

Understanding Boredom in Online Commerce: A Systematic Literature Review

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Abstract

Boredom is a ubiquitous emotion, whether in a moral, social, or practical sense. In the context of digital communications and business, extensive research has explored the ways in which this adverse sentiment influences the utilisation of digital technology. However, these studies have ignored this phenomenon in the context of online commerce. The present work aims to assess knowledge on boredom in this context. Through a review of 103 studies using grounded theory method for rigorous literature review, an inductive framework using five building blocks is built. From an individual's perspective, the framework foregrounds that boredom is caused by individual, situational, and their mismatch factors. As a result of boredom's self-regulatory function, individuals often search for internal and external stimulation from social commerce, resulting in both positive and negative outcomes. The findings of this study indicate that boredom is both a performance and a health barrier; however, proper understanding and intervention tactics that utilise constructive alleviation strategies can lead to promising results in self-development. Furthermore, the findings also indicate how regulated and unregulated boredom affects the market performance of online commerce and how preventing and regulating this emotion can lead to sales.

Keywords: Boredom; Online Commerce; Social Media; Online Buying; Grounded Theory, Digital Technology.

1 Introduction

It has been argued in the field of evolutionary biology that without boredom, mankind could never have advanced further than other species. The avoidance of boredom is what ultimately sparked our ancestors to rub sticks together to create fire or create the wheel to carry heavy loads. (Whelan et al. 2020, p. 871)

The preceding quotation illustrates the significance of boredom for advancement in life. Being a functional emotion, it alerts us to any monotonous, meaningless, and unsatisfactory states

and motivates us to do something about it. It keeps us in line with our desired interests and meaningful goals, leading towards life satisfaction and development.

The Covid-19 pandemic and lockdowns have intensified boredom experiences. With limited social connections and outdoor activities, people shift towards online platforms, like social media, for engagement to occupy themselves in this free time (Catedrilla et al. 2020; Deng et al. 2020). Even though the pandemic caused unstable consumption, leading to market vulnerability, online shopping still thrived. There were two reasons for this overconsumption: one was to reduce the risk of getting ill from going outdoors and the other was to alleviate boredom (Güngördü 2022). Overall, research findings recognise the development of unregulated online consumption and digital technology usage to evade boredom.

Boredom is generally defined as “the aversive experience of wanting but being unable to engage in a stimulating and satisfying activity” (Fahlman et al. 2013, p. 69). It is associated with meaningless and monotonous experiences which cause dissatisfaction. It’s affective, cognitive, and functional features contribute to its uniqueness, as they ensure that it is a self-regulatory emotion. It seeks to find alternatives when the current situation is unattractive, unsatisfactory, or meaningless (Bench & Lench 2013; Elpidorou 2015; Pekrun et al 2010; Van Tilburg & Igou 2012). Boredom differs from other negative emotions more so than they differ from each other. Its existential nature, inattention, and low arousal features make it distinctive. Among other negative emotions, it is characterised as having the least negative affective valence, in that it is only mildly unpleasant (Van Tilburg & Igou 2017). Boredom matters not only because it affects a large percentage of our population but also because it teaches us how to embody ourselves in our worldly projects and social affairs. It matters because it keeps us in line with our goals and safeguards our interest by facilitating self-regulation (Elpidorou 2015). Despite its uniqueness, this “silent emotion” has received little attention compared to other negative emotions like anxiety, anger, depression, and loneliness (Eastwood et al., 2012).

Boredom is mostly understood as an informal term, and its relationship with its characteristics, consequences, and antecedents are poorly recognised (Raffaelli et al. 2018). How it affects people’s thoughts, behaviour, and social environment is still being questioned (Fahlman et al. 2013). To date, an understanding of the nature of boredom has still not been fully achieved and there is no consensus on how to define it (Vodanovich & Watt 2015). In fact, this affective state “remains a construct that is difficult to define” (Elpidorou 2018, p. 2). In digital technology studies, boredom has been given definitions such as “a state of mental weariness and dissatisfaction produced by lack of interest or activity” (Blaszczynski et al. 1990, p. 36); a state of “under-stimulation, under-arousal, and lack of psychological involvement associated with dissatisfaction, [whereby] individuals try to cope with boredom by seeking additional stimulation” (Biolcati et al. 2018, p. 304); or “cognitive changes in the direction of less differentiated and more homogeneous construing [that] give rise to a state of subjective monotony which induces, or perhaps even represents, the state” (Perkins & Hill 1985, p. 231). Circularity (incorporating antecedent and outcome variables and having hypothesis type statements such as homogeneity, less differentiation, and lack of interest cause/increase boredom) and unclear/ambiguous terminologies (i.e., not stating the kind of activity or stimulation) in these definitions hinders a conceptual clarity of boredom.

The topic of boredom opens a number of avenues for research, especially in consumer behaviour and technology usage. Understanding its influence on online buying decisions and well-being is crucial for marketers and policymakers. It is linked with modernism for it enables self-regulation through the desire for technological change and usage, which can be for the better or worse. Previously, studies on boredom primarily focused on education (Derakhshan et al. 2022; Pawlak et al. 2021) and psychology (Meier et al. 2024; Belinda et al. 2024). However, it has recently gained momentum in the context of digital technology and online commerce. (Allaby & Shannon 2020; Drach et al. 2021; Throuvala et al. 2019).

Online commerce is defined as “the sale and purchase of products and services over the Internet” (Keeney 1999, p 533). The number of online users are increasing every year. It has been reported that 5.35 billion people using the internet in 2024, equating to 66.2 percent of the world’s total population. Internet users have grown by 1.8 percent over the past year, with 97 million new users coming online for the first time during 2023 (Kemp 2024). The same increase can be seen in the use of different digital technologies, like social media, e-commerce, s-commerce (Statistica 2022), and its prospects are proving a big attraction for marketers and businesses which most boredom studies appear to have overlooked. Moreover, no conceptual definition of boredom exists in the online commerce context (see table A.1 of Appendix A). Previous studies have used either general or unclear definitions of boredom when attempting to understand it in the online context. We currently lack a comprehensive understanding of this phenomenon, for which we need to define in this context.

This study recognises the gap in the literature and the need for boredom research in the online commerce context. The present study aims to conduct a rigorous literature review of current knowledge on this topic to answer the research questions: RQ1: What is the conceptual definition of boredom in online commerce? RQ2: How does boredom function in online commerce? (a) What are boredom’s antecedents in online commerce? (b) What are boredom’s alleviation strategies in online commerce? (c) What are the consequences of boredom in online commerce?

This is the first study of its kind to define boredom exclusively in the context of online commerce, thereby filling the gap in the literature. It offers an inductive framework (see Figure 2 in the Findings section) that proposes the potential antecedents, mediators, moderators, and outcomes of boredom in the online commerce context to respond to future research queries on boredom. This research confirms the applicability of boredom theories in the online commerce context, the study of which is absent in past literature. Lastly, this study has important implications related to constructively regulating boredom to improve the well-being of individuals and the profitability of associated businesses.

Consistent with the breadth of the study’s research questions, the present study adopted an inductive approach using techniques borrowed from grounded theory for rigorous review (Wolfswinkel et al. 2013) and reviewed 103 studies. Based on the literature analysis, this study discusses boredom from an individual’s perspective as a common negative state conceptualised by individual and situational factors. It has a functional self-regulatory feature that encourages individuals to seek stimulation online, resulting in detrimental and beneficial well-being outcomes. Then this study, based on the review, defines boredom in the online commerce context from a functional point of view at an individual level, based on the guidelines of a good conceptual definition (Wacker 2004; Suddaby 2010). The study also

provides insights into boredom's effect on businesses. It claims that boredom is an important emotion that calls for the research that contributes to its understanding for scholars, marketers (currently managing an online platform, planning a marketing campaign, or launching new products), and policymakers. Understanding the emotion of boredom can ultimately enhance an individual's well-being and productivity as well as business profitability.

1.1 Online Commerce

The pioneering of online commerce applications can be tracked to the early 1970s when money was transferred electronically, mostly among financial institutions (known as electronic funds transfer [EFT]), whereby funds could be routed electronically from one organisation to another. A significant milestone in online commerce was the launch of the World Wide Web in the early 1990s, allowing businesses to establish an online presence with text and images. As the internet became commercialised, online commerce/e-commerce rapidly expanded, with numerous dot-com startups emerging. By 1999, online commerce focus shifted from B2C to B2B, then later diversified to include Business to Employee (B2E), Collaborative Commerce (c-commerce), e-government, e-learning, and mobile commerce (m-commerce). Social networks gained traction in 2005, with social commerce channels like Facebook and Twitter increasingly driving online commercial activity by 2009. S-commerce (social commerce) is the latest technological advancement linking e-commerce with social media and is growing at a rapid rate. S-commerce, with its enhanced features, diverges from e-commerce in various aspects. The three main characteristics which distinguish s-commerce from e-commerce are social media technologies, community interactions, and commercial activities (Liang & Turban 2011).

The uniqueness of defining boredom in the online commerce context is signification from three perspectives: research, businesses, and consumers. Firstly, as social media, e-commerce, s-commerce, and m-commerce, among others, all come under online commerce; a defined concept that can be applied not only within its domain but also in broader multidisciplinary fields. Consequently, a good conceptual definition paves the way for future inquiries into boredom and its measurement that would otherwise not be possible (i.e., theory formulation) (Wacker 2004). Secondly, for businesses, researchers believe that boredom can lead to new paths towards value co-creation online (Sundström et al. 2019). For consumers, known for its negative consequences in online contexts (e.g., addiction, uncivil behaviour) (Koban et al. 2018), defining boredom aids in understanding and devising ways to assess and mitigate it, promoting greater well-being. Before making recommendations, establishing an operational definition is imperative, determining when interventions should be applied. This definition will serve as a foundation for identifying empirically sound, technologically driven tool usage for measuring and mitigating boredom in online settings. Hence, a literature gap exists that calls for a clear and concise definition of boredom in the online commerce context.

In the next sections, this study presents the review methods, followed by the findings, inductive framework, and the definition of boredom. Finally, it discusses the findings in the light of existing boredom theories, provides the limitations of current work, and presents concluding remarks followed by implications.

2 Methodology

The current study's method utilised the grounded theory technique (mostly used in the information systems (IS) field) following the guidelines of Wolfswinkel et al. (2013). These guidelines are based on the Strauss and Corbin approach (1990, 1998) of "rigorously reviewing literature". The guidelines consist of five steps, as shown in Table 1. This directed the review process prior to review presentation. The first four steps are discussed in the following paragraphs, while the fifth is presented in the Findings section.

Step	Task(s)
Define	• Inclusion/exclusion criteria, identify fields of research and sources, establish search terms.
Search	• Search for text by selecting search field and keywords.
Select	• Refine the sample by applying the inclusion/exclusion criteria and identify additional sources to produce the final sample.
Analyse	• Apply coding techniques: open coding, axial coding, and selective coding.
Present	• Write the review and present findings via figure. • Define the structure of the review itself.

Table 1. Using Grounded Theory for Literature Review (adapted from Wolfswinkel et al. 2013)

According to Opie (2004), "grounded theory is a process of collecting qualitative data and undertaking data analysis to generate categories (a theory) to explain a phenomenon of interested". This theory consists of five stages and is iterative, which is as follows:

Our study utilised the grounded theory technique following the guidelines of Wolfswinkel et al. (2013). Based on our inclusion criteria we searched title, abstract, and keywords in two databases (i.e., Scopus and Web of Science) for the literature published between 1965 and 13th August, 2022. We only selected articles published in peer-reviewed journals, conference articles, and book chapters, and excluded work-in-progress papers and the ones that were not in English. The search queries included TITLE-ABS-KEY ("boredom" OR "bored" OR "state boredom" OR "trait boredom" OR "free time boredom" OR "leisure boredom") AND TITLE-ABS-KEY ("Group buying" OR "online shopping motivations" OR "internet shopping" OR "online buying" OR "online purchase" OR "electronic shopping" OR "E-Shopping" OR "online purchases" OR "online shopping" OR "social media" OR "social networking sites" OR "Internet use" OR "social media use" OR "social networking" OR "Facebook" OR "social media engagement" OR "Digital media" OR "Internet" OR "Social browsing" OR "social media platforms" OR "social commerce" OR "s-commerce"). The initial sample size was 524; we reduced the number to 98 for final analysis. However, drawing on the common citation information within each paper, five more articles were added. The final sample included 103 works. To justify the selection of articles, a "reviewer's selection table" was created and articles were listed according to year of publication (see table E.1 of Appendix E in the supplementary material). We reviewed and analysed the literature based on iterative coding. (Following recommendations from Wolfswinkel et al. (2013), several pre-defined, descriptive elements of each paper were collected and summarised in figures B.1 to B.4 of Appendix B and Table F.1 of Appendix F "initial coding" in supplementary material.) Three types of coding were applied: "open coding", "axial coding", and "selective coding" (Wolfswinkel et al. 2013), and the analysis was performed using NVivo (release 1.0). We summarise the themes identified from the literature in Table 2.

