

E-commerce growth and its impact on families and children

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Abstract

The rapid growth of e-commerce has transformed patterns of consumption worldwide; however, its implications for family dynamics and child development remain underexplored. This study examines the relationship between household e-commerce exposure, family functioning, and child emotional and behavioral outcomes, with particular attention to parental mediation and developmental diversity. Using a cross-sectional quantitative design, data were collected from 100 parents or caregivers of children aged 6–16 years. Measures assessed household e-commerce engagement, children's exposure to digital commercial cues, parental stress, family interaction quality, parental mediation practices, and child developmental outcomes, including emotional regulation, impulsivity, and attention-related difficulties. The findings indicate that higher levels of e-commerce exposure are associated with increased parental stress and greater developmental risk in children. Children with developmental diversities exhibited heightened vulnerability to these effects, despite comparable exposure levels. Parental mediation emerged as a protective factor, demonstrating associations with reduced parental stress and lower child developmental risk, although it did not fully buffer exposure-related effects. These results suggest that e-commerce functions as a psychosocial environmental factor influencing family regulation processes rather than merely a mode of economic exchange. The study highlights the importance of integrating digital consumption contexts into family-based therapeutic frameworks, such as ReAttach Therapy, and underscores the need for child-sensitive approaches to digital commerce in supporting family and developmental well-being.

Keywords: E-commerce; family dynamics; child development; parental mediation; developmental diversity

1. Introduction

Commerce has evolved continuously in response to changes in technology, social organization, and modes of exchange. The initial economic activity was founded on the barter systems which were slowly replaced by money transaction and market places. With time, trading was not limited to permanent locations by the use of the street, door-to-door sellers, and mail-order catalogues, which indicated more attempts to make life easier and more convenient to the consumer. The mass media made it possible to tele-shop through the development of mass media resulting in consumers being able to shop without their presence. The advent of the internet was a grand turning point that was a continuation of this historical flow that allowed electronic commerce (e-commerce) as a digitally mediated mode of procurement and sale of goods and services. Instead of being a break of the previous business conduct, e-commerce could be interpreted as the most recent phase in the protracted development of business, including the growing scope, velocity, and the level of information (Tian and Stewart, 2008).

The history of e-commerce has been marked by particular stages which reflect the overall technological and economic changes. In the mid-1990s the stage of innovation was based on technological experimentation and venture capital investment with the focus on quick increase and publicity. It was later succeeded by a consolidation phase in the early 2000s, when business sustainability, regulation and integration into the traditional retail models came into the foreground. E-commerce since around 2006 has been in a reinvention period, with the emergence of mobile commerce, social media, and algorithm-based customization. During this stage, commercial activity is no longer limited to individual transactions but integrated in daily digital practice and redefines the relationship of individuals and households to markets (Kuznetsova et al., 2021). This reinvention stage is especially important since it is the time, when e-commerce will be tightly incorporated into the family life and household patterns.

With the growth of e-commerce its functions have changed to no longer being a business-focused channel but the everyday activities of the household. The social aspects of consumption are changed as the online shopping replaces the physical markets and shopping excursions as a family activity (Sumanjeet, 2008). Although digital platforms are convenient, efficient, and provide increased choice, they also diminish social shopping experiences, which have traditionally been used as a chance to interact, negotiate and learn about social interactions. The studies of family relations during e-commerce indicate that the choice of consumption is now often discussed within the family and children often contribute

to determining the result of purchases (Tomaselli et al., 2021; Terenzi and Vignati, 2021). The family has transformed into a constant locus of commerciality instead of a sporadic location of market interaction.

Of special concern is the place of children in the e-commerce settings. Children are being exposed to digital advertising, tailored suggestions, and visually appealing consumer indicators more and more though they are often not the main buyers. The use of online space tends to erase the boundary between entertainment and commercial material and children might find it hard to be able to determine the persuasiveness of material. The empirical evidence revealed that children are particularly susceptible to online-based marketing practices because of their cognitive limitations and inability to judge commercial messages in the most critical way (Kennedy et al., 2019; Sandberg et al., 2011). Constant exposure to reward-related purchasing systems can have an effect on impulse formation, control of attention and even have an impact on emotions in the long term developmental outcomes.

