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ANTECEDENTS OF CONSUMER BEHAVIOUR IN DIGITAL MARKET PLACE

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ABSTRACT

The objective of undertaking this review is to identify the core factors which have an impact on the Online shopping behaviour of the customers. Current review is built on identifying the gaps and studying the findings of the research papers based on Online shopping. A body of 60 research papers was reviewed which investigated a plethora of antecedents of online shopping. Based on the review, we identify and propose six themes, pertaining to the concepts, methodologies and

findings.

The current study throws light on various determinants of consumer behaviour towards online shopping. A list of variables in the form of themes is studied and suggestions are made. It has also considered the customers' behaviour towards the upcoming technologies like Virtual reality and Augmented Reality. The study will not only enhance the literature about the subject but will also provide cues to the marketers to build new strategies which can enhance the online shopping experience

of the customers.

KEY WORDS

Online shopping, Consumer behaviour, Online reviews, Purchase intention

INTRODUCTION

Online shopping is a process in which consumers directly buy goods or services over internet, with or without an intermediary. Online shopping is based on e-commerce to buy products or services directly from the seller through the Internet. Traditional brick and mortar business model has been replaced by internet-based or Click and Order business model (Mohammad Anisur Rahman, Md. Aminul Islam, Bushra Humyra Esha, Nahida Sultana & Sujan Chakravorty, 2018). Internet or web platform has been used extensively by people to shop for a wide variety of items from tiny house hold items to properties to airplane tickets. Now people get multiple options to select the products and services of their choice, while

they are shopping online (Mohammad Anisur Rahman et al.).

Worldwide increase in the usage of internet has shifted consumers' attention towards online shopping. The increased confidence in technology and online payment sectors are causing a change in consumer behaviour, away from traditional

methods (Khouloud, 2020). Statista (2018) reported an estimated amount of 1.8 billion people worldwide now purchase

their goods online. According to the Internet World Statistics (2020), there are over 3 billion internet users globally, thus representing a 577% increase in growth when compared to the global population of internet users in 2000. This trend indicates that online shopping has a lot of potential and benefits to societies and businesses worldwide. With the development of e-commerce, the number of online shoppers has increased worldwide. The number of digital buyers in 2021

is 2.14 billion, which makes 27.6 percent of 7.74 billion people in the world (Source: Statista).

The e commerce industry in India has seen an exponential growth in the last few years. This fillip is due to the factors like rapid adoption of technology, improved standard of living, increasing young population, better access to internet and economically strong middleclass. Investors have also been aggressively funding the e-commerce sector. Use of smart phones and tablets has further facilitated online shopping.

The entry of global giants has led to an intense competition among online retailers. E-retailers are working diligently to stand in the fierce competition. Various variables like customers' trust, purchase intention, online reviews, convenience, perceived usefulness, web atmospherics, web cues etc. are studied intensively to enhance the online experience of the customers while shopping online.

Nowadays, online reviews gain as much trust as personal recommendations for the majority of consumers (Murphy 2017). More and more these reviews are read, written and evaluated online (Lipsman et al. 2019) and a glowing review motivates behavior more than discounts and other offers (in the domains of durable goods and electronics; Kats 2018). The review helpfulness reflects the subjectivity and quality experienced by the readers (Filieri et al., 2018; Jiang et al., 2017). Online review sites, e.g., Yelp, Amazon, etc., host millions of customer reviews that influence the purchasing decisions of many prospective customers (Guo et al., 2020). Earlier studies have shown that online customer reviews have a significant impact on the performance of every business (Li et al., 2019). More than 214 million reviews have been published on Yelp at the moment and the figure is growing by 12% per year (Yelp, 2020).

Consumers seem to want product reviews (www.iperceptions.com), and firms seem happy to offer such reviews on their websites, in their advertising, and elsewhere (Arcillo 2011; Dellarocas 2003; Harper 2014; Rawlins 2011). Indeed, firms are increasingly engaging in efforts around "review solicitation" and "online reputation management," incentivizing previous purchasers to write reviews in exchange for discounted or free products. As firms invest in, and consumers trust, online reviews, their management has come to occupy a more prominent role in marketing practice.