3 FINDINGS

3.1 Defining Boredom

The conceptual definition of boredom in the online commerce context using the steps of grounded theory (outlined in Table 1) comprises five categories that emerged as a result of current analysis (see Table 2). Boredom is defined here from a functional perspective, as the core theme/category of this study's analysis is "boredom's function". Based on the inductive framework (Figure 2) and in light of the rules and guidelines of a good conceptual definition presented in Table D.1 and D.2 of Appendix D (Wacker 2004; Suddaby 2010), this study defines boredom as follows: Boredom is an individual's perception-based negative affective state and/or trait, having a self-regulatory function, with the aim to seek internal and external stimulation from online commerce to relieve itself irrespective of its consequences (positive or negative) on one's well-being.

3.2 Boredom: An Inductive Framework

High Level Category and Description	Lower-Level Category and Sample References
Boredom's nature (<i>a temporary, emotional, motivational, and aversive state that is based on perception</i>)	- Negative affective state (Wang et al. 2020) - Motivational/functional state (Watt & Vodanovich 1992)
Boredom's function (<i>boredom is self-aware and self-regulates from negative to a positive state</i>)	- Self-aware of the existence of boredom (Greenon, 1953) - Self regulates negative state to a positive one (Biolcati et al. 2017; Mano 1999; Sundström et al. 2019)
Causes of boredom (<i>situational and individual factors and their mismatch that results in the experience of boredom</i>)	- External factors (<i>factors that lie outside the person such as task and environmental conditions</i> [Fisher 1993]) - Internal factors (<i>factors that originate inside the person such as individual differences and personality traits</i> [Fisher 1993]) - Mismatch of internal and external factors (<i>the elements that derive from the fit between person and environment</i> [Fisher 1993])
Alleviation or coping strategies of boredom (<i>using online commerce as a coping strategy when seeking stimulation</i>)	- Internal stimulation (<i>individual's ability to identify and process their own feelings and thoughts and generate interesting activities</i> [Harris 2000; Vodanovich 2003]) - Self-stimulation - Mental stimulation - Emotional stimulation - Behavioural stimulation - External stimulation (<i>experiencing interest from daily activities and pleasure from leisure time</i> [Vodanovich 2003]) - Market stimulation - Environmental stimulation - Social stimulation
Consequences of boredom (<i>beneficial and detrimental outcome of boredom for an individual and company</i>)	- Positive - Self-development (<i>includes creative thinking, redefining life goals and purposeful behaviour, improving social skills and escaping negative emotions</i> [Bench & Lench 2013; Tilburg & Igou 2017; Biolcati et al. 2018]). - Good market performance (<i>boredom triggers impulse buying, frequent customer visits on platform and overall positive consumer attitude towards the companies providing a positive atmosphere</i> [Mastro et al., 2002; Yazdanparast et al. 2015; Sundström et al. 2019])

	- Negative - Health problems (<i>problematic behaviours and harms well-being</i> [Stockdale & Coyne 2020; Wegmann et al. 2018; Wang et al. 2020]) - Poor performance of company and individual (<i>customers lose interest as company is unable to provide a good experience</i> [Sing, 2016; Gerritsen et al. 2014])
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Table 2. High-Level and Low-Level Categories Generated during Data Analysis with Sample Reference

Based on the coding techniques and their pattern recognition as underlined in the grounded theory methodology for literature review, Table 2 shows the properties of all the selective codes and axial codes of this study as high-level and low-level categories. On the basis of these higher and lower-level categories, Figure 1 represents the literature's sequential diagram and Figure 2 represents the inductive framework summarising current knowledge on boredom in online commerce. This framework was built on relationships that emerged through the analysis across five overarching building blocks describing boredom as a negative self-regulatory functional emotion that is caused by situational and individual factors. Its self-regulatory function refers to the development of alleviation strategies (i.e., seeking online commerce stimulations) that generate negative and positive outcomes. Visual representation of coded themes in NVivo are presented in Figure C.1 to C.5 of Appendix C. In addition, the complete reference list of our analysis by categories (see Table G.1 to G.5 of Appendix G), variables/codes definitions (presented in Figure 2) (see Table H.1 of Appendix H), and conceptual foundations of our sample (see Table I.1 of Appendix I) are available in the supplementary material.

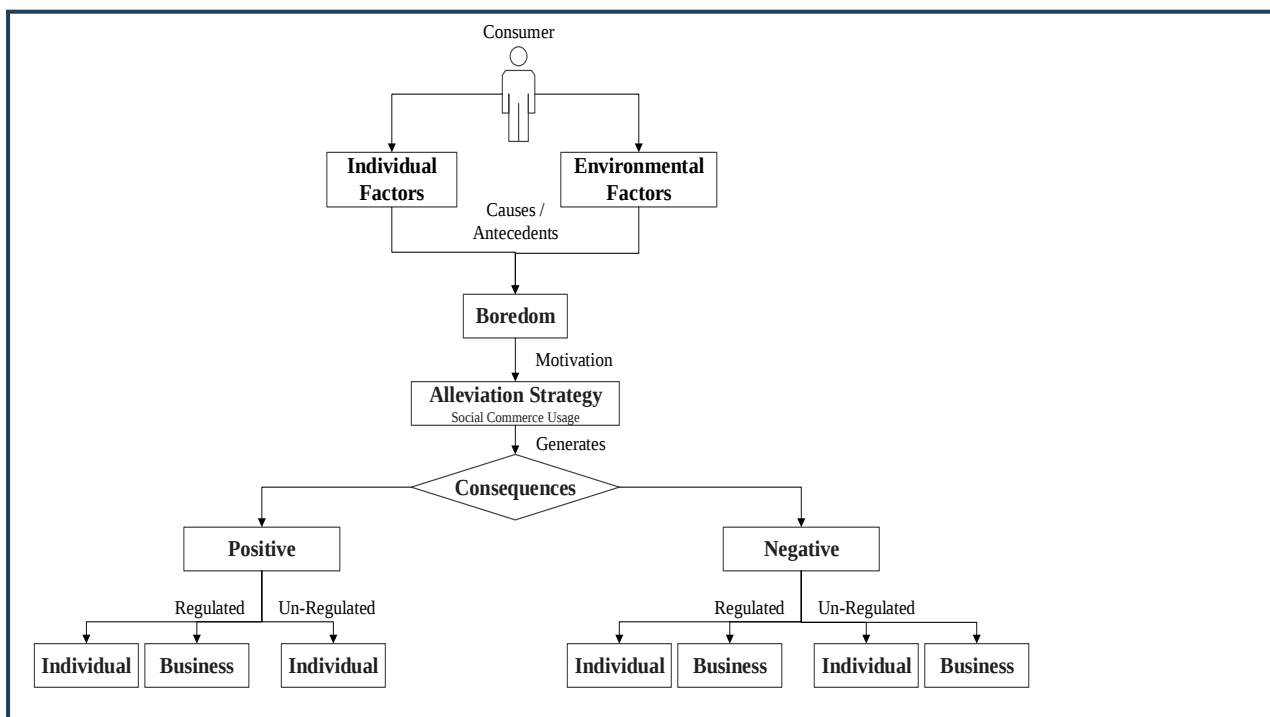


Figure 1: Literature Sequential Diagram

Note: The arrows represent the flow of the literature review.

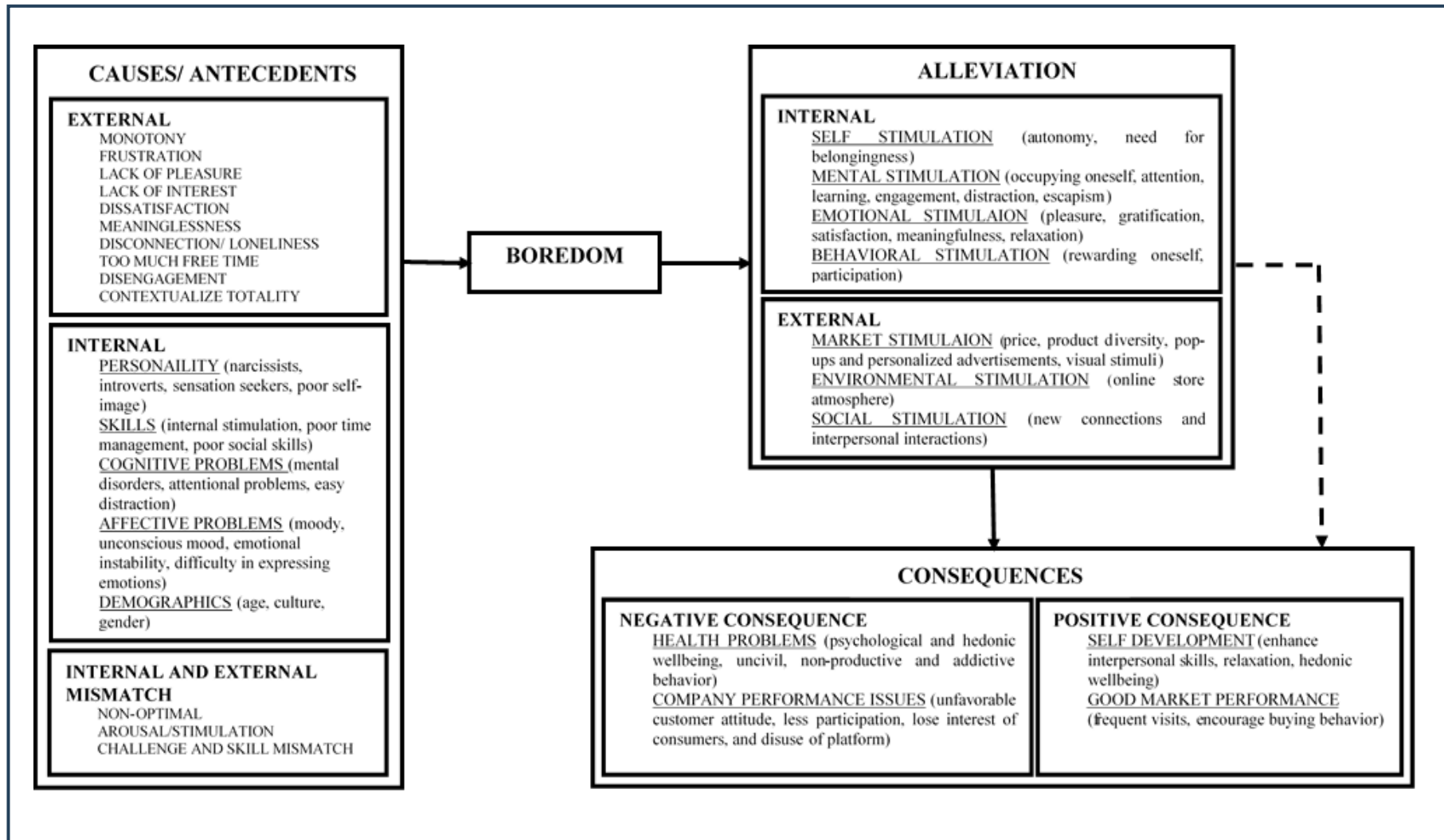


Figure 2: Inductive Framework

Note: The arrows do not represent a statistical relationship, or the causality found in variance models. Rather, they detail an overarching sequence of relationships described by the literature on boredom in social commerce. The dotted arrow depicts if online commerce fails to regulate boredom and shows that it is also subject to positive and negative consequence.

3.2.1 Boredom's nature and function

Boredom is commonly recognised as a negative motivational emotion, arising from daily activities and life orientation (Ksinan et al. 2019; Biolcati et al. 2018). Its perception varies among individuals (Yazdanparast et al. 2015). In consumer behaviour, boredom is often treated as an independent variable, particularly in shopping studies (Sundström et al. 2019). It profoundly influences consumer behaviours, inciting consumption responses to counter its negative effect (Bozaci 2020; Studak & Workman 2004).

Three types of boredom have been highlighted in the context of online commerce: state, leisure, and trait. State boredom is regarded as an actual experience caused by external factors, such as the environment and tasks (Fahlman et al. 2013). For instance, boredom is aroused if the online commerce platform is neither gratifying nor attractive; for example, it has dull colours, the multimedia is not appealing, or if its products or content lack variety and novelty (Mori 2014). Leisure boredom is the consequence of having too much time available and being unable to deal with this time efficiently (spend optimally) or the leisure experiences and activities available are limited and not stimulating, novel, or exciting/pleasurable enough to engage in. Online commerce helps to kill leisure time boredom by providing an unlimited number of fun seeking activities, like shopping, interactivity, and information seeking. Failure to provide adequately stimulating or captivating leisure opportunities will evoke further boredom (Leung 2020). Trait boredom or boredom proneness is a personality trait. It is the tendency or susceptibility to being bored easily. People with this psychological trait have high arousal levels and are easily prone to boredom. Such individuals are continuously seeking stimulation via social media and online shopping to cope with boredom (Sundström et al. 2019).