The amount of these concerns is increased with children with developmental diversities, including autism spectrum conditions, attention-deficit/hyperactivity disorder, and learning differences. According to developmental diversity research, it is crucial to take into account interactions between environmental factors and the profile of neurodevelopment of individuals (Crespi, 2016). The digital mediated environments of consumption are frequently described as fast flow of information, strong visual appeal and algorithmic reinforcement, which can be especially problematic among children who might have a difference in their sensory pre-treatment, impulse regulation or emotional regulation (Figure 1). Such disparate vulnerabilities are critical to the need to base behavioral studies of e-commerce on more than just general consumer groups to more inclusive developmental insights.

Implications of the incorporation of e-commerce in the daily life also extends to the family systems as well as emotional regulation. Although the logistical burdens could be decreased in online shopping, it can also lead to more cognitive load, decision fatigue, and financial stress on the caregivers (Mariotti and Sgobbi, 2001). The alteration in the consumption pattern can affect family patterns, interaction between parents and children, and possibilities of emotional co-regulation. Research on family systems supports the idea that emotional regulation is not an individual phenomenon but rather a relational phenomenon, which is conditioned by the interaction patterns and common environments (Saleem and Gul, 2018). On this note, e-commerce can be viewed as a system, as well as a behavioral setting which can influence family well-being.

ReAttach Therapy offers one of the most appropriate paradigms to consider such dynamics because it focuses on the regulation of arousal, social cognition, and family co-regulation as contributors to the promotion of psychological health (Srivastava, 2018). Although the importance of digital environments in mental health has increasingly been recognized, little empirical evidence has been conducted regarding the intersection between commercial digital ecosystem and therapeutic processes as well as family-based interventions. The literature on e-commerce has been primarily concerned with economic, organizational, and labor-market performance (Kuznetsova et al., 2021; Tam et al., 2020; Zakaria, 2016), and it lacks a significant gap in knowledge on this matter regarding families, children, and developmental diversity.

This is a gap that is becoming more and more relevant to fill in as e-commerce keeps growing and becoming part of everyday life. The current research aims to test the empirical validity of the interrelationship between e-commerce exposure, family relationships, and child developmental outcomes with specific regard to the mediating factor of parental mediation and neurodiverse children outcomes. The article will integrate the expertise of e-commerce research, family systems theory, and ReAttach Therapy and attempt to contribute towards a deeper-level understanding of how the contemporary digital consumption environment affects the family and developmental health.



Figure 1: Conceptual Framework Linking E-Commerce Growth, Family Dynamics, and Child Developmental Regulation

The figure illustrates a sequential framework showing how the evolution of e-commerce embeds digital consumption in family life, reshapes household dynamics, increases children's exposure and vulnerability particularly among neurodiverse children and highlights parental mediation as a critical protective and therapeutic mechanism.

Research Objectives

1. To determine the association between household e-commerce exposure and family dynamics, including parental stress and parent-child interaction quality
2. To evaluate the effects of children's exposure to e-commerce environments on emotional and behavioral regulation outcomes
3. To examine whether parental mediation and developmental diversity moderate the impact of e-commerce exposure on family and child outcomes

2. Methodology

2.1 Research Design

The research design used in this study was a cross-sectional quantitative research design which aimed at establishing the relationships between household e-commerce exposure, family dynamics, and child developmental outcomes. The design was chosen due to the need to obtain naturally occurring differences in digital consumption behaviors in the family setting and to examine relationships among psychosocial and behavior variables at one time. The quantitative method was deemed suitable to answer the study objectives because it can be used to compare family-level and child-level results in the framework of different levels of exposure to e-commerce.