The purpose of this review is to better understand the factors that act as drivers of online shopping. The research papers under review throw light on the intensity with which various factors (Hedonic or Utilitarian) influence each other in the context of online shopping. Product reviews have gained much trust for majority of the consumers (85%;Murphy 2017)), and a glowing review motivates behavior more than discounts and other offers (in the domains of durable goods and electronics;Kats 2018).

The paper is related to three research streams: consumers' choice between offline and online retailers, pricing equilibrium under duopoly competition, and the impact of dynamic pricing and price matching strategy on competition and heterogeneous consumer behavior.

Consumer Research

Information search is an important activity performed by the consumers as they try to reduce uncertainty and perceived risk before an actual purchase. They generally use multiple channels (online and offline) to retrieve information before making their purchase decisions (Degeratu, Rangaswamy, & Wu, 2000; Jang, Prasad, & Ratchford, 2017). Recent studies have shown that consumers usually prefer to search products through online platforms. Some of the popular commercial and non-commercial online sources for the products like automobiles and travel are bulletin boards, travel websites, and manufacturer and dealer websites (Haridasan, Fernando and Saju, 2021). If compared to offline sources, the range of search is comparatively greater for online sources, which, in turn, results in efficiency gains for experienced consumers who go back to online sources (Ho, Lin, & Chen, 2012a; Klein & Ford, 2003; Kulkarni, Ratchford, & Kannan, 2012; Xiang, Magnini, & Fesenmaier, 2015).

The augment of rapid globalization has created the notion of 'borderless' world, which is a world without any boundary, nevertheless cultural influences have an impact on many facets of consumer buying behaviour (Banerjee, 2008). In a cross-cultural study, across the nations, with environmental friendly products, Bhate (2002) posited that UK respondents generally exhibited non-committal attitude and behaviour; however, the Indian respondents displayed greater attitude of involvement, which was further reflected in their purchasing behaviour. Singh, Fassott, Zhao, and Boughton (2006) observed and concluded that online shoppers belonging to three different nations, namely Germany, China, and India, favoured web portals which are according to their local cultures. Authors also posited that values, principles, and beliefs definitely influence shoppers' purchase intention on the Internet through an online shopping portal. It was observed that e-commerce portals that were consistent in potraying cultural aspects were rated more positively on factors such as ease of navigation, appearance, buying intention, and attitude towards the portal. In another study, it was depicted that in comparison to the US consumers, Indian consumers were less apprehensive to reveal private information on the Internet (Gupta,Iyer and Weisskirch, 2010).

Online Shopping Values

The existing literature on retailing suggests that experience of a consumer, while shopping, is an amalgamation of hedonic shopping value (HSV) and utilitarian shopping value (USV; Babin, Darden, & Griffin, 1994; Liu & Forsythe 2010; To, Liao, & Lin, 2007). Latent entertainment and emotional values underlying in a shopping are reflected by a hedonic tendency, which is manifested through enlarged arousal and involvement, besides perceived freedom, escapism, fantasy, and emotive facets of the buying experience (Babin et al., 1994; Sorce, Perotti, & Widrick, 2005).

The study proposes a perspective on the indirect influence of the stimuli (internal and external influencers) on shoppers' behavioural outcome. In an Indian context, Website Satisfaction plays an 'intervening role' in the relationship between online shopping values and website atmospheric cues (inputs) and purchase intention (Sanjeev Prashar et al., 2017).

With the rapid but sporadic increase in the literature related to online shopping, the corpus now has a mature critical data that can be reviewed in order to shed an overview to help understand a) What are the drivers for adopting online shopping? b)How to identify the potential segment of consumers adopting online shopping? c) what is the most important dimension of e service quality which can predict consumer behaviour towards online purchase? d) how to effectively rank products for a consumer's purchase decision through online reviews?

To address the above mentioned questions, the aim of this study is to develop a comprehensive understanding of the current state of literature and knowledge on how online shopping has so far taken place, what are the recent developments in online shopping in terms of technology, its advantages and disadvantages, the contexts in which it has been used, what effects it has on consumers' shopping psychology and further behavior, and what future avenues of research are presented.