In the current sample, the function of boredom is represented by the following steps: (1) Boredom necessitates the individual is self-aware of the feeling. (2) Boredom motivates the individual to assess this feeling and find its root cause. (3) Once the cause has been discovered, boredom creates a desire to alleviate this cause (which can be achieved by changing one's feeling towards it and thereby escaping it). (4) Changing or escaping means finding alternatives that can transform the negative effect of boredom into a positive one (Bozaci 2020; Sundström et al. 2019). In the context of online commerce, it is found that individuals use digital technologies, like smartphones, the internet, social media, and online buying, as a coping strategy, reflecting a common behavioural response.

3.2.2 Causes of Boredom

Boredom is a result of either internal and external factors or their mismatch. In the current sample, individual (internal) and situational (external) causes of boredom are highlighted in the context of online commerce.

3.2.2.1. External Causes

Boredom is a state that can be caused by external factors like situations, tasks, activities, or conditions, which are as follows:

Monotony and Repetition. Boredom emerges from monotonous and repetitive scenarios that result in inattentiveness (Sundström et al. 2019; Bozaci 2020). Repetitive content on social media, or reaching the end of a feed, can trigger boredom (Paasonen 2018; Chou et al. 2018;

Barkemeyer et al. 2020). Weinstein (2018) noted that continuous scrolling for an hour led to boredom due to the absence of fresh content. A parallel can be drawn in shopping, where monotony, such as lack of variety or novelty in products and environment, prompts boredom (Studak & Workman 2004).

Frustration. Monotony alone isn't sufficient; it requires frustration to trigger boredom (Studak & Workman 2004). In online impulse buying, monotony leads to frustration and a craving for change and novelty, which fosters boredom and prompts purchase behaviour (Sundström et al. 2019).

Lack of Pleasure. Digital technologies are the source of gratifying and entertaining opportunities. In today's world, dependency on these technologies has increased because they are an easy source of pleasure. When unwillingly separated from their smartphones and other devices, users may feel bored, as they have nothing at hand for entertainment and to give them pleasure (Hoffner 2016). In the same manner, if the experience of social networking sites (SNS) is not gratifying or pleasurable enough, its users will become bored and will position that SNS as boring (Yazdanparast 2015; Singh 2016). Likewise, unappealing web interfaces, void of multimedia, engaging navigation, or vibrant colours, evoke boredom (Mori 2014). Furthermore, if the tasks at hand on social media are utilitarian and not hedonic (entertaining or exciting) it will not only cause boredom but will make its usage less attractive (Whelan et al. 2020; Panova & Lleras 2016; Lin et al. 2019).

Lack of Interest. Boredom arises from disinterest and apathy towards one's surroundings. An unstimulating environment fails to provide satisfaction or diversity, thus resulting in boredom and reluctance to engage (Studak & Workman 2004). An uninteresting SNS becomes linked with boredom, curtailing user participation, such as posting, liking, or other social media actions (Yazdanparast et al. 2015; Singh 2016).

Dissatisfaction. Boredom stems from dissatisfaction, often due to repetitive, monotonous, prolonged environment or misaligned challenges and skills (Yazdanparast et al. 2015; Singh 2016). A disappointing SNS (like Facebook) is perceived as boring and influences users' attitudes and assessments negatively (Whelan et al. 2020).

Existential Suffering. Boredom can result from existential suffering. It is triggered by purposeless activities or routines lacking meaning and hampering engagement. Mindless smartphone use or aimless social media browsing fosters boredom (Weinstein 2018; Ragheb & Merydith 2001; Allaby & Shannon 2020). Similarly, purposeless content can also cause boredom. In an experimental study using an eye tracker, Li et al. (2009) found that a visual search online causes boredom owing to floating ads. These ads are commercially driven and often deemed irrelevant and disregarded.

Loneliness/Disconnection. Situational loneliness ignites boredom (Diefenbach & Borrmann 2019). For instance, abstaining from digital communication tools can cause an emotional void, generating feelings of alienation, disconnection, and FOMO (fear of missing out), leading to boredom (Catedrilla et al. 2020). When isolated from the internet, social media users felt bored, as they found themselves outcasted and disconnected from their friends and the world (Stieger & Lewetz 2018; Hoffner et al. 2016). Similarly, quarantine restrictions on outdoor activities caused Filipinos to become bored and consequently triggered social media usage (Catedrilla et al. 2020).

Too Much Free Time. Having too much free time and limited or no leisure opportunities can create a sense of boredom. For example, individuals may have more free time in the evenings but lack of meaningful activity to fill their time makes them bored (Sundström et al. 2019).

Disengagement. Boredom signifies disengagement, where individuals are unable “to engage in a satisfying or stimulating activity” (Fahlman et al. 2013 p. 69) or “articulate a satisfying target for engagement” (Eastwood et al. 2012, p. 483; Gerritsen et al. 2014). It is a condition in which individuals are motivated but fail to engage with an activity or the world around them (Mugon et al. 2018). This often arises due to unengaging, unappealing, or repetitive experiences, lacking psychological involvement (Biolcati et al. 2018). For instance, lack of stimulation on Facebook correlated with decreased engagement, eventually linking boredom to the platform (Yazdanparast et al. 2015).

Contextualised Totality. Boredom’s interplay with a contextualised totality shapes consumer feelings and gives a sense of meaninglessness. The use of social media and online impulse buying when feeling bored often occurs in the evening or night when an individual is alone, lacks energy, and is using multiple screens at the same time (e.g., laptop, TV, phone) (Sundström et al. 2019).

3.2.2.2. Internal Causes

Some individuals have certain characteristics that make them more susceptible to boredom. In the present sample, these characteristics are divided into individual and demographic categories.

Individual characteristics. Bored individuals are found to be lazy, have no dedication, or consistency, and are impatient towards an aversive environment (e.g., an environment that provides over- or under-stimulation or involves waiting periods or delays such as slow internet speed) (Farmer & Sundberg 1986). These individuals lack autonomy, have a poor self-image, and are introverts, narcissists, and sensation seekers with high arousal levels (Ksinan et al. 2019).

In terms of skill and capability, they are poor time managers, lack good interpersonal skills, and have no internal stimulation, which results in being easily bored (Bozaci 2020; Ksinan et al. 2019).

From a psychological perspective, these individuals have noticeable cognitive deficits, such as being easily distracted and generally unable to focus or pay attention, and/or have mental disorders like ADHD or brain damage (Holte & Ferraro 2020; Whelan et al. 2020). From an emotional perspective, they are moody shoppers, passive interactors (usually browsing online with an unconscious mind), emotionally unstable, and often unable to express their emotions or even to be aware of them (Tzavela et al. 2017; Holte & Ferraro 2020).

Demographic level. At the demographic level, boredom varies between culture, gender, and age. Boredom that leads to screen activities is most apparent in Asian collectivistic cultures (Lin et al., 2019). Boredom is commonly experienced among youth irrespective of gender (Lin & Yu 2008; Biolcati et al. 2018; Yazdanparast et al. 2015; Sundström et al. 2019; Bozaci 2020).

3.2.2.3. A Mismatch between the Individual and the Environment

Boredom is a result of a mismatch or discrepancy between an individual's perception, need, or demand and the level of stimulation available in the environment. It is a state of non-optimal arousal or stimulation. Similarly, it also occurs when there is a mismatch between a challenge and skill, like the mismatch of available attentional resources and task demands (Kiss et al. 2020; Bozaci 2020).

3.2.3 Alleviating Boredom through Stimulation

Boredom attempts to alleviate itself through its self-regulatory function. A bored individual is hungry for stimulation (Fahlman et al. 2013) and will often engage in novel and energising experiences even if they are negative ones (Wilson et al. 2014). For that, online platforms can reliably help manage negative moods, as it provides different types of stimulation (Diefenbach & Borrmann 2019). In the present sample, stimulations to reduce boredom are classified into internal and external categories in the context of online commerce.

3.2.3.1 Internal Stimulation

Internal stimulation refers to "consumers' self-feelings, moods, and emotional states" (Kuei Huang & Yang 2008, p. 100). Online commerce provides it in the form of self, mental, emotional, and behaviour.

Self-stimulation. Self-stimulation from practising autonomy and satisfying the need for belongingness can evade boredom. For instance, having the authority to leave a boring shopping experience or demonstrating social identity online through new clothes can relieve the meaninglessness characteristic of boredom (Studak & Workman 2004; Sundström et al. 2019).

Mental stimulation. Bored people seek out mentally stimulating tasks rather than mentally exhausting ones to occupy themselves (Elhai et al. 2018). Bored consumers can be mentally stimulated by online shopping, especially in terms of fashion apparel (a multi-sensory image product). The variety of newly arrived fashion goods can grab consumers' attention, and becoming involved in details and information about products during the shopping process can create a mental incentive to learn about and engage with these products. Online shopping is also a good leisure activity that can lead to mental stimulation and escape from real-life problems (Studak & Workman 2004). In addition, the diversionary nature of digital technology tools is a distraction from boring tasks and protects individuals from social isolation (Sundström et al. 2019). During Covid-19 lockdowns, online shopping via digital tools allowed people to feel as if they had escaped from their house, which at that time felt like being in a prison. Due to the limited activities allowed at that time, individuals' willingness to consume online increased and they often acted impulsively (Deng et al. 2020; Güngördü Belbağ 2022).

Emotional stimulation. When performing utilitarian tasks, individuals may experience a cognitive pull to engage in something more emotionally stimulating, and digital technologies (i.e., social media etc.) seem to provide hedonic benefits at that time (Whelan et al. 2020). For bored consumers, shopping on online platforms is like a war between boredom and pleasure. They shop online to relax and improve their emotions by seeking gratification. Just filling the cart with the right product is stimulating for them and they feel this time spent is meaningful

(Leung 2020). So, they search for new products to continue this sense of pleasure. Also, to them, the price may seem irrelevant, and they are ready to pay more to overcome their sense of boredom (Bozaci 2020).

Behavioural stimulation. The current sample reported that behavioural stimulation, like rewarding oneself through buying clothes online and disposing of old ones, can ease boredom. Participants in a study by Sundström et al. (2019) expressed this feeling as, "I was bored so it was worth the money" (p. 153). Similarly, participating online by creating user-generated content, liking, and posting can attract attention and alleviate boredom (Bozaci 2020; Ksinan et al. 2019).

3.2.3.2 External Stimulation

External stimulation refers to stimuli from the environment. Three types of external stimulation were mentioned in the present sample as being able to alleviate boredom in the online commerce context: market, environment, and social.

Market stimulation. Market stimulation in online commerce involves, among others, price, product, ease of access, and ads. Bored consumers react to these market stimuli to ease their boredom. A variety of low-cost products and promotional activities act on scarcity with headings such as "available now" or "discount today" and offers such as "free shipping" and "return", which stimulate bored individuals to seize the moment and make an impulse purchase online (Bozaci 2020; Harish et al. 2020). Similarly, the visual stimuli of products on social media strongly appeal to consumers and they are willing to visit the website of a product just by seeing how good it looks in the visual of an online advertisement (Sundström et al. 2019).

Environmental stimulation. Bored people favour a stimulating environment to improve their emotions. Rather than setting out with the aim of buying a particular product or service, it is the attractiveness of an online store or website that triggers browsing and eventually results in impulsive buying (Sundström et al. 2019; Harish et al. 2020).

Social stimulation. Online commerce is also a source of social stimulation for bored individuals. S-commerce makes it easier to reach out to friends and family. It offers opportunities to build new connections and interpersonal interactions (Diefenbach & Borrmann 2019). Bored people usually prefer not to be alone and engage in highly interactive sessions online for social stimulation and to relieve boredom (Allaby & Shannon 2020).

3.2.4 Consequences of Boredom

Findings indicate that boredom has both negative and positive outcomes.

3.2.4.1 Negative Consequences

Boredom is associated with various negative consequences whether regulated or unregulated. This is why it is conceptualised as a negative affective state.

Health problems. Boredom is associated with various health issues related to well-being and behaviours that are unproductive, uncivil, and addictive.

If boredom is not regulated or alleviated constructively (e.g., for a utilitarian and social purpose), it can damage an individual's psychological well-being by producing existential

problems (i.e., lack of a motive or sense of direction). Similarly, alleviating boredom online can have a particularly adverse emotional impact on youth (Tzavela, et al. 2017). Coping boredom through online commerce can enhance feelings of strain, stress, aggression, dissatisfaction, depression and anxiety, conspiracy beliefs, paranoia, frustration (boring shopping experience), awkwardness, emptiness and/or sadness, FOMO, isolation, and loneliness (Biolcati et al. 2018), which harms hedonic well-being.