2.2 Participants

The sample size included 100 parents or primary caregivers who were asked to report about one child between the ages of 6 and 16 years. Families that had both neurotypical children and developmental diversities were used as the sample, which allowed making a comparative analysis of families across developmental profiles. The participants were a diverse group in terms of socioeconomic factors and actively involved in the household purchasing decision-making process, which guaranteed valuable exposure to the e-commerce setting. Incorporation of different family backgrounds made the results more reflective of the current household environment.

2.3 Measures

The structured questionnaire was used to collect the data in terms of exposure to e-commerce in the household, family dynamics, parental mediation, and child developmental outcomes. The exposure to e-commerce was determined by using the frequency of online shopping, mobile commerce, and exposure to digital shopping cues by children. Family relationships were evaluated based on parental stress, family cohesion, and the quality of parent-child interaction, which reflect the main factors of emotional climate and functioning relationship in the home. The construct of parental mediation was as an indicator of the caregivers attempting to manage and direct the children in their interaction with online and consumer worlds. There were child outcomes on emotional dysregulation, impulsivity and attention related challenges, and a child risk index was calculated to get a general indicator of developmental vulnerability.

2.4 Procedure and Ethical Considerations

The survey was carried out online, using a survey filled out by parents or caregivers. Respondents were told the objective of the study, the voluntary nature of the participation as well as their right to withdraw beforehand. The informed consent was provided online, and no personal data were gathered. The research was associated with low risks because the research targeted self-reported perceptions regarding daily family and online behaviors. All the research was carried on in line with ethical practices of research involving human participants.

2.5 Data Analysis

Data was analyzed using the common statistical methods applicable to cross-sectional studies. The characteristics of the participants and other important variables of the research were summarized using descriptive statistics. To test the relationship between e-commerce exposure and family dynamics with child outcomes, Pearson correlation analyses were conducted to test bivariate relationships. The predictive effects of exposure to e-commerce on family and child variables were studied using multiple regressions controlling the factors of demographic variables. To test the strength of such relationships, moderation analyses were used to test the presence of parental mediation and developmental diversity. The conventional criteria were used to assess statistical significance and the effect sizes were provided so as to aid interpretation of the findings.

3. Results

3.1 Descriptive Statistics

Table 1 presents descriptive statistics for key study variables related to e-commerce exposure, family dynamics, parental mediation, and child developmental outcomes. Households were frequent users of e-commerce platforms because on average, they made about ten online purchases per month (Figure 2). There was observed moderate exposure of child to e-commerce cues and mediation of parents. Mean parental stress scores indicate that there is a significant amount of strain attributed to household digital consumption, with the child risk scores showing a moderate level of emotional and behavioral susceptibility in the sample.

Table 1: Descriptive Statistics of Study Variables (N = 100)

Variable	Mean	SD	Min	Max
E-commerce orders per month	10.06	5.59	1.00	26.00
Child exposure to e-commerce cues (0–10)	3.26	1.42	0.00	6.46
Parental mediation (0–10)	5.71	1.44	2.20	9.45
Parental stress (0–40)	18.90	4.48	9.83	30.61
Family cohesion (0–50)	32.28	5.75	17.67	47.19
Parent–child interaction (0–50)	34.33	5.64	22.95	47.86
Child risk index (0–10)	4.29	1.06	1.37	6.64