Advantages of online shopping

Advantages	Description
Time effective	In online shopping customers can buy instantly with just a
	few clicks of mouse from the site.
Saves energy	Customer is not required to go to the physical store for
	purchase, hence online shopping saves energy.
Price comparison	Comparing prices is effortless and straightforward during
	online shopping as it requires just a few clicks to switch

	the site and compare prices.
24*7 availability	Customer can purchase according to his own convenience throughout the day as online shopping is available for 24
	hours a day.
Reduces waiting time	In physical stores customers have to stand in long ques for making payments but in online shopping payments can be made in a few clicks.
Overcomes geographical barriers	Any product across the borders could be purchased easily without any geographical limitations through online shopping.
Saves fuel	Since there is no need to cover a distance for online shopping, thus it saves fuel.

Source: eBay (2013) and Jain (2016)

Disadvantages of online shopping

Despite of the success story of online shopping, there are certain difficulties which are faced by online customers, that can be explained under the following table:

Disadvantages	Description
Lack of touch and feel	Most of the online stores show pictures and description of
	the products, there is always a lack of touch , feel and
	testing of the products.
Security concerns and fraud	Customers face high risk of fraud on the part of merchants
	as they lack inability to inspect the product before
	purchase. There are certain security issues faced by
	customer while making online purchase.
Privacy	Privacy has been a big issue for most of the customers.
	Most consumers try to avoid spam and telemarketing
	which could be from supplying contact information to an
	online merchant. Several websites along with Brick and
	Mortar's store, keep a record of consumer shopping habits
	to suggest an item or another site to visit. Although
	different jurisdictions have different laws concerning
	consumer privacy and different level of enforcements, still
	online shopping causes privacy concern.
Lack of full cost disclosure	It is easy for the customers to compare the best price of an
	item online, but it is not easy for them to identify the total
	cost (including additional fees, shipping, tax, etc.) of an
	item online. Lack of full disclosure of the total cost is one
	of the major concerns about online shopping. This problem
	is much evident in cross-border purchasing.
Diminished Instant Satisfaction	Customers can buy and use the product instantly in case of

offline purchase, which is very satisfying. However, online
shopping needs patience to wait for the product to arrive
(about 6/7 hours or even more), which usually diminishes
the satisfaction level.

Source: eBay (2013) and Hub pages (2015)

Identification and collection of literature

Systematic reviews focus on the "identification, evaluation and interpretation of relevant research questions or phenomenon of interest on a particular area" (Busalim & Hussin, 2016). The application of systematic methods in reviewing articles can minimize bias and provide reliable results (Petticrew & Roberts, 2006; Snyder, 2019; Tranfield, Denyer, & Smart, 2003).

The study identifies, retrieves and reviews the existing research papers that are related to online shopping (N=60). A systematic and structured approach is used to identify the major themes of online and offline information search from the existing literature. The process of review includes various recommended stages, viz, research questions formulation, identification of studies from prominent databases, search strategy definition, data extraction and results (Han, Xu, & Chen, 2018; Nguyen, Leeuw, & Dullaert, 2018). which includes the steps of defining the question, carrying out the literature search, screening the identified literature, assessing the eligibility of remaining studies, data extraction, critical appraisal and finally a synthesis of the literature.

The synthesis of the literature

The literature review was carried out by studying 60 research papers. The literature was derived from peer-reviewed articles in journals, conferences and book chapters. About 70% of the papers reviewed were published between 2017 and 2021, which suggests that the current study has tried to cover most of the latest developments in context of online shopping like technological advancements, antecedents of shopping, virtual reality and augmented reality.

Research gaps

Despite of its importance, very little research has focused on how consumers respond to various channel mix initiatives during a shopping experience. Very little quantitative research has been done in the field of traditional and online sales, which are considered as widely researched areas in retail and consumer analytics (Ganesh et al., 2010; Kirby-Hawkins et al., 2018). There is a knowledge gap in context of grocery click & collect patronage and the factors which are likely to govern the channels performance.

Online consumer search is an under-studied area compared to offline consumer search. More importantly, very few studies have put the spotlight on the predictors of online information search. Furthermore, there is a lack of literature that compares the antecedents of online and offline information search. Hence, the objective of this study is to perform a systematic review of consumer information search in the context of both.