Experiencing negative effects is one thing, while the adverse behaviour that follows is another. From a behavioural perspective, boredom is responsible for various unproductive behaviours, such as less engagement in hobbies (Biolcati et al. 2018) and mirroring uncivil responses or comments online (as aggressive and harsh online discussions may seem entertaining) (Koban et al. 2018). Additionally, bored people report symptoms of ADHD (a behavioural disorder) (Chou et al. 2018). Moreover, boredom can lead to reduced self-control, prompting impulsive decisions like excessive buying. This behaviour often results in overspending and subsequent feelings of regret (Baumeister 2002; Sundström et al. 2019).

In addition to these behaviours, boredom causes smartphone, social media, and internet addiction. A boredom cycle highlighted in current sample literature shows that using social media to alleviate boredom can lead to more boredom. Alleviating this cycle of boredom online increases the probability of developing online addiction. For instance, engaging in online content too often can result in it becoming homogenous; content that may appear novel or new to start with will eventually become repetitive and dull, once more leading to boredom. Also, continuously engaging in unconstructive activities online (wasting time for hedonic benefits) can make it harder to feel stimulated and lead to further boredom and consequently further consumption (Paasonen 2018). Over time, these addictions can lead to the development of anxiety, depression, and stress.

At a company level, if boredom associated with a company's products, services, or even their image is not regulated, the company will face various problems which can cost them their customers (Wang et al. 2020; Whelan et al. 2020). A boring SNS offering nothing interesting will negatively impact its users' attitude and assessment towards it and eventually reduce their participation (i.e., posting or carrying out other social media behaviours) (Yazdanparast et al. 2015; Biolcati et al. 2018; Paasonen 2018).

Similarly, users failing to seek gratification become passive. Their consumption is absentminded, resulting in low engagement and interest in a platform. Moreover, constantly seeking but not getting adequate stimulation online can lead to social media fatigue, making its users disuse the platform permanently (Barkemeyer et al. 2020).

3.2.4.2. Positive Consequences

In the present sample, two positive consequences of boredom emerged. One is self-development from the perspective of an individual and the other is good market performance from the marketer's perspective.

Self-development. Boredom, despite its negative nature, yields positive impacts on self-development. It enhances interpersonal skills by encouraging greater online participation. Bored consumers update their profiles, share their point of view on forums, and interact with their friends via the social and user-generated content features of social media. Doing so not

only alleviates boredom but also boosts their confidence and social skills (Leung, 2020). Boredom alleviates negative emotions like stress and motivates enjoyable activities such as relaxing screen time (Biolcati et al. 2018). Additionally, boredom leading to impulse buying of the right product contributes to subjective well-being (Sundströma et al. 2019).

Market performance. It is a well-known fact that bored people engage in online shopping activities in search of pleasure, distraction, and engagement. This provides a good opportunity for marketers to appeal to consumers by providing, among other things, an attractive store environment, good service, ease of use, and a variety of goods. Marketers are able to stimulate a “must-have” craving for online shopping and influence consumers’ intentions to proceed to an impulse purchase. Eventually, these consumers become frequent visitors and develop a positive attitude towards a site (Sundström et al. 2019).

4 Discussions

This study rigorously investigated boredom in the context of online commerce using grounded theory methodology. This approach effectively identified and defined boredom within this context, uncovering new linkages among variables (indicated in Figure 2). Findings addressed research questions by highlighting boredom's function, antecedents, alleviation strategies, and consequences. Moreover, it offers future research directions for interested scholars.

4.1 Conceptual Definition of Boredom in the Social Commerce Context

This refers to RQ1. Boredom, in the current study, is defined as an individual’s perception-based negative affective state and/or trait, having a self-regulatory function, with the aim to seek internal and external stimulation from online commerce to relieve itself irrespective of its consequences (positive or negative) on one’s well-being.

4.2 Boredom Is a Functional Emotion

The study’s findings indicate that boredom is a negative affective state that is commonly experienced in our day-to-day activities. This experience is mundane and is based on an individual’s perception. As Hill and Perkins (1985) pointed out in their model of boredom, the same stimuli can be inferred differently by individuals leading to different experiences and outcomes. The three types of boredom discussed in the online commerce context are trait boredom, state boredom, and leisure or free-time boredom, each of which influences consumer behaviour.

Negative states have more influence on individuals than positive ones. For instance, negative moods foster in-depth information processing, impactful impressions, and a quest for meaning in adverse experiences (Baumeister et al. 2001). As a negative emotion, boredom wields influence over decision-making and preferences, driven by its self-regulatory motivational function. This finding of the boredom function is in agreement with the statement that “boredom is both an informative and motivational state: it signals that we need to change something about ourselves or our environment and it motivates us to do so” (Elpidorou 2018, p. 9). This change is not just a random physical, environmental, or mental alteration but also leads to something positive like satisfaction, meaningfulness, and pleasure.

Given this functional nature of boredom, it is important to know what causes it, how to alleviate it, and what its aftermath is. In terms of its origin in the online commerce context, this study highlights the possible situations and individual characteristics more prone to it by underlining the internal and external causes of boredom in different age groups and gender.

4.2.1 Boredom's Antecedents in Social Commerce: Individual and Situational Factors

The findings propose that bored consumers' motivation for online commerce is influenced by environmental and individual factors and their mismatch. There are four theories of boredom and each help to explain current findings concerning what exactly causes it in the online commerce context. Hence, they are the answer to this study's RQ2 (a).

According to psychodynamic theorists Mann and Cadman (2014, p. 165), "boredom stems from a situation where none of the possible things that a person can realistically do appeal to the person in question". Current findings underline such experiences as unpleasurable, frustrating, and dissatisfying. Unappealing and homogenous activities or an environment lacking hedonic value fails to grab consumers' attention and causes disengagement while also creating "a longing to engage in an unspecified satisfying activity", which is a key predictor of boredom (Baratta & Spence 2018, p. 478).

The existential theory of boredom defines it as "the aversive experience of inaction, emptiness, paralysis of will, and meaning not realized" (Eastwood et al. 2012, p. 484). Therefore, experiences that feel meaningless cause boredom. According to attentional/cognitive theory, "boredom is caused by a failure of attentional processes resulting in an inability to focus or engage attention" (Fahlman et al. 2013, p. 69). Affirming this, present findings indicate that if experience lacks novelty, variety, or innovations, it will become monotonous and uninteresting over time and fail to easily capture consumers' attention.

Current findings indicate that boredom occurs in times of loneliness, disconnection (not being online), and when there is a large amount of time on hand but there are no or limited opportunities for engagement that can provide optimal arousal. Being disconnected and alone during the Covid-19 lockdowns meant people had a lot of free time and not much to do and they consequently experienced boredom more than ever. They were under obligatory restrictions to stay at home with no physical or social contact with friends and family and instead relied on digital technologies to a risky level (Deng et al. 2020). The theory of free time boredom states that an individual experiences boredom because of a lack of surrounding stimulation. This does not mean that individuals lacked leisure opportunities but rather the experiences available to them were not engaging, fun, appealing, or novel. This lack of psychological involvement caused boredom (Biolcati et al. 2018).

Internal causes of boredom include individual characteristics that make an individual more prone to boredom compared to others. Firstly, as stated by Vodanovich (2003), highly boredom-prone individuals have a lower intention to engage in civic activities and are mostly inactive. Present findings show that bored individuals are less motivated by life and are instead drawn to smartphones and social media, as these provide stimulation with little effort. Such individuals have low tolerance, low self-image and autonomy but have high arousal levels and are sensation seekers. They are usually introverts and narcissists. These claims are

supported by several studies (Leong & Schneller 1993; Tolor 1989; Watt & Vodanovich 1999; Emmons 1981; Vodanovich 2003).

Secondly, according to psychodynamic theory, boredom results from repressed desires. In a state of boredom, an individual desires an alternative but is not sure what to look for (Eastwood et al. 2012). Such individuals lack the necessary skills and capabilities (time management, technical and interpersonal skills, internal stimulation) to seek activities with adequate stimulation to overcome their boredom.

Thirdly, these individuals have certain cognitive and affective defects which increase their tendency to be bored. From the cognitive perspective, the attentional theory of boredom states that boredom is caused by a failure to focus and engage. Present findings report that such individuals may have mental disorders like ADHD and brain injuries. From an affective perspective, the findings report such individuals as being emotionally unstable and unaware of their feelings. Psychodynamic theory states that “uncertainty and vagueness about one’s own wishes ... characterizes boredom”. Bored individuals “desire alternatives but are unable to find and looks to the world for possible solutions” (Lewinsky 1943, p. 148; Baratta & Spence 2018).

Boredom spans across cultures at the demographic level, yet within the online commerce framework, individuals from Asian collectivistic cultures tend to report it more. This aligns with the conclusion of cross-cultural boredom studies (Sundberg et al 1991; Ng et al 2015). This is because Asian cultures generally have less challenging and interesting opportunities to engage in, and due to their internalised cultural values, individuals from Asian cultures have positive low arousal compared to Western cultures that promote fun and excitement (Ng et al. 2015). Moreover, experiencing boredom is part of youth culture irrespective of gender. Young people heavily rely on technology for information, social interaction, and shopping. They exhibit sensation-seeking behaviours, struggle with time management, lack knowledge of constructive boredom remedies, and possess newfound autonomy, often with less monitoring. Consequently, they encounter greater boredom compared to older generations (Biolcati et al. 2018; Stockdale & Coyne 2020).

Lastly, the third source of boredom is the discrepancy between internal and external stimulation. This is supported by the arousal theory of boredom that proposes that “boredom is caused by non-optimal arousal that ensues when there is a mismatch between an individual’s need for arousal and the availability of environmental stimulation (i.e., its degree of challenge, complexity, intensity, and variety)” (Fahlman et al. 2013, p. 69). In a situation of overstimulation, consumers’ ability to be surprised or amazed is taken away by the excessive stimulation, and, eventually, they disengage and become bored (Gerritsen et al. 2014). In the case of under-arousal or under-stimulation, the environment or activity is inadequately mentally or emotionally stimulating. Similarly, a mismatch between challenge and skill causes boredom. According to the 4-Channel Model of Flow, if the task or activity is easy, the result can be boredom (Guo & Klein 2007). Hence, a moderate level of arousal or stimulation and challenge is preferred otherwise the result can be disengagement and inattention which triggers boredom.

To answer RQ2 (b), this study points out the alleviation strategies that this functional emotion seeks out in the online commerce context, which are internal and external stimulation via online commerce.

4.2.2 Boredom's Alleviation Strategies in Social Commerce: Boredom Triggers Seeking Stimulation

The factors stated above trigger the experience of boredom in online commerce, and owing to its self-regulatory function, bored individuals seek alternatives. Bored users turn to digital technologies, as they are swift, convenient, and readily available. These technologies offer both internal and external stimulation, effectively countering negative states with minimal effort. The current study proposes that bored consumers' motivation to go online is to seek internal and external stimulation to relieve themselves from boredom.

On average, a bored individual uses a smartphone 34 times a day to access the internet and social media, and this response is habitual. Boredom and shopping are linked together because it feels like clicking the boredom away and escaping reality and stress, especially in the case of fashion products (Sundström et al. 2019; Bozaci 2020; Harish et al. 2020). Online commerce provides internal stimulation emotionally, mentally, behaviourally, and through self by providing opportunities for interactivity and community building, and giving consumers authority over the system, their digital profile, reference groups, gratification, and browsing information. Through its collaborative and entertaining features, it engages users to achieve a satisfying internal state (Whelan et al. 2020).

External stimulation includes the market, environment, and social stimulation. Market cues like price, product diversity, the visual stimuli of products and pop-ups, free shipping, and delivery makes the product striking and gives bored customers a feeling of benefit or value, which induces them to buy on impulse. Similarly, a pleasant, engaging atmosphere and a friendly, high-quality service not only help consumers in making shopping decisions but also help them manage their negative moods by triggering online impulse buying. Online commerce provides such stimulations owing to its technical and commercial characteristics like coupons, discounts, personalisation, and availability of global and local commodities, consumers' bargaining power, a personal recommendation system, and a hedonic environment that is arousing and enjoyable. Lastly, s-commerce characteristics like ratings, reviews, and recommendations from vendors and customers in real-time provide social stimulation (Stephen & Toubia 2010). Through its collaborative environment, consumers can interact during the pre- and post-purchase phases in real-time which lowers their loneliness and eventually eases boredom.