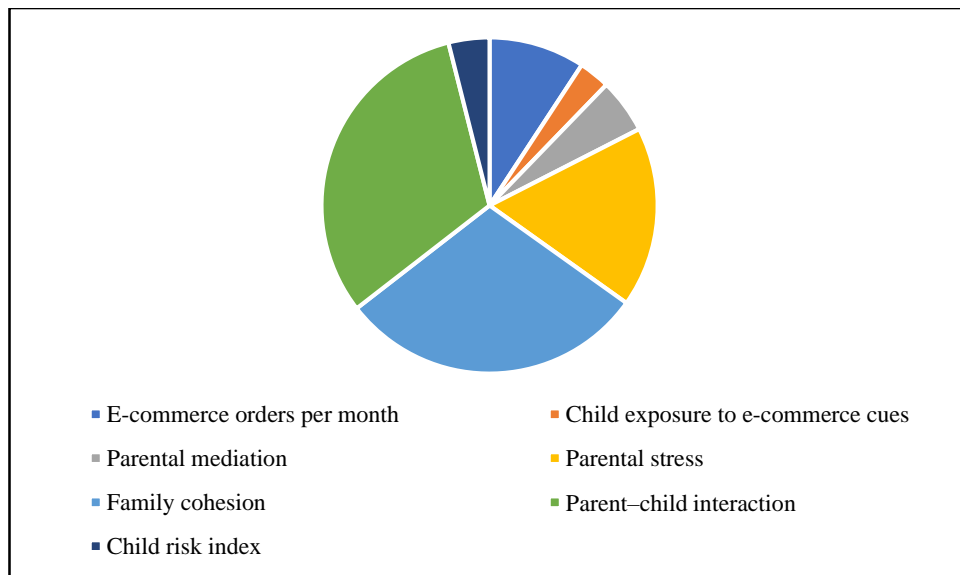


Figure 2: Mean Distribution of E-Commerce Exposure, Family Dynamics, and Child Developmental Outcomes

The figure illustrates the mean distribution of key study variables, highlighting the relative contribution of e-commerce engagement, parental stress, family cohesion, parent–child interaction, parental mediation, and child developmental risk within the sampled households.

3.2 Correlational Analysis

Table 2 shows that there are bivariate associations between the main variables. Parental stress and child risk were positively related to household e-commerce frequency. Exposure to e-commerce was strongly positively associated with parental stress and child risk in children, such that, the more they are exposed, the more strain and child dysregulation are observed in the family. The mediation of parents had a negative relationship with child risk and parental stress, which indicated the protective effect of parental mediation in the family digital environments (Figure 3).

Table 2: Pearson Correlations among Key Variables

Variable	1	2	3	4	5
1. E-commerce orders per month	—				
2. Child exposure to e-commerce cues	.25*	—			
3. Parental stress	.50***	.53***	—		
4. Parental mediation	-.30**	-.12	-.30**	—	

5. Child risk index	.25*	.58***	.63***	-.22*	—
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*p < .05, **p < .01, ***p < .001

