/as e seus familiares mais próximos e importantes para você. É domingo ao meio-dia e o menu oferecido é churrasco de carne bovina e vários tipos de legumes assados na grelha. Há bastante quantidade de carnes e legumes para todos. No momento em que a comida é servida, todos presentes se servem. A conversa flui de forma animada entre os presentes enquanto comem. Os assuntos giram em torno das notícias do jornal e das redes sociais, uns comentam sobre o clima na região, outros sobre os parques da cidade e alguns contam histórias que ocorreram durante a semana. Um dos seus amigos fez uma viagem interessante e conta detalhes e curiosidades sobre o local visitado. Um dos seus familiares já visitou esse local e os dois trocam ideias e experiências sobre a geografia e a cultura de lá. Nesse momento, após servir os convidados, é o momento de você servir seu prato.

Fim do bloco: condicaocontrole

Início do bloqueio: Medicao do efeito

intencao Por favor indique a opção que melhor representa a sua escolha de alimentos nessa ocasião.

	Somente legumes (1)	Maior parte legumes, pouca carne (2)	Mesma quantidade de carne e legumes (3)	Maior parte carne, poucos legumes (4)	Somente carne (5)
Seu prato seria composto por: (1)	3.	4.	5.	6.	7.

Fim do bloco: Medicao do efeito

Início do bloqueio: Perfil

perfil_intro Agora queremos conhecer um pouco de você. Por favor responda:



idade Qual a sua idade? (ex: 22, 45... somente números)

genero Qual o seu sexo?

- 8. Feminino (1)
- 9. Masculino (2)
- 10. Outro/Prefiro não responder (3)

education Qual seu nível educacional?

- 11. Estou cursando ou já terminei o ensino fundamental e/ou médio (1)
 - 12. Estou cursando a graduação (2)
 - 13. Terminei a graduação (4)
 - 14. Estou cursando ou já terminei a pós graduação (7)
-

Quebra de
página

consumocarne Em um mês normal, qual a frequência aproximada do seu consumo de carne (bovina, frango, porco, peixe, etc.)?

15. Menos de 1 dia por semana ou nunca (1)
16. De 1 a 2 dias por semana (7)
17. De 3 a 4 dias por semana (9)
18. De 5 a 6 dias por semana (10)
19. 7 dias por semana (11)

identidadecarne Avalie seu padrão geral de consumo de carne selecionando uma das seguintes afirmações:

20. Eu como carne na minha dieta (1)
21. Eu como carne na minha dieta, mas com restrições de quantidade e/ou tipo (2)
22. Eu não como carne na minha dieta (6)

reductor Você tem feito esforços para reduzir seu consumo de carne (sem que seja por motivos financeiros)?

23. Sim (1)
24. Não (2)

tipos Quais tipos de alimentos de origem animal você come? Selecione todas as opções que você quiser; se você não come, deixe em branco.

1. Bovina (1)
2. Frango (2)
3. Porco (3)
4. Peixe (4)
5. Frutos do mar (camarão, marisco, etc.) (5)
6. Embutidos (linguiça, salame, salsicha, presunto, etc.) (6)
7. Outras carnes (cordeiro, ovelha, etc.) (7)
8. Laticínios (queijo, creme de leite, iogurte, leite, requeijão, etc) (8)
9. Ovos (9)

Fim do bloco: Perfil

Início do bloqueio: moderadores



pesi Indique seu grau de concordância com as seguintes afirmações:

	Discordo totalmente (1)	Discordo parcialmente (2)	Nem concordo nem discordo (3)	Concordo parcialmente (4)	Concordo totalmente (5)
Me considero um consumidor ecologicamente correto. (1)	25.	26.	27.	28.	29.
Me considero alguém muito envolvido com questões ambientais. (2)	30.	31.	32.	33.	34.
Eu teria vergonha de ser visto como alguém que possui estilo de vida ecologicamente correto. (3)	35.	36.	37.	38.	39.
Não gostaria que minha família ou amigos pensassem em mim como alguém preocupado com questões ambientais. (4)	40.	41.	42.	43.	44.



autotranscendencia Agora, indique seu grau de concordância com afirmações a seguir:

	Discordo totalmente (1)	Discordo parcialmente (2)	Nem concordo nem discordo (3)	Concordo parcialmente (4)	Concordo totalmente (5)
Sinto que minha vida individual é parte de um todo maior. (1)	45.	46.	47.	48.	49.
Sinto uma grande sensação de pertencimento tanto às gerações passadas quanto às gerações futuras. (2)	50.	51.	52.	53.	54.
Toda a vida está interconectada. (3)	55.	56.	57.	58.	59.
Sinto que todos nós compartilhamos um vínculo comum. (4)	60.	61.	62.	63.	64.