In spite of such a growing interest in the new digital technologies, most of the existing marketing studies are either conceptual or descriptive in nature, with barely any attempt to empirically examine the consumer perceptions, attitudes and behaviors towards all these new digital technologies and also the influence of the unique attributes of these technologies on different stages in the consumer decision-making process are not yet explored (Sharma et al., 2021). For example, many articles have documented the growing popularity of AI among a wide range of applications, such as customer service, retailing, healthcare, and transportation (e.g., Davenport and Kirby 2016; Davenport and Ronanki 2018). More

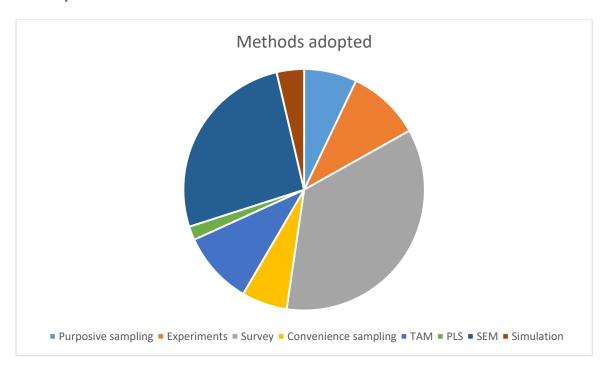
recently, Davenport et al. (2020) have introduced a framework to organize AI applications using their task automation timeframe and form (digital vs. robot) and suggest future research agenda to test the predictive ability of AI applications and the challenges in their adoption and usage by consumers (e.g., loss of autonomy, privacy, bias and ethics). There has been a scarcity of pervasive adoption of virtual reality by retail companies while the potential affordances of VR for and the comparative benefits and disadvantages of brick-and-mortar versus web based settings are still not clear on a subjective level.

New Digital Technologies and Shopping

Research on online shopping indicates a wonderful courting among every degree of purchaser choice making technique and quantity of online purchase. For example, customers who used web services, bought more extensively online (Comegys et al. 2006). Customers' satisfaction with the purchase can be determined by the comparison of his expectations with the perceived performance of the product. When the perceived overall performance of the product does not meet the expectations, then, the customer is dissatisfied, and which at times may result in cognitive dissonance. However, due to advancement of technologies, customers are now able to examine a product before buying. It makes the customer more satisfied and confident, reducing cognitive dissonance (Hilken et al. 2017).

Methods

In terms of the methods used in the body of literature on online shopping, both quantitative and qualitative methods are extensively used.



Major gaps identified and findings

Themes	Gaps	Findings		Authors	Year
Online Reviews	little is known about which	Reviews	providing	Taly Reich and Sam J. Maglio	2019
	particular positive reviews	any	negative		
	companies should leverage	information	n may		

	to optimize sales.	direct the customers		
	There exists a gap in	towards their		
	context of neutral sentiment	potential losses as		
	orientation and	compared to their		
	multidimensional complex	potential gains		
	sentiment orientation.	prompting them to		
	Existing studies have also	accept the advice of		
	ignored the discrete random	the reviewer.	Zaoli Yang 1 et al.	
	dynamic characteristics and	A novel method		2019
	dynamic information	based on DDIFWA		
	preferences of consumers.	operators for		
	•	decision-level		
		sentiment analysis is		
		provided by the	Huifang Dong et al	
		research.	Training Doing of the	
		SO-ILES TODIM		2021
		method is proposed		2021
		which can rank the		
		reviews according to		
		their helpfulness. A		
		new language		
		evaluation set is		
		constructed, based on		
		emotional and		
		ontological features		
		(SO-ILES), which		
		can easily extract the		
		characteristic		
		information of		
		research objects and		
		is more applicable in		
		the field.		
Perceived risk,	Previous studies still have	There is a large	Darius-Aurel Frank & Anne	2020
·			Odile Peschel	2020
and online	many conflicting	statistically	Outle rescilet	
shopping	conclusions regarding the	significant difference		
intention	impacts of	between the two		
	perceived risks on	segments (adopters		
	consumers' online shopping	and non adopters of		
	intention.	online shopping),in		
		terms of perceived		
		compatibility,		
		companionity,		