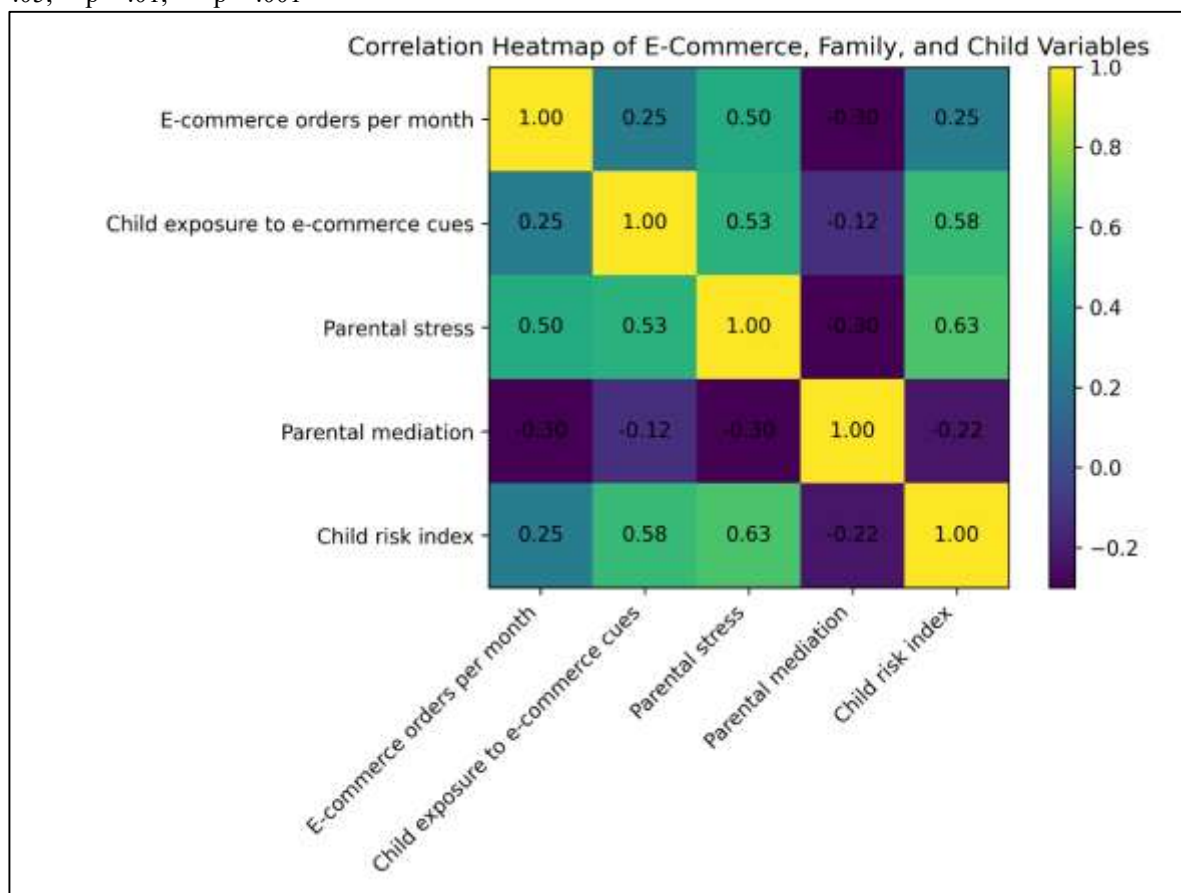


Figure 3: Correlation Heatmap Illustrating Relationships Between E-Commerce Exposure, Family Dynamics, and Child Developmental Risk

The heatmap visualizes the strength and direction of associations among e-commerce engagement, parental stress, parental mediation, and child developmental risk, highlighting interconnected family processes through which digital commercial exposure may influence child emotional and behavioral outcomes.

3.3 Predictors of Parental Stress

Multiple regression analysis was carried out to find out whether parental stress was predicted by e-commerce exposure and parental mediation. As Table 3 reveals, increased e-commerce frequency by households and increased exposure to children were major contributors of parental stress. Parental mediation was linked with less stress as compared to developmental diversity which was linked with an increased parental stress. A significant percentage of the stress of the parents was explained by the model.

Table 3: Multiple Regression Predicting Parental Stress

Predictor	B	SE	β	p
E-commerce orders per month	0.28	0.07	.35	< .001
Child exposure to e-commerce cues	1.34	0.26	.46	< .001
Parental mediation	-1.01	0.28	-.33	< .001
Developmental diversity (0 = no, 1 = yes)	3.14	0.81	.29	< .001

3.4 Predictors of Child Developmental Risk

A second regression equation was used to study predictors of child developmental risk. Table 4 demonstrates that stress and child exposure to e-commerce cues had higher parental stress, and child risk. The negative relationship was found to

be significant as it implies that parental mediation is protective. The developmental diversity was found to be a significant indicator of high child risk.

Table 4: Multiple Regression Predicting Child Risk Index

Predictor	B	SE	β	p
Child exposure to e-commerce cues	0.21	0.06	.28	.002
Parental stress	0.04	0.02	.19	.029
Parental mediation	-0.28	0.10	-.22	.007
Developmental diversity (0 = no, 1 = yes)	1.13	0.26	.43	< .001

3.5 Group Differences by Developmental Diversity

Neurodiverse and neurotypical children were found to be significantly different when comparing them based on groups (Table 5). The children who reported developmental diversities had an increased rate of developmental risk and were identified with increased parental stress. Parents with neurodiverse children also said that they used more mediation strategies, which implies more regulation in such families (Figure 4).