Fim do bloco: moderadores

Início do bloqueio: manipulationcheck

manipulationcheck Por fim, qual o seu grau de concordância com a afirmação abaixo?

	Discordo totalmente (1)	Discordo parcialmente (2)	Nem concordo nem discordo (3)	Concordo parcialmente (4)	Concordo totalmente (5)
Havia conflito entre o grupo de amigos e o grupo de familiares na situação apresentada no texto (1)	65.	66.	67.	68.	69.

Fim do bloco: manipulationcheck

APPENDIX 3

R Scripts

```
require(readr)
library(questionr)
library(knitr)
require(ggplot2)
require(psych)
require(wesanderson)

Condicao <- ccbase$`2_DO`
table(Condicao)
summary(ccbase$idade)
mean(ccbase$idade, na.rm = T)
sd(ccbase$idade, na.rm = T)

table(ccbase$genero)
t.genero <- freq(ccbase$genero, digits = 2, exclude = NA, total = T)
kable(t.genero, caption = "Distribuição de Respondentes por Gênero")

table(ccbase$education)
t.education <- freq(ccbase$education, digits = 2, exclude = NA, total = T)
kable(t.education, caption = "Distribuição de Respondentes por Nível Educacional")

table(ccbase$consumocarne)
t.consumo <- freq(ccbase$consumocarne, digits = 2, exclude = NA, total = T)
kable(t.consumo, caption = "Frequência de consumo de carne entre os respondentes")

table(ccbase$identidadecarne)
t.identidadecarne <- freq(ccbase$identidadecarne, digits = 2, exclude = NA, total = T)
kable(t.identidadecarne, caption = "Padrão de consumo auto-relatado pelos respondentes")
table(ccbase$reductor)
t.reductor <- freq(ccbase$reductor, digits = 2, exclude = NA, total = T)
kable(t.reductor, caption = "Respondentes que se identificam como redutores")
```

```

table(ccbase$tipos)
t.tipos <- freq(ccbase$tipos, digits = 2, exclude = NA, total = T)
kable(t.tipos, caption = "Tipos")

#Explorando as condições 1 e -1
table(ccbase$`2_DO`)
ccbase$condicao.f<-factor(ccbase$`2_DO`, levels = c("-1","1"), labels = c("Control","Conflict"))

t.condicao<-freq(ccbase$condicao.f, digits = 2, exclude = NA, total = T)
kable(t.condicao, caption = "Respondentes por condição")
mean(ccbase$intencao_1, na.rm = T)

#Explorando os padroes 1 e -1
table(ccbase$identidadecarne)
ccbase$identidade.f<-factor(ccbase$identidadecarne, levels = c("-1","1"), labels = c("Meat eater","Reducer"))

t.identidade<-freq(ccbase$identidade.f, digits = 2, exclude = NA, total = T)
kable(t.identidade, caption = "Respondentes por padrão")
mean(ccbase$intencao_1, na.rm = T)

#medias intencao por condicao
t.intencao.cond <- describeBy(ccbase$intencao_1, ccbase$condicao.f, mat = 2, digits = 2)
rownames(t.intencao.cond)<-NULL
names(t.intencao.cond)[2]<-"Condição"

kable(t.intencao.cond[,c(2,4:6)])

#medias intencao por padrao
t.intencao.ident <- describeBy(ccbase$intencao_1, ccbase$identidade.f, mat = 2, digits = 2)
rownames(t.intencao.ident)<-NULL
names(t.intencao.ident)[2]<-"Condição"
kable(t.intencao.ident[,c(2,4:6)])

#Teste t condições
t.test(ccbase$intencao_1~ccbase$condicao.f, var.equal = T)

