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The State of Impulse Purchase Studies: A Bibliometric Review based on CiteSpace V Applications

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Abstract

The study aims to review 459 publications pertaining to impulse purchase in the framework of business and management domain. Source data were collected from Web of Science Core Collection from 2001 to 2021 by title searching and citation expansions. To identify present research development and predicting future research trend in impulse purchase field, the study conducted document co-citation analysis and citation burst analysis. The result suggests the most active research is related to the interplay between internal factors and consumer's impulse purchase, followed by the influence of digital celebrities given the surge of social commerce activities in recent years. It is noted that impulse purchase studies from US dominates the knowledge field, followed by China. Increasing collaboration can be observed among nations and institutions. The study offers insights on current research status and potential research hotspot of impulse purchase studies to researchers of interests.

Keywords: Impulse Purchase, Bibliometric Review, Document Co-Citation Analysis, Cluster, Citespace

Introduction

Impulse buying refers to consumers making instant purchase decision to buy items that are not intended beforehand, often accompanied by a strong and continuous urge (Akram et al., 2019; Wongkitrungrueng et al., 2020). Impulse purchase behavior is often characterized as unintended, unreflective and decided at the moment (Abdelsalam et al., 2020; Ming et al., 2021). Moreover, it is often an outcome of exposure to external and internal stimuli (Vonkeman et al., 2017). Studies have demonstrated that impulse purchase is of great economic significance in business communities. An average consumption of \$5,400 on household items is attributable to impulse buying (O'Brien, 2018). Past years have witnessed the rapid development of impulse purchase studies in related theories and empirical evidence. In order to gain a holistic view on the current status and development trends of

impulse purchase behavior, the need to visualize the knowledge domain is deemed imperative.

On the other hand, knowledge mapping software such as CiteSpace is gaining popularity in detecting research focus and emerging trends in a given research area. CiteSpace can display the development trend of a discipline in a certain period and find out the relationship between information in the literature, more importantly it uses the graph to present the relationship (Chen, 2006). It is advantageous to use knowledge mapping software. Firstly, it helps beginners to establish a comprehensive understanding of a discipline or a specialty. Secondly, it helps to analyze the path of research development. Thirdly, the software can identify the intellectual base and research front of a discipline. Lastly, it helps to predict emerging trend of development.

This study aims to employ CiteSpace to explore studies associated with impulse purchase in the framework of business, quantifying and revealing the thematic pattern and topics that are of high interest to researchers to predict emerging trends in the extant literature. More precisely, we intend to answer the following research questions:

Q1: What are the general trends of impulse purchase studies in the business context?

Q2: Which journal articles have been most cited in the knowledge domain of impulse purchase?

Q3: What are the major clusters of research formed by the existing impulse purchase literatures?

Q4: How have different countries and regions contributed to the studies of impulse purchase?

Bibliographic Records and Research Method

Bibliographic Records

To evaluate the current research development and identify emerging trend, the study employs knowledge mapping software CiteSpace to analyze the studies on impulse purchase from 2001 and 2022. The study followed a standard procedure of using CiteSpace proposed by (Chen, 2006). Initially, we used key terms to identify relevant studies in the source database. In this case, the source of papers was drawn from Web of Science Core Collection to ensure the quality and validation of the study. The study explored title searching methods. The following terms were keyed in the searching area including 'impulse purchase' or 'impulse buying' or 'impulsive purchase' or 'impulsive buying' or 'urge to buy impulsively' or 'unplanned purchase' or 'unplanned buying'. A total of 1,053 publications were identified in the preliminary stage. Then, we further refined database by including research categories that are closely associated with business domain, namely 'Business', 'Management', 'Economics' and 'Business Finance'. Afterwards, a manual screening was conducted by two researchers reviewing the title and abstract of those publications. Impulse purchase studies that are not related to business were excluded. Hence, a quantity of 459 papers were singled out and identified as the database for this study. Afterwards, CiteSpace was adopted to examine the research patterns and future trends via document co-citation analysis and citation burst analysis.

Data Analysis and Discussions

The section presents data analysis and discussions. First, the number of studies published in the past two decades is presented, along with the most fruitful journals on impulse purchase. Secondly, the study examines document co-citation via analyzing top cited articles,

cluster interpretation and citation bursts. Finally, the contribution on impulse purchase of different countries and regions is briefly introduced.

Publication Years and Journals

The number of annual publications on impulse purchase is illustrated in Figure 1. It can be seen that research interest on impulse purchase has grown steadily over the past twenty years. In 2001, only two articles on impulse purchase were published. By 2021, the number of publications has gradually increased to fifty per year. The findings demonstrated a continued growth of research on impulse purchase.