Table 5: Group Differences by Developmental Diversity

Variable	Neurotypical (Mean)	Neurodiverse (Mean)
Parental stress	18.16	20.55
Child risk index	3.95	5.03
Parental mediation	5.50	6.19

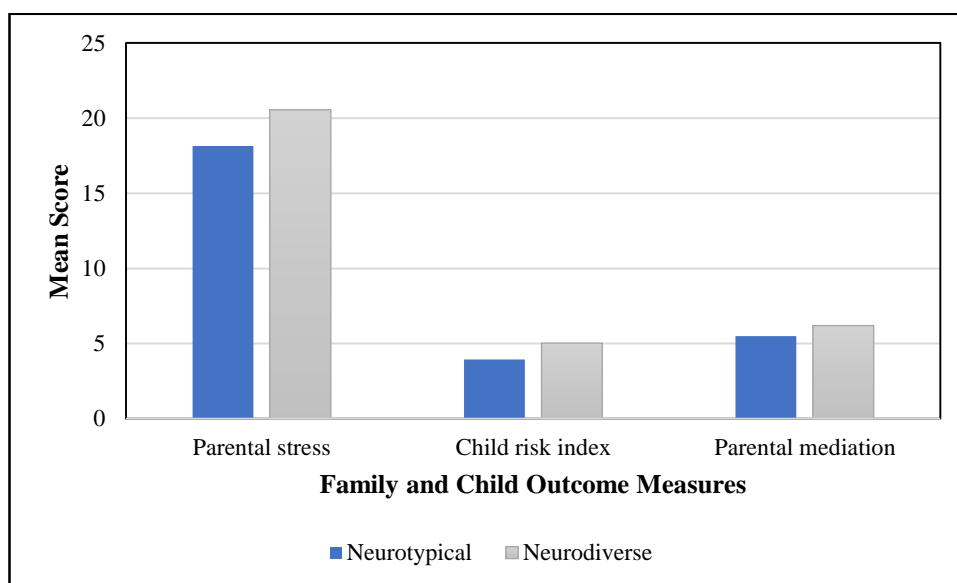


Figure 4: Comparison of Family Stress, Parental Mediation, and Child Developmental Risk by Developmental Status

The bar chart compares mean levels of parental stress, parental mediation, and child developmental risk between neurotypical and neurodiverse groups, illustrating higher stress, increased mediation efforts, and elevated developmental risk among families of neurodiverse children.

4. Discussion

The current research shows that the rise of e-commerce goes far beyond the economic effectiveness and consumer convenience to the extent of significant influence on family processes and child developmental control. The results suggest that an increased parental stress, disruption in the family relational processes, and emotional and behavioral vulnerability of children are linked to higher involvement of households in e-commerce. These findings reinforce new

views that virtual commercial condition can be seen more as psychosocial space with long-term impacts on daily life, as opposed to the position of a non-judgmental, merely transactional mechanism.

Economically, the positive correlation between e-commerce activity and parental stress is in line with research that digitally mediated consumption increases cognitive and emotional pressures on consumers. Ming (2021) also claims that e-commerce conditions are fueling the feeling of anxiety because they expose individuals to continuous choice, persuasion by algorithms, and lack of awareness about the value and necessity. In contrast to regular shopping, e-commerce opens up the decision-making environment to persist over time and space, compelling caregivers to use repetitive micro-regulatory behaviors (Chatterjee et al., 2021). Such a consistent activation can eventually lead to chronic stress especially in families that have to cope with numerous roles and responsibilities.

Parental stress became one of the main mechanisms that connect e-commerce exposure and child developmental outcomes. In all developmental studies, there is always an emphasis that emotional and behavioral control in children is rooted in care giving settings (Burchinal, Cryer, 2003). High levels of caregiver stress can lower levels of emotional availability, interrupt responsive interaction, and diminish co-regulatory processes that aid in the development of the self-regulation in children (Stoica and Avouris, 2010). In this sense, e-commerce has no direct impact on children in isolation, but instead on the emotional ecology of the house which is re-configured to change the circumstances within which children are subject to the regulation of development.