perceived social norm	T	
and perceived relative		
advantage. Perceived		
risk and perceived		
complexity are found		
to be statistically		
significant		
The shopping		
intention of online		
customers is		
positively affected by		
their attitude,		
subjective norms,		
perception of		
behavioral		
control, perception of		
usefulness and trust.		2021
While online		
shopping intention is		
inversely related to		
perceived risks.		
Among all factors,		
perceived risk is	NgocThangHA1	
considered to have	et al.	
	et al.	
the strongest impact		
on online shopping		
intention.		
The slope		2021
for the relationship		
between trust in	Sikandar Ali Qalati, Esthela	
online shopping and	Galvan Vela, Wenyuan Li,	
purchase intention is	Sarfraz Ahmed Dakhan, Truong	
moderated by	Thi Hong Thuy & Sajid	
perceived risk,	Hussain Merani	
showing that the		2021
relationship becomes		
stronger when		
perceived risk is high.		
Trust significantly		
mediates the		
relationship between		
perceived service		
1		

		quality, website		1
		quality reputation,		
		and online purchase		
		intention		
		The perceived risk		
		effected customers'		
		online shopping		
		intentions negatively.		
		Secondly, perceived	Shewa Yasin Ahmed1, Bayad	
		technology was	Jamal Ali2, Cemil Top3	
		affecting the		
		intentions positively.		
		Lastly, it was		
		observed		
		that trust was		
		positively related		
		with the online		
		purchase intentions.		
		_		
		Uncertainty,		
		knowledge, perceived		
		risk, price, experience	Anu C. Haridasan et al	2021
		and involvement are		
		the major themes		
		associated with		
		consumer information		
		search		
				2021
Convenience	There is a dearth of indepth	There is a strong	Drawannarat Drawar a Ana-1-	2021
Convenience	_	There is a strong	Prawannarat Brewer a, Angela	2021
	study of	effect of menu	G. Sebby b	
	Convenience, as	informativeness on		
	an antecedent of	consumers' perceived		
	user behaviour in	convenience of online		
	terms of online	food ordering.		
	shopping.	Convenience was		

	Τ	C 14 1 d :		,
		found to be the most	Michelle A.	2016
		important factor while shopping		2010
		online.	MorganoskyBrenda J. Cude Felicita Davis and Manoj Britto	
			Francis Gnanasekar	
		Convenience and social influence are		2021
				2021
		found to be the two	Chen, Shu-Fen Huang, Yen-Ting	
		strongest predictors	Chang and Serhan Demirci	
		of perceived	Swapan Kumar Saha1,	2021
		usefulness and	Paulo Duarte2,	2021
		perceived enjoyment	Susana C, Silva3,	•
		respectively.	Guijun Zhuang1	2020
		Qualitative insights	Timo Rintam€aki et al.	
		suggest that		
		perceptions of the		
		returning experience		
		are motivated by		
		monetary		2021
		costs, convenience,		
		stress and guilt.		
Customer	There is a lack of studies	Customer satisfaction	Paulo Rita a , Tiago Oliveira a	2019
satisfaction	which investigates the	has a great impact on	and Almira Farisa b	
	influence of customer	repurchase intention		
	satisfaction on online	and WOM.		
	shopping behaviour.	Customer satisfaction		
	Both theory and practice	is enhanced by	Shian-Yang Tzeng	
	need sharper insights to	information quality,		2020
	foster consumer	savings and product		
	satisfaction, but such	quality but is		
	knowledge remains sparse	worsened by product		
	in the literature	return in context of		
		online shopping		
		holiday.		
		Customer		
		behavior is	Felicita Davis and Manoj Britto	
		significantly as well	Francis Gnanasekar	2021
		as positively related		
		to customer		
		satisfaction.		

		customers with online	Swapan Kumar Saha1 ·	
		shopping experience	Paulo Duarte2	
		have a strong effect	Susana C. Silva3	2020
		on the relationship	Guijun Zhuang1	
		between service		
		convenience and		
		customer satisfaction.		
		It is also found		
		that satisfied		
		customers have a		
		desire to stay longer		
		and are willing to pay		
		more.		
Hedonic and	Very little is known about	A major role is	Savvas Papagiannidis et al.	2016
Utilitarian	the impact of shopping	played by	Sanjeev Prashar, T. Sai Vijay,	
shopping value	values on behavioural	telepresence	and Chandan Parsad	2017
11 5	outcomes in context of	components in		
	online shopping.	simulated experience		
		and		
		the critical role of that		
		experience, along		
		with hedonic and		
		utilitarian values, in		
		engagement.		
		In an Indian context,		
		Web Satisfaction		
		plays an 'intervening		
		role' in the		
		relationship between		
		online shopping		
		values and website		
		atmospheric cues		
		(inputs) and purchase		
		intention (response).		
		A further analysis of		
		the empirical results		
		revealed that		
		the Hedonic		
		Shopping Value and		
		Web Experience are		
		the strongest		
		predictors of WS in		
	<u> </u>	_		