Even though these alleviation strategies can ease boredom, they are not without consequences. To answer RQ2 (c), regarding the aftermath of boredom in the online commerce context, current findings indicate that it has both positive and negative outcomes. Boredom can be detrimental to well-being and productivity (individual and organisational) but can also lead to self-development and be an opportunity for good market performance.

4.2.3 Consequences of Boredom in the Social Commerce Context

4.2.3.1 *Boredom Is Detrimental to Health (Well-being) and Productivity*

Numerous studies have found that this aversive emotion can lead to many negative outcomes. This study proposes that seeking non-optimal/optimal but unconstructive stimulation on online commerce is detrimental to an individual's health and performance as well as the company's performance.

In terms of health, boredom harms an individual's hedonic and eudaimonic well-being. "Hedonic well-being comprises of high positive affect and low negative affect" (Carruthers & Hood 2004, p. 229). In contrast, boredom is linked to many negative effects, such as depression, anxiety, stress, FOMO, mind wandering, and dissatisfaction. In the online commerce context, owing to the irresistibility of the stimuli, a bored consumer buys on impulse; however, he/she may develop a negative feeling of regret for making an impulsive decision (Baumeister 2002). Boredom leading to such negative effects can be harmful for hedonic well-being.

Similarly, eudaimonic well-being is "having a sense of control over one's fate, a feeling of purpose and belongingness, and a basic satisfaction with oneself and one's existence" (Cowen 1991, p. 404). Boredom in the online commerce context creates a feeling of meaninglessness based on the need for belongingness and contributes to poor self-control when seeking to relieve itself through digital technologies. It also triggers impulsive behaviours, especially in online shopping that can lead to overspending and overconsumption. A study with a similar finding reported that due to limited activities during the Covid-19 pandemic, bored people hunted for complex external stimuli (i.e., shopping) because their impulse-buying tendencies increased to seek satisfaction in that state (Deng et al. 2020). All these feelings and behaviours are harmful to an individual's psychological well-being as they can hinder their personal growth and development.

This research highlights how using digital tech to counter boredom can lead to addictive and problematic behaviour. This aligns with the findings of Wang et al. (2020), who indicated that excessive internet use is a coping mechanism for negative emotions. Moreover, in the long term, such addictive behaviours can lead to other negative states like depression, stress, anxiety, aggression, frustration, and FOMO. During the Covid-19 pandemic, heightened social media usage due to boredom led to addiction (Stockdale & Coyne, 2020). Boredom-induced addiction often arises when bored individuals lack parental monitoring, have nothing to do in their free time, lack stimulation and meaningfulness in their daily activities, and have lower self-control over digital technology usage.

At a business level, unregulated boredom associated with a company's products, services, or platform can tarnish its reputation and stakeholder relationships due to negative customer attitudes. As highlighted in this review, boredom arises when online platforms fail to deliver optimal gratification, resulting in reduced consumer interest, visits, and overall engagement.

4.2.3.2 *The Bright Side of Boredom*

This study proposes that seeking non-optimal/optimal stimulation on online sites will be fruitful to an individual's health, well-being, and performance as well as enhancing the company's performance. Boredom as a negative emotion that leads to negative consequences

has been studied and reported in numerous research (Whelan et al. 2020; Elhai et al. 2018; Bozaci 2020; Yazdanparast et al. 2015). The findings highlight the positive consequences of boredom – an aspect that has had little investigation in boredom research. Boredom, despite its negative nature, holds protective aspects as it alerts individuals to monotonous, unsatisfactory situations, prompting action. It fosters skill development and self-confidence, contributing to personal growth. Its impact on subjective well-being varies, with potential adverse or beneficial outcomes. While utilising online commerce during boredom might lead to negative emotions, like regret, it can also elicit happiness. Consumers often report pleasure or happiness during and after their purchase experience. Shopping can therefore be a happy experience (Sundströma et al. 2019).

Furthermore, bored individuals often turn to online platforms to elevate their mood, seeking engaging content to captivate them. This presents a lucrative opportunity for marketers to cater to the stimulation needs of these consumers. As stated in the arousal theory of boredom, resolving the discrepancy of the individual's demand and environmental supply of stimulation can evade boredom. User and gratification theory also claims that an "audience select media and media content to satisfy their social and psychological needs" (Leung, 2020 p. 131) and "benefits that accrue from using new media, such as information, identity, social integration and interaction, and entertainment" (Tomczyk & Solecki 2019, p. 3). Hence, marketers should prioritise creating an engaging and enjoyable experience for bored consumers because a platform environment greatly impacts purchasing behaviour and preferences.

5 Future Directions

Our review highlights the significant contributions that research has made towards our understanding of boredom in online commerce context. In this section we will extend these contributions and provide avenues for future IS research on boredom followed by a table (see Table 3) that offers a concise representation of the discussion featuring the outlined future research questions.

5.1 Boredom in Market and Business Perspectives

The existing literature on boredom in this context predominantly centres around its influence on consumer behaviour, leaving its impact on the market/business relatively underexplored. Gaining insights into its adverse effects on market performance can empower marketers to comprehend the extent of its repercussions and formulate strategic approaches to mitigate and manipulate its effects for their advantage. Future studies can concentrate on exploring how boredom impacts the online business. They can investigate alleviation strategies, such as market, social, and environmental stimulation, which could prove valuable to businesses in terms of improving attitudes, increasing engagement, boosting purchasing behaviour, and enhancing platform visits of their bored customers. Additionally, researchers can examine the potential drawbacks if marketers fail to address customer boredom. These insights can be invaluable for marketers in designing their platforms, crafting content, and devising marketing campaigns and strategies aimed at customer retention.

5.2 Explore the Roots: Antecedents of Boredom in the Digital Technology Context

From a consumer perspective, we propose several key areas for future research. Initially, our review pinpointed the typology of boredom, highlighting that specific traits contribute to its susceptibility, except sensation seeking and narcissism, others (introversion, self-esteem etc) remain relatively understudied. We advocate for further exploration of these traits in conjunction with moderators such as age, culture, and gender, as boredom is perceived and experienced differently among these variables. Moreover, the examination of boredom in terms of consumers' personal skills (social, time, and self-stimulating skills) remains limited. While the cognitive and affective issues (mental disorders, emotional instability etc.) have been studied mostly in psychological contexts, there is a notable gap in exploring these aspects within the context of digital technology. This holistic approach has the potential to yield valuable insights into the nuanced dynamics of this phenomenon, thereby aiding in policymaking for consumer well-being. It's important to note that consumer well-being is also significant for online businesses. For example, due to information and communication overload (Whelan et al. 2020), consumers may permanently disengage from a platform, resulting in reduced or discontinued visits, decreased participation, and, ultimately, diminished sales.

5.3 Connect Alleviation Strategies with Consequences

Our review identified the types of stimulation (internal and external) that bored individuals actively seek on online platforms. Although studies on this aspect are burgeoning, there is a need for a more comprehensive understanding. For instance, understanding the link between boredom and cyberbullying involves identifying which stimulation (entertainment, social interaction, self-esteem etc.) triggers this relationship. Similarly, investigating how boredom influences online purchases requires examining which market stimuli (discounts, product diversity, customisation etc.) strengthen this connection. We recommend that future researchers explore which type of boredom (state, trait, or leisure) experience seeks specific stimulation on online commerce, leading to various consequences. This investigation will help pinpoint which stimulation results in specific outcomes, thereby aiding policymakers in crafting policies and interventions better suited for individuals' self-development and business prospects.

5.4 Analyse Problematic Behaviour and Unveil the Positive Dimensions of Boredom

Boredom is a well-acknowledged negative emotion. Our review emphasises that existing research has predominantly focused on online addiction, leaving other problematic behaviours, such as online uncivil behaviour and cyberbullying, largely unexamined. Given the global increase in these behaviours (Howarth 2023), there is a valuable opportunity for future studies to investigate and shed light on them. Additionally, our review uncovers some positive consequences of boredom (e.g., consumer well-being, business sales) that remain highly underexplored. Future research endeavours can delve into these positive aspects to understand how boredom can be constructively alleviated for individuals' self-development and for good business performance. This can help in making policies and intervention strategies for consumers (well-being) and businesses (market performance).

This study presents an inductive framework, urging future research to explore its intricacies and directional relationships. These insights can be extended to emerging digital domains and interdisciplinary fields, like the meta-verse and live streaming, offering valuable contributions to evolving research landscapes. This review can be discussed from the perspective of boredom theories, and future research can enhance this review by exploring the framework through different theories, such as user and gratification, and various internet theories. Lastly, future researchers can consider the established definition of boredom in this study as foundational for theory development. They can use this conceptualisation as the “building blocks” for advancing theoretical frameworks related to boredom in the dynamic landscape of online commerce and related disciplines.

The above-presented research avenues highlight the key areas where research on boredom in online commerce is currently lacking. In our view, they represent exciting opportunities for IS researchers to engage with topics that are interesting from a research standpoint as well as highly relevant in light of current debates on the phenomenon. These future research avenues can contribute to a better understanding of the theoretical linkages of boredom in online commerce.

No	Future questions
1	How does boredom influence market/business performance in the context of online commerce? How can marketers mitigate and leverage the effects of boredom to their advantage?
2	What characteristics of online platforms (external causes/factors) provoke susceptibility to boredom among consumers, and what are the implications for businesses?
3	How and why do specific consumer personality traits (introversion and low self-esteem) trigger boredom in online commerce? How do skills (social, time), age, culture, and gender serve as potential moderators in understanding the interplay of these traits and boredom susceptibility?
4	How does a focused investigation into a specific type of boredom (e.g., state, trait, or leisure) within the context of online commerce contribute to a deeper understanding of its dynamics and implications for consumers?
5	How do various stimuli affect the outcomes for individuals experiencing boredom in the context of online commerce? Are these consequences positive or negative for a bored individual?
6	How does boredom contribute to problematic behaviours, like uncivil behaviour and cyberbullying, in the context of online commerce? What are the implications for brands, and what interventions can be implemented to address this issue?
7	How does boredom contribute to consumers' well-being in online commerce context?

Table 3. Research Questions for Future Studies

6 Limitations

Boredom is a trending topic in many disciplines, and it may be possible that some of the avenues explored in this study are already being researched; however, this possibility would be considered a verification of the current study's findings. The approach regarded most suitable for this research was to choose breadth over depth; therefore, future studies could examine the relationships identified in the present findings in more depth.

7 Implications

7.1 Theoretical Implications

Firstly, owing to the growing market and consumer usage, it is timely and significant to analyse consumers' motivation for online commerce. This study undertook a review that integrates current knowledge on boredom with the online commerce context – a neglected gap in the literature. Contrary to present studies, this study analysed boredom literature in a digital technology context relevant to online commerce usage using the grounded theory approach. Using grounded theory, we explored boredom in online commerce thoroughly and theoretically and presented the strengths, limitations, and future directions for a balanced growth of literature. The task of reviewing a portion of academic literature is important in every academic community but infrequently executed. Grounded theory helped retain transparency and offer clarity on how and why the particular literature sample was selected. This theory for the boredom review process not only enriched the value of this review but made it more valuable to the field as well as more replicable. It helped in explaining the fruitful new linkages among variables, as seen in the inductive framework (see figures 1 and 2).

This inductive framework is developed to identify boredom's functional mechanism in online commerce and highlight the emergence of potential antecedents, mediators, moderators, and consequences for both consumer and market perspectives, serving both as a comprehensive reference point and offering prospective avenues for further scholarly exploration. It highlighted possible situations and introduced a nuanced boredom typology specific to the online environment. By bridging gaps in prior studies (Chou et al. 2018; Elhai et al. 2018; Jiang & Li 2018; Whelan et al. 2020), it provides insights into the psychological traits or personality characteristics that contribute to behaviours impacting health and well-being. Previously, studies focused on the intensity of digital technology use in the relationship with boredom (Saleem & Iglesias 2019; Whelan et al. 2020). This study goes further by delineating the specific content consumed and the type of stimulation individuals seek to ease boredom. Boredom, being a negative emotion, leads to negative outcomes, like addiction. Our review highlighted additional consequences that were ignored in the past studies (cyberbullying, uncivil behaviour) but hold reasonable weight to well-being. Moreover, in contrast to previous boredom studies, this research illuminates its positive side for both individuals and businesses in short and long-term scenarios. Finally, drawing from the findings of the grounded theory method, we introduced a conceptual definition of boredom in the online commerce context. This clarification of the construct provides insights that may pave the way for a comprehensive development of the boredom theory in the future. The study's sample encompasses multiple disciplines, and this definition holds generalisability in related fields as well.

7.2 Practical Implications

The findings not only elucidate boredom's risk factors but also propose implications for intervention development. This study underscores how boredom can pose risks to health, well-being, and performance, while its intervention holds potential for personal growth (especially among vulnerable youth) and improved business performance.