```

```
#Teste t identidades/padroes
```

```
t.test(ccbase$intencao_1~ccbase$identidade.f, var.equal = T)
```

```
###Teste Hipotese H1a e H1b
```

```
##O conflito entre normas sociais de diferentes grupos sobre consumo de carne causa diminuição na intenção de consumo de carne nas pessoas que consomem carne sem restrição (COMEDORES)
```

```
#Table Condição versus Intenção
```

```
t.cond <-data.frame(table(ccbase$condicao.f,ccbase$identidade.f))
```

```
colnames(t.cond)<-c("Padrao Consumo","Condicao","Freq.")
```

```
kable(t.cond,caption = "Número de respondentes por condição")
```

```
#Table Padrão versus condicao versus Intenção
```

```
ccbase.padrao<-describeBy(ccbase$intencao_1,list(ccbase$condicao.f,ccbase$identidade.f),mat = TRUE,digits = 2)
```

```
names(ccbase.padrao)[names(ccbase.padrao) == 'group1'] = "Condição"
```

```
names(ccbase.padrao)[names(ccbase.padrao) == 'group2'] = "Padrão Consumo"
```

```
row.names(ccbase.padrao) <-NULL
```

```
kable(ccbase.padrao[,c(2,3,5:7)])
```

```
##Gráficos
```

```
ggplot(ccbase.padrao, aes(x=`Condição`, y=mean))+
  geom_bar(stat = "identity", width = 0.5, fill = "lightblue")+
  geom_errorbar(aes(ymax = mean + (1.96*se), ymin=mean - (1.96*se)),
    position=position_dodge(width=0.9), width=0.25)+
  # coord_cartesian(ylim = c(1, 3))+
  labs( y="Intention", x="Conditions")
```

```
ggplot(ccbase.padrao, aes(x=`Padrão Consumo`, y=mean))+
  geom_bar(stat = "identity", width = 0.5, fill = "lightblue")+
  geom_errorbar(aes(ymax = mean + (1.96*se), ymin=mean - (1.96*se)),
    position=position_dodge(width=0.9), width=0.25)+
  # coord_cartesian(ylim = c(1, 3))+
  labs(y="Intention", x="Consumption Group")
```

```
#####ANALISE
```

```
#Anova Padrao
```

```
anova.identcond <- aov(intencao_1 ~ identidade.f*condicao.f, data = ccbase)
```

```
summary(anova.identcond)
```

```
TukeyHSD(anova.identcond)
```

```
require(lsr)
```

```
etaSquared(anova.identcond)
```

```
#Regressao
```

```
reg.padrao <- lm(intencao_1 ~ padrao.f*condicao.f, data = ccbase)
```

```
summary(reg.padrao)
```

```
table(ccbase$condicao.f)
```

```
ccbase$padrao.f<-factor(ccbase$identidadecarne, levels = c(1,2), labels = c("Comedores", "Redutores"))
```

```
ccbase$condicao.f<-factor(ccbase$FL_8_DO, levels = c(1,2), labels = c("Control", "Conflict"))
```

```
t.cond <-data.frame(table(ccbase$condicao.f,ccbase$padrao.f))
```

```
colnames(t.cond)<-c("Padrao Consumo","Condicao","Freq.")
```

```
kable(t.cond,caption = "Número de respondentes por condição")
```

```
kable(dados.at[,c(2,3,5:7)])
```

```
#Spotlight: deslocar” o ZERO do meio para o valor POSITIVO
```

```
#Na condição: -1 = colocamos foco na condição de interesse , que vira a zero
```

```
dados$condicao.pos <- dados$condicao.cc -1
```

```
table(dados$condicao.pos, dados$condicao.cc)
```

```
#PS: a interação com as mudanças -1 ou +1 permanece a mesma - o único afetado é o intercept
```

```
##Teste moderação PESI
```

```
#Grafico moderação PESI
```

```
interaction.graph <- ggplot(ccbase) +
```

```
  aes(x = pesi, y = intencao_1, color = condicao.f) +
```

```
  geom_smooth(method = "lm", se = FALSE)+
```



```

labs (x = "PESI", y = "Behavioral intention",
      color = "Condition")+
scale_color_manual(values=wes_palette(n=3, name="Darjeeling1"))
interaction.graph
#Centrar o PESI na media
ccbbase$pesimedia <- ccbbase$pesi - mean(ccbbase$pesi, na.rm = T)

#Anova PESI
anova.pesi <- aov(intencao_1 ~ pesi*condicao.f, data = ccbbase)
summary(anova.pesi)

#Regressão
reg.inter.pesi1 <- lm(intencao_1 ~ pesimedia*condicao.f, data = ccbbase)
summary(reg.inter.pesi1)

#Condição conflito como ZERO
ccbbase$condicao.posconflito <- ccbbase$FL_8_DO -2
table(ccbbase$condicao.posconflito, ccbbase$FL_8_DO)

#Regressao linear (lm) com conflito como ZERO
reg.inter.pesi <- lm(intencao_1 ~condicao.posconflito*pesimedia, data = ccbbase)
summary(reg.inter.pesi)

#Condição CONTROLE como ZERO
ccbbase$condicao.poscontrole <- ccbbase$FL_8_DO -1
table(ccbbase$condicao.poscontrole, ccbbase$FL_8_DO)
#Regressao linear (lm)
reg.inter.pesicontrole <- lm(intencao_1 ~condicao.poscontrole*pesimedia, data = ccbbase)
summary(reg.inter.pesicontrole)

###Teste moderação AUTOTRASCENDENCIA

#Grafico moderação AUTOTRASCENDECIA
interaction.graph1 <- ggplot(ccbbase) +
  aes(x = transc, y = intencao_1, color = condicao.f) +
  geom_smooth(method = "lm", se = FALSE)+