		the Irdian 1		
		the Indian online		
		shopping market.		
		The modern		
		retail environment		
		should enhance the	Petruzzellis, L., Fronzetti	
		hedonic shopping	Colladon, A., Visentin, M., &	
		experience in terms of	Chebat, JC.	2017
		fun, fantasy, moods,		
		and emotions		
		One of the key		
		findings is the	Anubhav Mishra, Anuja	
		moderating role of	Shukla, Nripendra P. Rana, and	
	Very less is explored about	product type	Yogesh K. Dwivedi	
	variation of consumers'	(utilitarian and		2020
	responses between different	hedonic), which		
	interfaces (multisensory	shows that consumer		
	and haptic) and product	responses to an		
		interface		
	types (utilitarian and hedonic).			
	neuonic).	(multisensory or		
		haptic) in a purchase		
		process are also		
		influenced by the		
		product they		
		are purchasing.		
		Moreover, consumers		
		prefer a purchase		
		environment		
		where product and		
		interface		
		characteristics are		
		similar and		
		complementary.		
Virtual reality,	It is not fully explained as	VR technology is	Byoungho Jin1 , Gwia Kim2,	2021
augmented reality	why the VR store	found effective	Marguerite Moore3 and Lori	
and mixed reality	environment results in	regardless of	Rothenberg4	
in online	positive behavioral	consumers'		
shopping	intentions.	familiarity		
11 0	Previous VR studies have	with a store, which		
	not considered the potential	implies the		
	impact of consumers' level	effectiveness of VR		
	of familiarity with the store	over website		
	or ranning with the store	Over website		

in question.	in enhancing store		
There is a dearth in our	attractiveness, which		
understanding of how VR	is an under-studied		
technology has been	area.	Anubhav Mishra1 Anuja	
investigated in retail-related	Online retailers are	Shukla2 Nripendra P. Rana3	2020
literature.	widely using	Yogesh K. Dwivedi4	
	augmented reality		
	(AR) and virtual		
	reality (VR)		
	technologies for		
	resolving mental and		
	physical intangibility		
	issues in a product		
	evaluation.	Sharma, P. and Ueno, A. and	
	Internet is found to be	Dennis, C. and Turan, C.P.	
	the most popular		2021
	technology with		
	highest scores on		
	information search,		
	purchase behavior,		
	familiarity, past		
	usage and utilitarian		
	attribute. On the other		
	hand, augmented		
	reality shows highest		
	scores on		
	virtualization and		
	human-like attributes.		
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Conclusions

The current study makes various important key contributions to understand the antecedents and technological developments in online shopping. It also summarises the research methodologies, theories, models and technologies which are prevalent in today's shopping environment. The study can inspire the researchers to conduct more interdisciplinary studies in the field of information science and retail management. More significantly, this study refines the antecedents and technological developments in the context of online shopping. The study further provides an insight into six themes which were found most relevant in explaining the reasons behind online shopping. Online reviews, perceived risk, convenience, hedonic and utilitarian values, customer satisfaction and latest developments in technology play a significant role in influencing the customers to purchase online. The study provides the future avenues in terms of concepts, themes, methods and technologies, which can eventually guide the researchers to understand the current scenario of online shopping, retail phenomena, select suitable research questions, design experiments, and use different tracking technologies. The study

follows the advantages and disadvantages given by eBay (2013) and Hub pages (2015) which further add to the antecedents of online shopping. It explains the reasons behind the emergence of online shopping. Thus, this study provides insights into several aspects of online shopping.