Firstly, the findings show that youth are especially prone to boredom, highlighting the need for leisure and media literacy education to help manage it. While digital technology might appear appealing in moments of under-stimulation, the chosen activity's significance holds more weight. So, healthcare providers, educators, and parents should pursue training initiatives that enhance young people's self-control and temper their responsiveness to technological stimuli.

Secondly, given boredom's link to sensation seeking and its potential to fuel excessive online media use, parents and educators must oversee children's online usage. Children should be guided in setting goals and priorities for their free time and honing skills like decision-making, technical know-how, time management, and mindfulness to evade boredom. Encouraging interpersonal skills and engagement in social activities can divert their leisure time away from digital media.

Thirdly research findings also present businesses with an opportunity to identify customer boredom and offer solutions within online commerce. This insight can help marketers understand boredom's impact and overcome sales barriers by addressing its situational and individual causes. Marketers should have an attractive outlook on their websites and apps. They should be visually appealing and gratifying, as this can attract bored consumers to engage and participate. They should also avoid complex and purposeless marketing stimuli to protect their goodwill and instead provide novel and diverse content and products to attract bored individuals.

Fourthly, marketers should give control to their users regarding incoming information and provide them with content according to their priorities. This could help lessen users' exposure to social media overload and fatigue.

8 Conclusion

This study aimed to conduct a rigorous literature review using grounded theory to examine boredom in the online commerce context. This review highlighted a rich body of literature that contributes to forming a definition of boredom in online commerce and understanding its nature, function, characteristics, potential antecedents, and alleviation strategies and their aftermath. This study proposes future research avenues and provides theoretical and practical contributions that enable researchers and policymakers to understand boredom and how to intervene for the betterment of an individual's well-being and business performance. Overall, this review is helpful for future research that wishes to further explore the nature and the implications of this mundane emotion for the betterment of individuals, organisations, and society.

Disclosure statement

The authors report there are no competing interests to declare.

Data availability statement

The authors confirm that the data supporting the findings of this study are available within the article and in supplementary materials.

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Appendices

Appendix A: Definitions of boredom in the sample

	Year	Article name	Definition	Sample Source	Original Source
1	1992	Relationship Between Boredom Proneness And Impulsivity	Boredom prone individual as one who experiences “varying degrees of depression, hopelessness, loneliness, and distractibility”	(Watt & Vodanovich, 1992, p. 688)	(Farmer & Sundberg, 1986, p. 14)
2	2014	I can’t get no satisfaction: Potential causes of boredom.	Difficult for boredom-prone individuals to “articulate a satisfying target for engagement”	(Gerritsen et al., 2014, p. 27)	(Eastwood et al., 2012, p. 483)
3	2014	Assessment of heterogeneity of compulsive buyers based on affective antecedents of buying lapses	Defined as “a state of mental weariness and dissatisfaction produced by lack of interest or activity”	(Jung & Yi, 2014)	(Blaszczynski et al., 1990, p. 36)
4	2014	I can’t get no satisfaction: Potential causes of boredom.	“Restlessness and entrapment, combined with lethargy”	(Gerritsen et al., 2014, p. 30)	(Martin et al., 2006, p. 206)
5	2015	An investigation of Facebook boredom phenomenon among college students	“Boredom is a feeling of un-pleasure arising out of a conflict between a need for intense mental activity and lack of incitement to it, or inability to be incited”	(Yazdanparast et al., 2015, p. 470)	(Fenichel, 1953, p. 292)
6	2015	An investigation of Facebook boredom phenomenon among college students	Overall, different approaches to theorizing boredom converge on the fact that “the central defining feature of boredom is the aversive experience of wanting, but being unable to engage in a stimulating and satisfying activity”	(Yazdanparast et al. 2015, p. 471)	(Fahlman et al., 2013, p. 69)
7	2016	Monotony of social networking among millennial and its effect on social advertisement: a challenge to digital marketers	The definition of monotony (boredom) postulates that “boredom is a feeling of un-pleasure arising out of a conflict between a need for intense mental activity and lack of incitement to it, or inability to be incited”	(Singh, 2016, p. 378)	(Fenichel, 1953, p. 292)
8	2018	Affect, data, manipulation and price in social media	Boredom as both the cause and effect of modernity: as “both the disaffection [...] that drives the search for	(Paasonen, 2018, p. 221)	(Goodstein, 2005, p. 1)

			change and as the malaise produced by living under a permanent speed-up”		
9	2018	Is it beneficial to use Internet-communication for escaping from boredom? Boredom proneness interacts with cue-induced craving and avoidance expectancies in explaining symptoms of Internet-communication disorder	Boredom as a state of “under-stimulation, under-arousal, and lack of psychological involvement associated with dissatisfaction, and individuals try to cope with boredom by seeking additional stimulation”	(Biolcati et al., 2017, p. 304; Wegmann et al., 2018, p. 3)	(Brissett & Snow, 1993)
10	2018	Is it beneficial to use Internet-communication for escaping from boredom? Boredom proneness interacts with cue-induced craving and avoidance expectancies in explaining symptoms of Internet-communication disorder	The construct of boredom proneness is often “operationalized as an individual’s susceptibility to experience boredom”	(Wegmann et al., 2018, p. 3)	(LePera N, 2011, p.15)
11	2018	Boredom proneness and its correlation with Internet addiction and Internet activities in adolescents with attention-deficit/hyperactivity disorder.	“A state of relatively low arousal and dissatisfaction, which is attributed to an inadequately stimulating environment”	(Chou et al., 2018, p. 468)	(Mikulas & Vodanovich, 1993, p. 3)
12	2018	Boredom proneness and its correlation with Internet addiction and Internet activities in adolescents with attention-deficit/hyperactivity disorder.	“Cognitive changes in the direction of less differentiated and more homogeneous construing give rise to a state of subjective monotony which induces, or perhaps even represents, the state”	(Chou et al., 2018, p. 468)	(Hill & Perkins, 1985, p. 231)
13	2019	Exploring the Relationship Among Free-Time Management, Leisure Boredom, and Internet Addiction in Undergraduates in Taiwan	Leisure boredom is defined as the “subjective perception that available leisure experiences are not sufficient to instrumentally satisfy needs for optimal arousal”	(Wang, 2019, p. 1653)	(Iso Ahola & Weissinger, 1990, p. 4-5)
14	2019	The Smartphone as a Pacifier and its Consequences: Young adults’ smartphone usage in moments of	“Boredom is a state of relatively low arousal and dissatisfaction, which is attributed to an inadequately stimulating situation”	(Diefenbach & Borrmann, 2019, p. 5)	(Mikulas & Vodanovich, 1993, p. 3)

		solitude and correlations to self-reflection			
15	2019	Clicking the boredom away – Exploring impulse fashion buying behavior online	An individual level of boredom and a mundane experience is concurrent with a contextualised totality and is an interplay of influences that shapes the consumer	(Sundström et al., 2019, p. 151)	(Sundström et al., 2019, p. 151)
16	2020	Exploring the relationship between smartphone activities, flow experience, and boredom in free time	Boredom is defined as an “unpleasant, transient affective state” in which an individual is left with nothing in particular to do and lacks interest in his or her surroundings (Iso-Ahola & Weissinger, 1990).	(Leung, 2020, p. 132)	(Fisher, 1993, p.3)
17	2020	Exploring the relationship between smartphone activities, flow experience, and boredom in free time	Leisure boredom is conceptualised as “the subjective perception that available leisure experiences are not sufficient to instrumentally satisfy needs for optimal arousal... leisure experience are not sufficiently frequent, involving, exciting, varied or novel”	(Leung, 2020, p. 132)	(Iso-Ahola & Weissinger, 1990, p. 4)
18	2020	Is boredom proneness related to social media overload and fatigue? A stress-strain-outcome approach	Boredom has been depicted as being due to both cognitive and attentional deficits (Fisher, 1998; Kass et al., 2010; Mikulas and Vodanovich, 1993), which usually emerges when “the individual feels a pervasive lack of interest in and difficulty concentrating on the current activity”	(Whelan et al., 2020, p. 873)	(Fisher, 1998, p. 396)

Table A.1. Boredom Definitions

Appendix B: Descriptive data

Figures B.1 and B.2 provide descriptive statistics of current review sample. Table F.1 of appendix F (in supplementary data) also provides a complete list of current sample’s sources which served to generate this information. Figure B.1 provides the source by year, broken down according to the five main types of sources reviewed: survey, interview, experiment, mix method, and multi method design. The total sample size for Figure B.1 is $n = 103$ (56 survey; 21 others, 7 multi method, 6 mixed method, 8 interviews and 5 experiment). Figure B.2 presents each method in percentage.

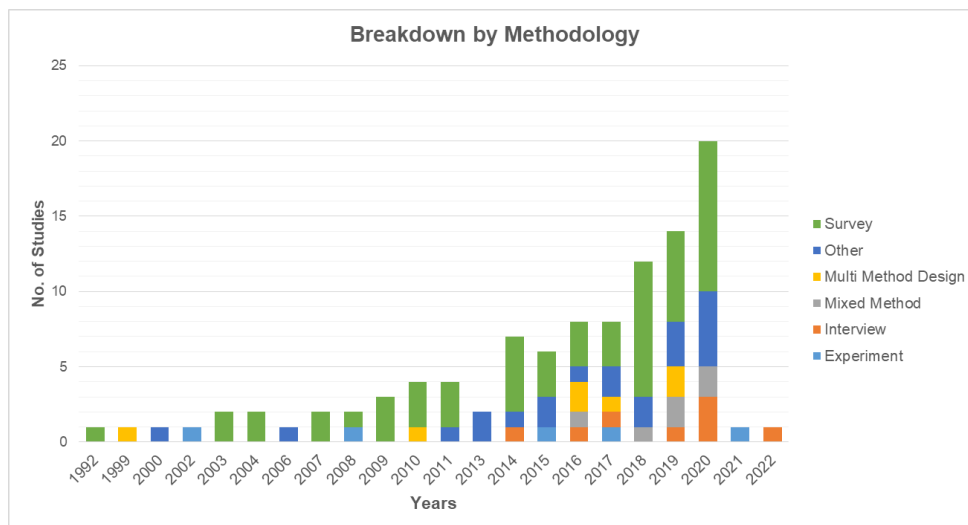


Figure B.1: Breakdown of sources by methodology type ($n = 103$)

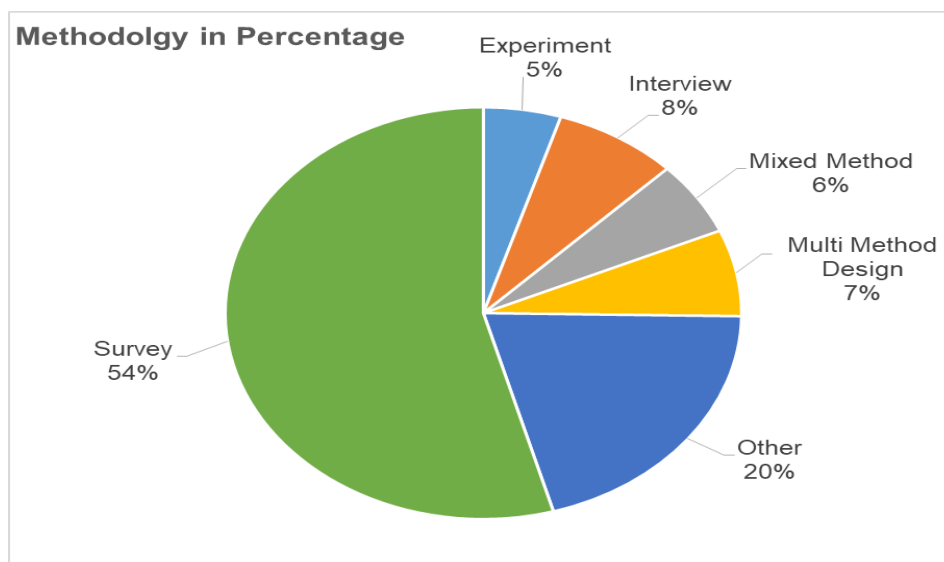


Figure B.2: Breakdown of methodology type in percentage ($n = 103$)

Note: Others include a methodology whose number is less than 2 in the sample as follows: Behavioral archetypes creation and validation, Case study, Content analysis, Data mining approach, Descriptive design, Differential language analysis, Ecological momentary intervention, Fieldwork, Kansei measurement process, Review, Focus group, Secondary data.

Figure B.3 provides a count of source by year, broken down according to the five main sectors: social networks, smartphones, internet, fashion, and communication technologies. The remainder are "others". The total sample size for figure B.3 is $n = 103$ (27 social networks; 15 smartphones, 20 Internet, 4 fashion, 3 communication technologies and 34 others). Figure B.4 presents each sector in percentage.