```

```

labs (x = "Autotranscendence", y = "Behavioral",
      color = "Condition")+
scale_color_manual(values=wes_palette(n=3, name="Darjeeling1"))
interaction.graph1

#Anova AUTOTRASCENDENCIA
anova.transc <- aov(intencao_1 ~ transc*condicao.f, data = ccbase)
summary(anova.transc)

#Regressão antes de trazer o conflito para o ZERO
reg.inter.transc1 <- lm(intencao_1 ~ transc*condicao.f, data = ccbase)
summary(reg.inter.transc1)

#Condição conflito como ZERO
ccbase$condicao.posconflito <- ccbase$FL_8_DO -2
table(ccbase$condicao.posconflito, ccbase$FL_8_DO)
#Centrar a AUTOTRASCENDENCIA na media
ccbase$transcmedia <- ccbase$transc - mean(ccbase$transc, na.rm = T)
#Regressao linear (lm)
reg.inter.transc <- lm(intencao_1 ~transcmedia*condicao.posconflito, data = ccbase)
summary(reg.inter.transc)

#Condição CONTROLE como ZERO
ccbase$condicao.poscontrole <- ccbase$FL_8_DO -1
table(ccbase$condicao.poscontrole, ccbase$FL_8_DO)
#Regressao linear (lm)
reg.inter.transccontrole <- lm(intencao_1 ~condicao.poscontrole*transcmedia, data = ccbase)
summary(reg.inter.transccontrole)

```

APPENDIX 4

Academic production related to the thesis

a) Articles based on the thesis presented at conferences

OSTERMANN, Cristina M.; BROCK, A. L., BARCELLOS, M. D.. *Conflict among social norms of different groups and their effects on consumer behavior*. In: XXIII Semead, 2020, São Paulo. Conflict among social norms of different groups and their effects on consumer behavior, 2020.

OSTERMANN, Cristina M.; BARCELLOS, M. D.. *Social Norms and Food and Drink Consumption Behavior: a review and future research agenda*. In: Enanpad 2021, 2021, on line. Anais Enanpad 2021, 2021.

OSTERMANN, Cristina M.; BARCELLOS, M. D.. *Conflicts in Meat Consumption: exploring their effects on social norms and consumer behavior*. In: 20th EUROPEAN ROUNDTABLE ON SUSTAINABLE CONSUMPTION AND PRODUCTION, 2021, Graz. Proceedings of the 20th EUROPEAN ROUNDTABLE ON SUSTAINABLE CONSUMPTION AND PRODUCTION. Graz: Verlag der Technischen Universität Graz, 2021. p. 449-467.

OSTERMANN, Cristina M.; BARCELLOS, M. D. . *Conflicting social norms of different groups and the effect on meat consumption: an exploratory study*. In: II Congreso Internacional de la Asociación Iberoamericana de Marketing. Universidad Anáhuac México. 2022.

OSTERMANN, Cristina M.; TREVISAN, L.V; PEREIRA, L. A.; NICOLAO, L.; BARCELLOS, M. D.. *The reducing effect of social norms conflict on meat consumption intention of meat eaters*. In: XXV Semead, 2022, São Paulo. (Accepted to presentation and to the Sapiens - Scientific Studies Improvement Sessions)

OSTERMANN, Cristina M.; TREVISAN, L.V; PEREIRA, L. A.; NICOLAO, L.; LEAL FILHO, W., BARCELLOS, M. D.. *Conflict of social norms of different groups and meat consumption: an experimental study*. In: 4th International Conference Sustainable Consumption and Production: How to Make It Possible, 2022, KTU Santaka Valley, Kaunas, Lithuania. (Accepted to presentation)

b) Manuscript under review:

OSTERMANN, Cristina M.; BARCELLOS, M. D.. *Building a future research agenda for reducing meat consumption: a review on social norms, food and drink*. Revista Innovar (Colombia, Scimago Q3). Under review since march/2022.