References

- 1. Laudon, K.C.; Traver, C.G. E-Commerce: Business, Technology, Society; Pearson: London, UK, 2016.
- 2. Guo, J.; Gong, Z. Measuring virtual wealth in virtual worlds. Inf. Technol. Manag. 2011, 12, 121-135. [CrossRef]
- 3. Kou, W. Payment Technologies for E-Commerce; Springer: Berlin/Heidelberg, Germany, 2013.
- 4. Slater, M.; Wilbur, S. A Framework for Immersive Virtual Environments (FIVE): Speculations on the Role of Presence in Virtual

Environments. Presence Teleoperators Virtual Environ. 1997, 6, 603–616. [CrossRef]

5. Kovács, P.T.; Murray, N.; rozinaj, G.; sulema, Y.; rybárová, R. Application of immersive technologies for education: State of the art.

In Proceedings of the 2015 International Conference on Interactive mobile communication technologies and learning (IMCL),

Thessaloniki, Greece, 19–20 November 2015; pp. 283–288.

6. Suh, A.; Prophet, J. The state of immersive technology research: A literature analysis. Comput. Hum. Behav. **2018**, 86, 77–90.

[CrossRef]

7. Xue, L.; Parker, C.J.; McCormick, H. A virtual reality and retailing literature review: Current focus, underlying themes and future

directions. In Augmented Reality and Virtual Reality; Springer: Berlin/Heidelberg, Germany, 2019; pp. 27-41.

8. Sensortower. Pokémon GO Hits \$1 Billion in 2020 as Lifetime Revenue Surpasses \$4 Billion. 2020. Available online: https:

//sensortower.com/blog/pokemon-go-one-billion-revenue-2020 (accessed on 16 December 2020).

9. MordorIntelligence. Global Virtual Reality In Gaming Market (2020 to 2025)—Growth, Trends, and Forecast. 2020. Available

online: https://mordorintelligence.com (accessed on 16 December 2020).

10. Viglialoro, R.M.; Condino, S.; Turini, G.; Carbone, M.; Ferrari, V.; Gesi, M. Augmented Reality, Mixed Reality, and Hybrid

Approach in Healthcare Simulation: A Systematic Review. Appl. Sci. 2021, 11, 2338. [CrossRef]

11. Han, B.; Kim, G.J. AudienceMR: Extending the Local Space for Large-Scale Audience with Mixed Reality for Enhanced Remote

Lecturer Experience. Appl. Sci. 2021, 11, 9022. [CrossRef]

12. Doolani, S.; Owens, L.; Wessels, C.; Makedon, F. vIS: An Immersive Virtual Storytelling System for Vocational Training. Appl. Sci.

2020. 10, 8143. [CrossRef]

13. Pérez, L.; Rodríguez-Jiménez, S.; Rodríguez, N.; Usamentiaga, R.; García, D.F. Digital Twin and Virtual Reality Based Methodology

for Multi-Robot Manufacturing Cell Commissioning. Appl. Sci. 2020. 10, 3633. [CrossRef]

14. Choi, U.; Choi, B. The Effect of Augmented Reality on Consumer Learning for Search and Experience Products in Mobile

Commerce. Cyberpsychol. Behav. Soc. Netw. 2020, 23, 800–805. [CrossRef]

15. Moriuchi, E.; Landers, V.M.; Colton, D.; Hair, N. Engagement with chatbots versus augmented reality interactive technology in

e-commerce. J. Strateg. Mark. 2020, 29, 375–389. [CrossRef]

16. Scholz, J.; Duffy, K. We ARe at home: How augmented reality reshapes mobile marketing and consumer-brand relationships. J.

Retail. Consum. Serv. 2018, 44, 11–23. [CrossRef]

17. Hevner, A.R.; March, S.T.; Park, J.; Ram, S. Design science in information systems research. MIS Q. **2004**, 28 75–105. [CrossRef]

18. Elboudali, A.; Aoussat, A.; Mantelet, F.; Bethomier, J.; Leray, F. A customised virtual reality shopping experience framework

based on consumer behaviour: 3DR3CO. Int. J. Interact. Des. Manuf. (IJIDeM) 2020, 14, 551-563. [CrossRef]

19. Xue, L.; Parker, C.J.; Hart, C.A. How to Engage Fashion Retail with Virtual Reality: A Consumer Perspective. In Augmented

Reality and Virtual Reality; Springer: Berlin/Heidelberg, Germany, 2020; pp. 23-35.

20. Cummings, J.J.; Bailenson, J.N. How Immersive Is Enough? A Meta-Analysis of the Effect of Immersive Technology on User

Presence. Media Psychol. 2015, 19, 272–309. [CrossRef]