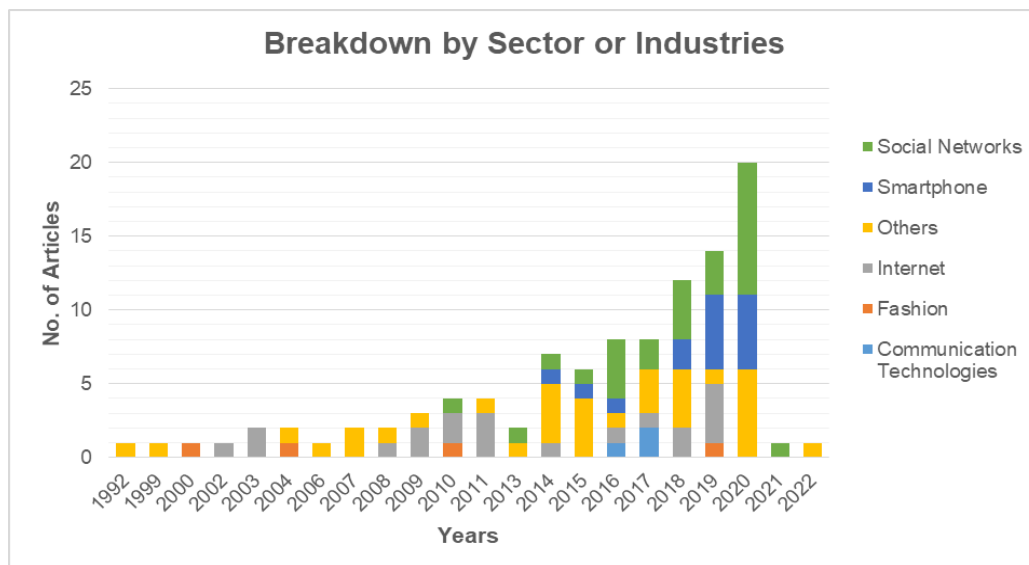


Figure B.3: Breakdown of sources by sectors and industries Type ($n = 103$)

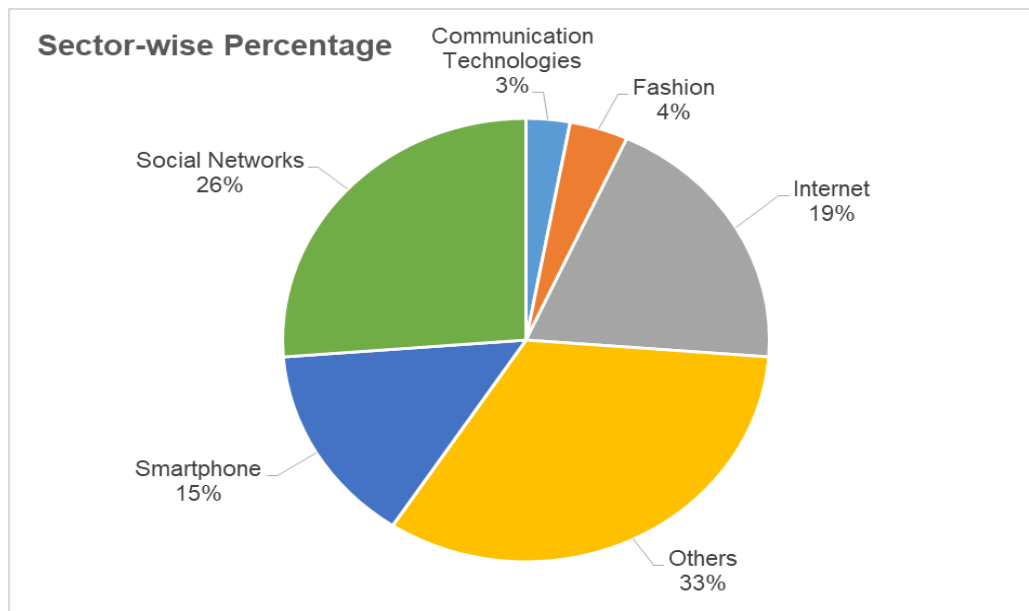


Figure B.4: Breakdown of sector type in percentage ($n = 103$)

Note: "Others" includes sectors whose number is less than 2 in the sample. These are: Advertisement, Agents and Artificial Intelligence, Agricultural Economics, Communication and Information, Computers in Human Behaviour, Consumer Behavior, Digital Technology, Educational and Internet, Emotions, Human-Computer Interaction, Information Society and New Media, Marketing & Consumer, Media and Health, Media Psychology, Mood and Emotions, Non-profit Organisations, Online Shopping Systems, Psychological, Retailing, Technology, Travel, Web Application, Youth, Youth and Technology, Communication Technologies.

Appendix C: Visual representation of themes and sub themes in NVIVO

Figures C.1 to C.5 provides a visual representation of the main themes and their sub themes. These emerged in present analysis following sample analysis in NVIVO.

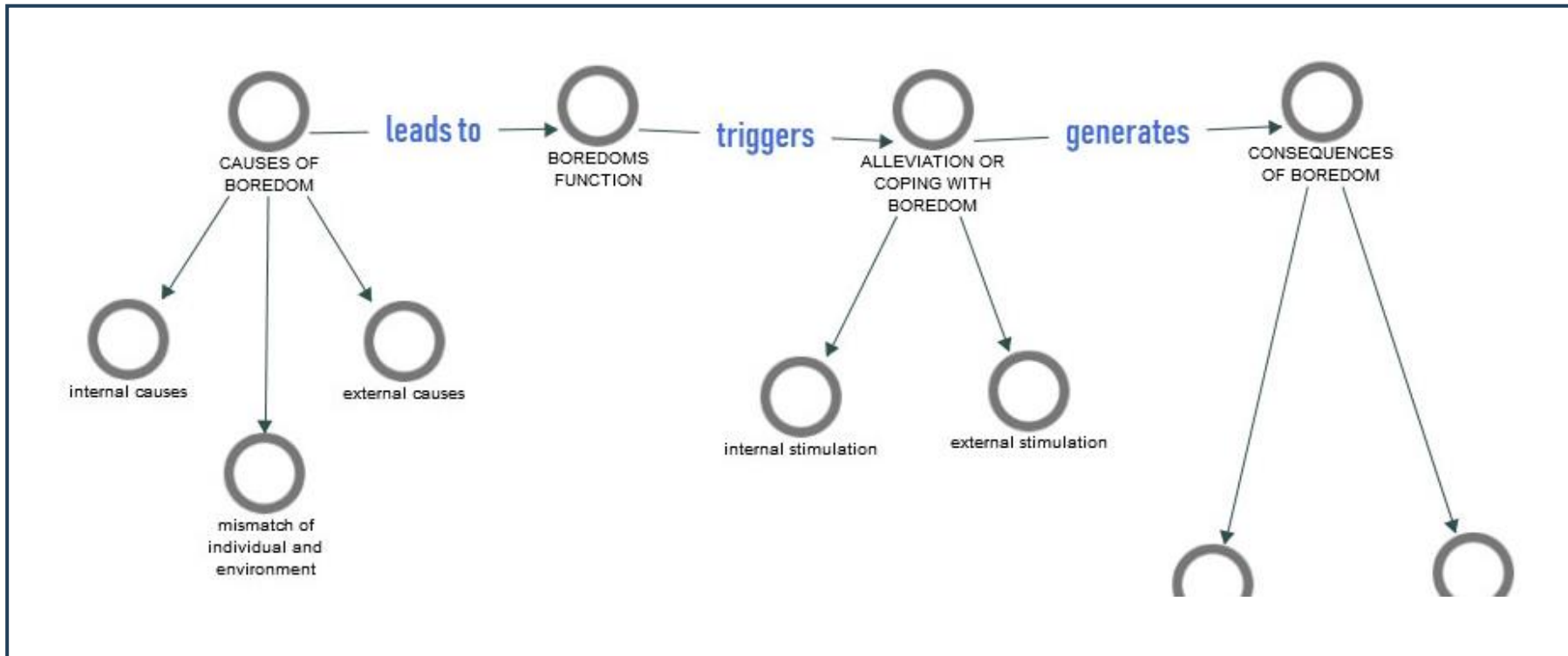


Figure C.1: Visual representation of the connection between the main themes and their sub themes

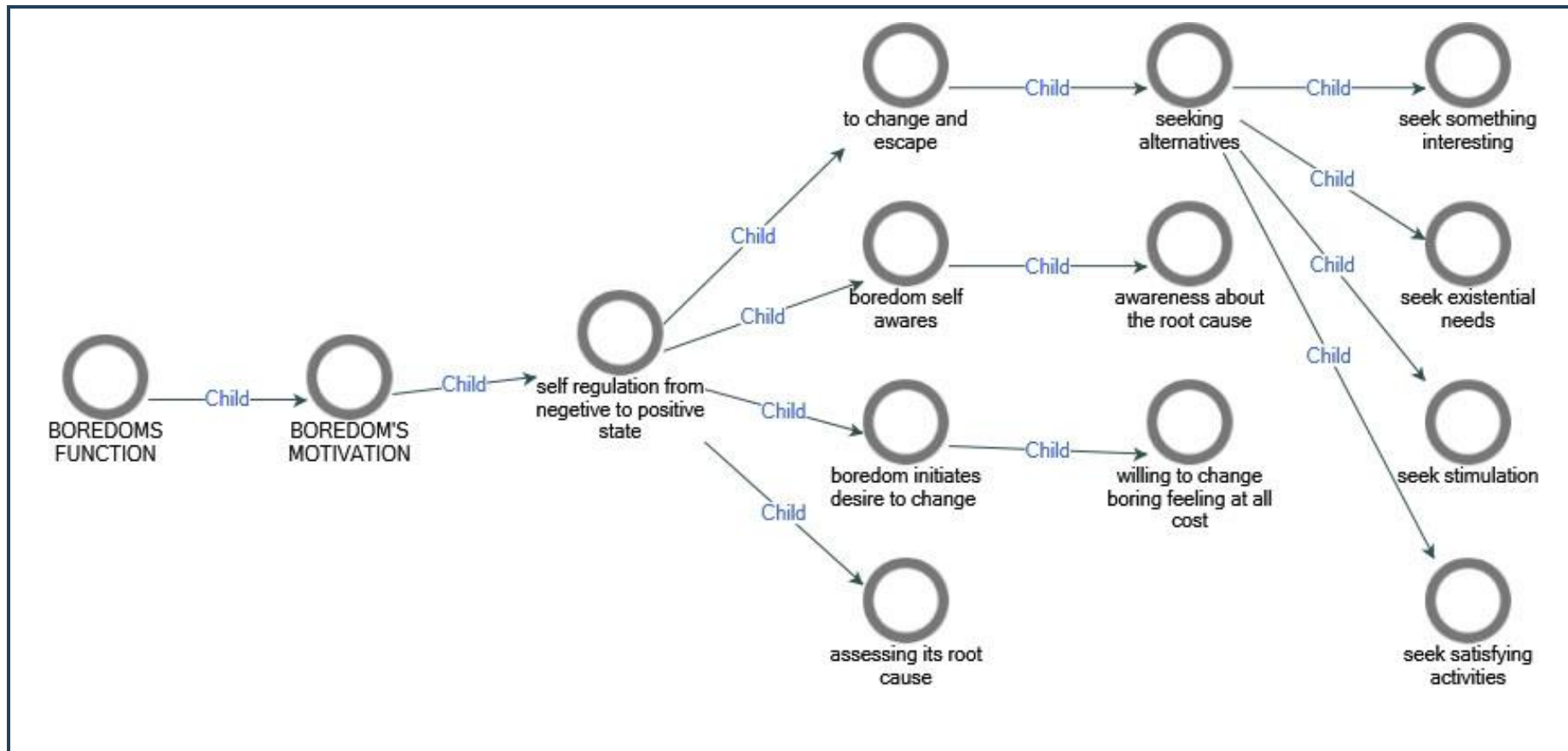


Figure C.2: Visual representation of the theme “boredom’s function” and its sub themes