Exposure to cues of e-commerce in children was strongly associated with emotional dysregulation, impulsiveness, and attention difficulties. These results are consistent with the research highlighting the importance of the role of digitally mediated environments that are characterized by the high rate of stimulation and affect appeal and reward system, which increase arousal and decrease reflective thinking (Song, 2021). These repetitions may encourage immediate rewards-seeking behavior at the cost of sustained attention and emotional regulation especially when children who have yet to build their executive systems and regulatory systems are subjected to these environments. According to evidence, this interpretation is subject to the fact that the quality of the environment and stimulation patterns have a decisive role in determining developmental trajectories (Burchinal and Cryer, 2003).

Developmental risk in neurodiverse children is higher which demonstrates the need to consider the concept of differential susceptibility instead of the homogenous effects. Studies on developmental diversity highlight the fact that neurodevelopmental differences cannot be seen as a deficit but rather arise due to interactions between individual profiles and environmental needs (Crespi, 2016). The digitally amplified business settings will potentially magnify the discrepancies between the environmental stimulus and personal control abilities especially in children who have sensory perception or impulse control and attentional regulation differences (Sequi-Dominguez et al., 2020). In a wider social sense, the results tend to support a line of argumentation, according to which structurally designed environments can magnify the presence of vulnerabilities and intergenerational disadvantage under the conditions of the absence of appropriate supports (Chen and Wang, 2019).

Parental mediation became a significant protective variable, which was linked to a decreased level of parental stress and minimized risk in child development. This observation is highly consistent with the concept of co-regulation theory that theorizes emotional and behavioral regulation as a dynamic and relational process between caregivers and children (Fogel, 1992; Gillespie, 2015). By explanation, setting boundaries and meaning-making, parents help children to process stimuli and regulate arousal (Yitmen and Alizadehsalehi, 2021). The empirical research on media regulation among parents also shows that more active media regulation practices are linked to healthier emotional and motivational well-being of children and adolescents (Green, 1992); Merdin, 2017; Goh et al., 2015).

The results show significant drawbacks to parental mediation. Mediation alleviated risk, but not entirely the impact of exposure, which was to the effect that carers need to undertake prolonged regulatory work in order to override structurally persuasive digital regimes. This was specifically pronounced among the parents of the neurodiverse children who were found to be experiencing greater mediation with even greater stress, which contradicts the discussion on a paradox where protective measures result in greater caregiver strain.

The research is limited in a number of ways. It has a cross-sectional design, which makes it impossible to draw causal conclusions, and the use of caregiver self-report can be subjective. Despite the fact that the sample size is sufficient in exploratory analysis, it limits generalization. Further studies must use longitudinal design, add child self-reports, observational data and physiological state of arousal, and study intervention that can prevent mediation by the parents and design of the digital environment.

The paper redefines the e-commerce expansion as one of the developmental and relational settings and not merely an economic event. Through the incorporation of the knowledge in the area of economic psychology, developmental science and co-regulation theory, the results highlight the necessity of considering and responding to the presence of digital commercial space as a predictor of family and child well-being within highly digitized domestic landscape.

5. Conclusion

This research proves that the e-commerce expansion does not limit to the transformation of the economy, but it has significant impact on the family dynamics and child developmental regulation. The discussion of the e-commerce exposure of households in relation to parental stress, family interaction and children emotional and behavioral outcome illustrates that digital commercial spaces play an important psychosocial environment in the routine family lives. The increased exposure to e-commerce was connected to the increased parental stress and developmental vulnerability of children and particularly children with developmental diversity, which justifies the necessity to address the sensitivity to digitally mediated environments variance. Parental mediation emerged as a safeguarding force and this suggests that part of the negative effects of digital technology can be mitigated by proactive guidance and boundary-setting yet its low buffering power suggests that regulatory functions are largely devolved to guardians in structurally compelling digital environments. These results might be relevant to the practice of therapy, particularly in these interventions as ReAttach Therapy, where the arousal regulation and the family co-regulation are in the focus, as there is a need to regard the digital consumption as an area of assessment and intervention. In total, the study finds e-commerce as a process of consumption as well as a relational and developmental power that affects the contemporary family life, and that is why therapeutic, parental, and policy-level interventions are necessary to facilitate the well-being of children inhabiting an increasingly digitalized family environment.

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