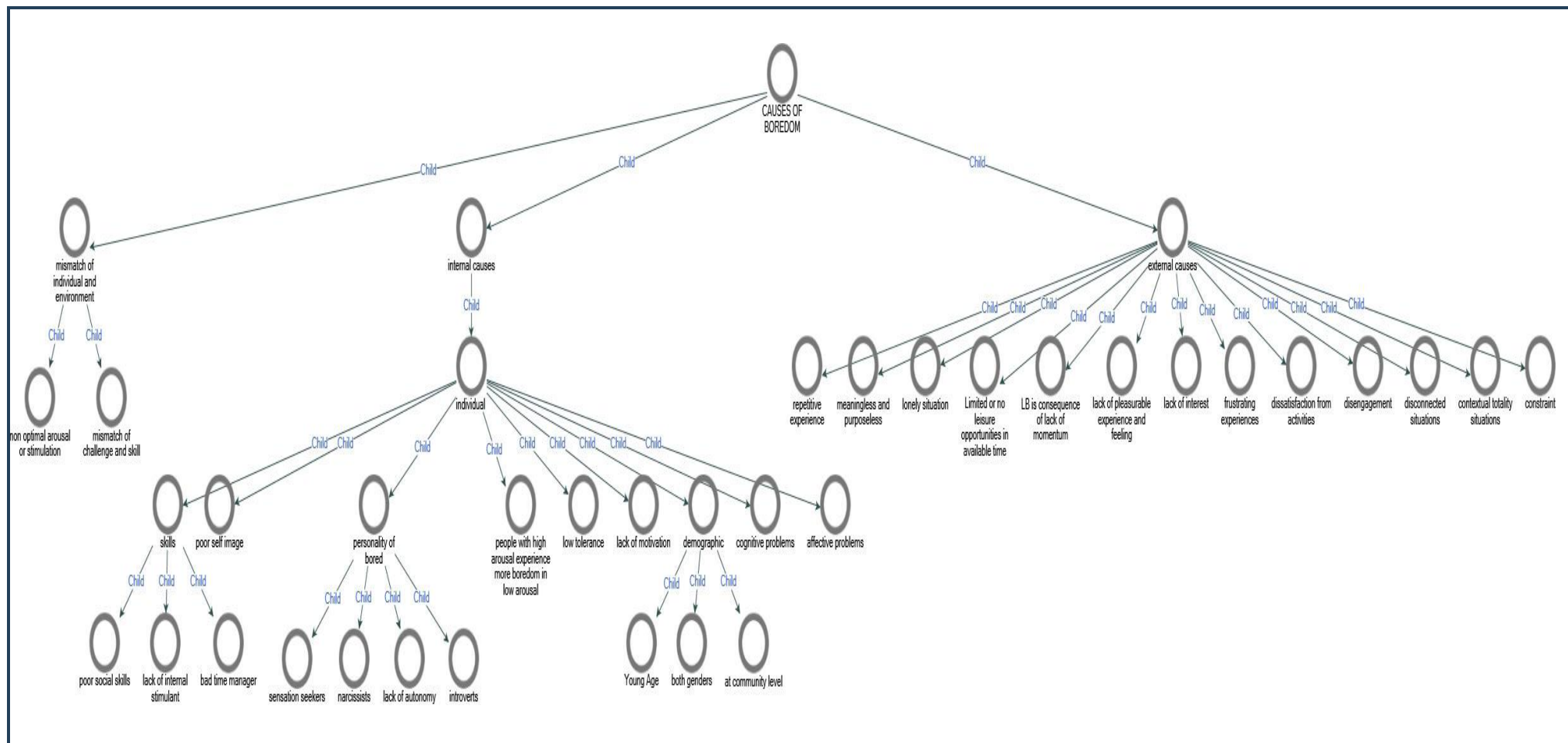


Figure C.3: Visual representation of the theme “causes of boredom” and its sub themes

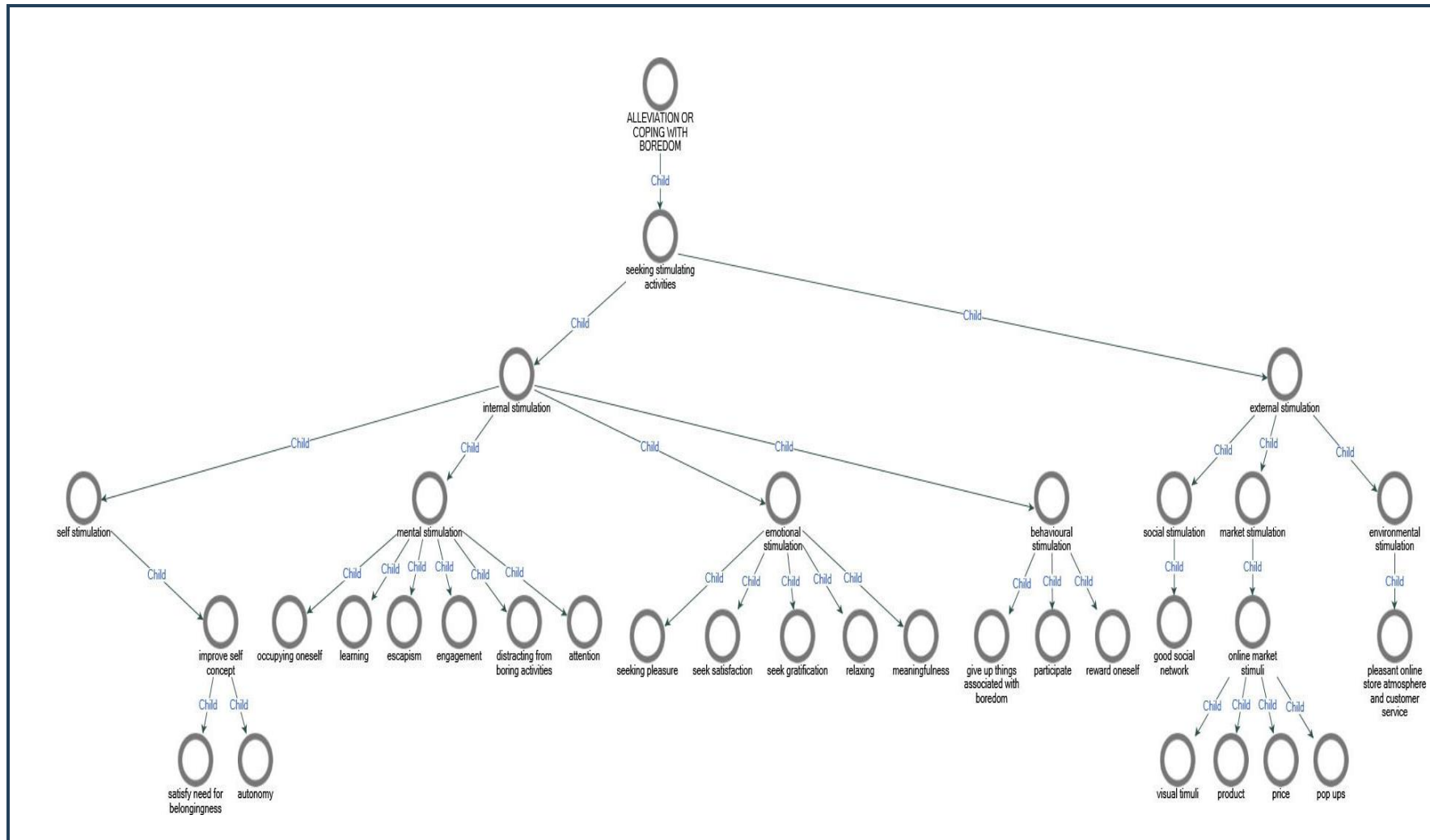


Figure C.4: Visual representation of the theme “alleviation strategies” and its sub themes

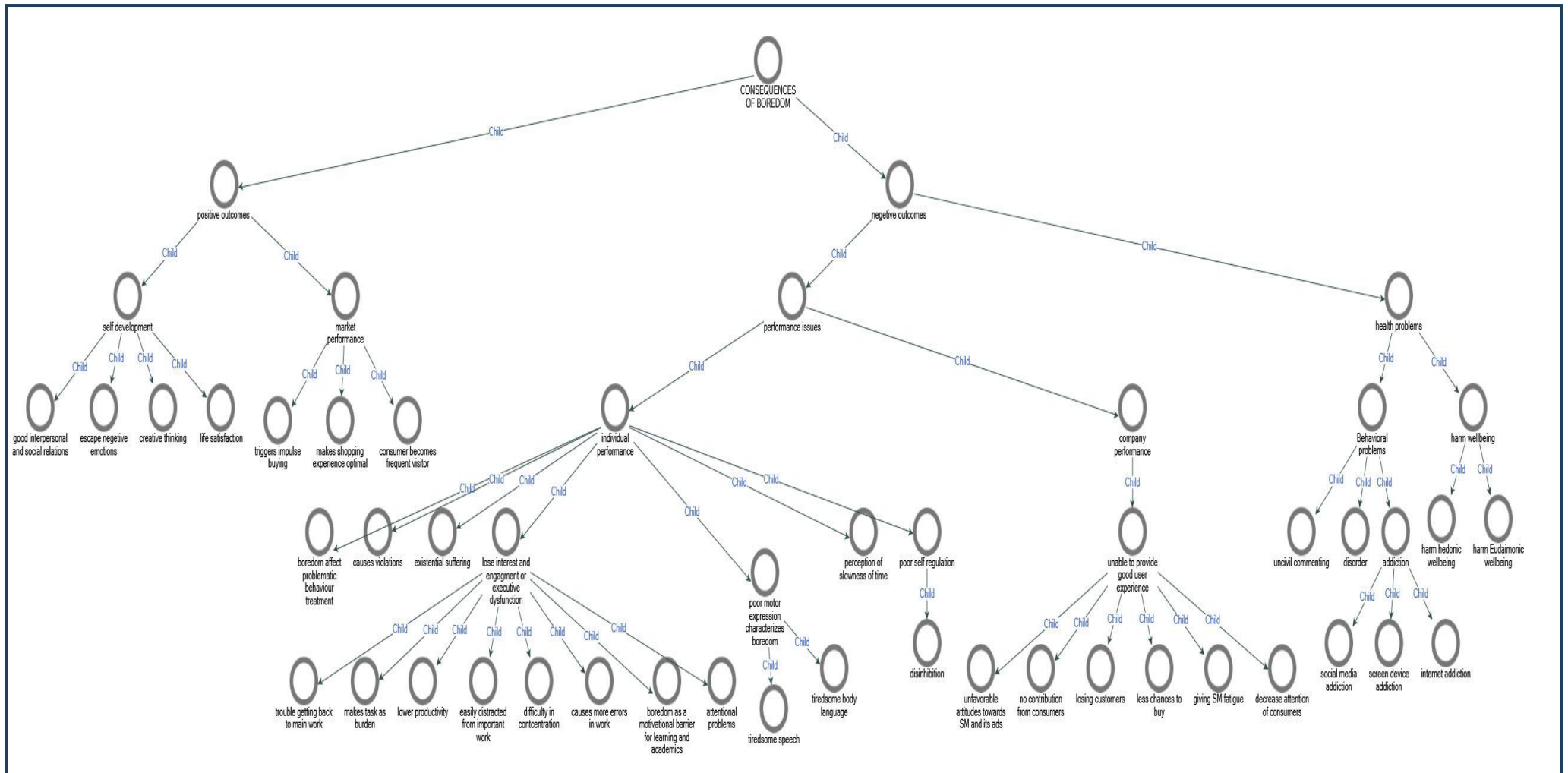


Figure C.5: Visual representation of the theme “consequences of boredom” and its sub themes

Appendix D: Guidelines of conceptual definition

This study's definition of boredom follows the guidelines of conceptual definition presented by Wacker (2004) and Suddaby (2010). They guidelines presented in table D.1 and D.2 below.

1	"Definitions should be formally defined using primitives and derived terms".
2	"Each concept should be uniquely defined".
3	"Definitions should include only unambiguous and clear terms".
4	"Definitions should have as few as possible terms".
5	"Definitions should be consistent within [their] field".
6	"Definitions should not make any term broader".
7	"New hypotheses cannot be introduced in the definitions".
8	"A statistical test for content validity must be performed after the terms are formally defined"

Table D.1 8 Rules for conceptual definitions (adapted from Wacker, 2004, p. 384)

1	"Offer definitions of key terms and constructs"
2	"The definition should capture the essential properties and characteristics of the concept or phenomenon under consideration"
3	"A good definition should avoid tautology or circularity"
4	"A good definition should be parsimonious"

Table D.2 Guidelines for conceptual clarity (adapted from Suddaby, 2010, p. 347)

This study's definition of boredom follows rule of replacement i.e. definiens (negative affective) can be substituted in any sentence for the definiendum (boredom) without changing the sentence's meaning. All terms used in the definition are unique and there exists no overlapping. Modifiers, such as the kind of stimulation and consequences, are used to free the definition from ambiguity and vagueness. This definition used fewer terms are used to convey the essence of the concept and followed the rule of parsimony. Since the inductive framework was built on the context of online commerce and this definition comprises its themes, it is therefore consistent with its field. It is not the expansion of any current definition and nor does it contain any new hypothesis (antecedents, outcomes) – instead of the words "increase" or "decrease", "aims to" is used. This definition is free from circularity and unclear terminologies. It acknowledges that it is reliving itself as an expected outcome without guaranteeing its realisation.

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