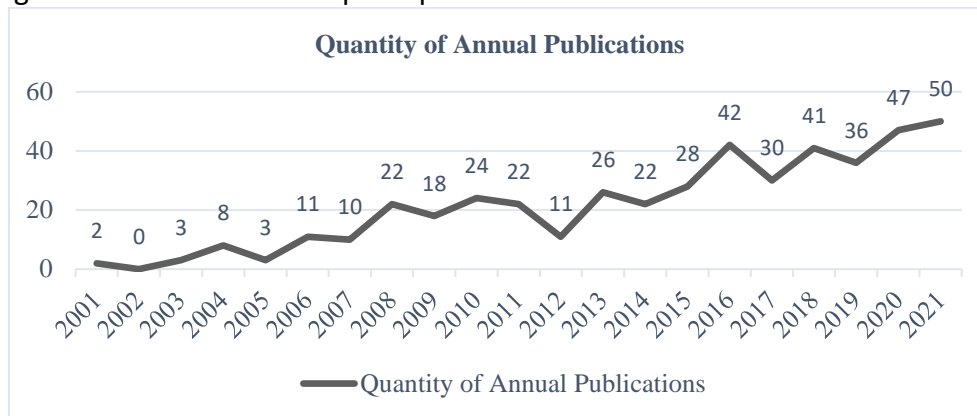


Figure 1: Number of Publications on Impulse Purchase from 2001 to 2021

As to the publishing journals, a total of 459 studies pertaining to impulse purchase were published in twenty-five different journals in the last two decades. Among them, Journal of Retailing and Consumer Services ranked the most popular with a total of thirty-two papers, followed by Journal of Business Research with twenty articles related to impulse purchase. Advances in Consumer research ranked the third with a contribution of fifteen articles. The data can provide an insight for researchers when considering submitting papers on this topic.

Table 1: Top Ten Most Fruitful Journals on Impulse Purchase

Title of Journals	Quantity	Percentage
<i>Journal of Retailing and Consumer Services</i>	32	6.972
<i>Journal of Business Research</i>	20	4.357
<i>Advances in Consumer Research</i>	15	3.268
<i>International Journal of Consumer Studies</i>	13	2.832
<i>International Journal of Retail Distribution Management</i>	13	2.832
<i>Journal of Consumer Behavior</i>	13	2.832
<i>Psychology Marketing</i>	11	2.397
<i>Asia Pacific Journal of Marketing and Logistics</i>	10	2.179
<i>European Journal of Marketing</i>	10	2.179
<i>Internet Research</i>	8	1.743

Document Co-citation Analysis

The study reviews the document co-citation from three aspects. Firstly, five top cited articles are identified and research themes are briefly introduced. Secondly, by characterizing

the most frequently appeared words, documents are divided into thirteen clusters. At last, the citation bursts analysis is presented and implications is discussed.

Top Five Cited Articles

The five top cited articles on impulse purchase have been listed in Table 2.

Table 2: The Tive Top-cited Articles on Impulse Purchase

Cited frequency	Author (year)	Title	Source
25	Chan et al. (2017)	The state of online impulse-buying research: A literature analysis	<i>Information and Management</i>
18	Xiang et al. (2016)	Exploring consumers' impulse buying behavior on social commerce platform: The role of parasocial interaction	<i>International Journal of Information Management</i>
16	Iyer et al. (2020)	Impulse buying: a meta-analytic review	<i>Journal of Academic Marketing Science</i>
14	Vohs & Faber, (2007)	Spent resources: Self-regulatory resource availability affects impulse buying	<i>Journal of Consumer Research</i>
13	Amos et al. (2014)	A meta-analysis of consumer impulse buying	<i>Journal of Retail Consumer Services</i>

The most cited article is by (Chan et al., 2017). Chan et al (2017) reviewed the status of online impulse purchase researches from 2002 to 2014 and proposed a framework explaining antecedents of online impulse purchase. Determinants of impulse purchase include website-related, marketing related and consumer-related stimuli. The study synthesized the affective and cognitive factors that mediate between stimuli and impulse buying behaviors. Xiang et al (2016) investigated the effects of website characteristics and social related factors on consumer's cognitive and affective states, in turn induced impulse buying behavior. Para social interaction was highlighted. It was found that PSI positively affects perceived enjoyment and lead to impulse purchase behavior.

The third most cited article is Iyer et al.'s (2020). The meta-analysis integrated findings from 231 samples and found that traits, motives, consumer resources and marketing stimuli can trigger impulse buying. Consumers' self-control and mood states have been proved to mediate the influencing factors and impulse buying behavior. Vohs & Faber (2007) emphasized the availability of self-regulatory resource in resisting impulse purchase. The experiments suggest that the absence of self-regulatory resources can spur stronger urge to buy and actual spending from consumers. Therefore, self-regulatory resources can be used as a predictor for impulse buying. The fifth most cited work is by (Amos et al., 2014). The study reviewed impulse buying literature and attempt to synthesize the determinants of impulse buying. The findings suggest that dispositional, situational, socio-demographic factors positively affect impulse buying.

In sum, the five articles are essential as they help researchers to gain an understanding in the knowledge field of impulse purchase. It is noted that four out of five most cited articles are reviews, whether it is quantitative review, or systematic review. Reviews can provide briefing on current research hot topics, theories, methodology, samples and statistical analysis methods. Moreover, it pinpoints the potential research gaps and direction for future research. It may suggest that impulse purchase calls for more diverse reviews to better consolidate the findings in the research domain. More importantly, the top two cited articles concentrated on online impulse purchase behavior, it may suggest that the focus of impulse purchase has shifted to online context, given the fast advancement in communication and IT technology.

Cluster Interpretation

CiteSpace can identify and detect temporal research trends via the interpretation of clusters. Cluster is shaped through the imbedded algorithm. Basically the clusters are characterized by most frequently used words in the target articles (C. Chen, 2006). The study identified a total of 13 clusters. Each cluster represents a heated topic on impulse purchase in a given period of time. Figure 2 present the largest six clusters along with the introduction of most popular publications on impulse purchase in each group.

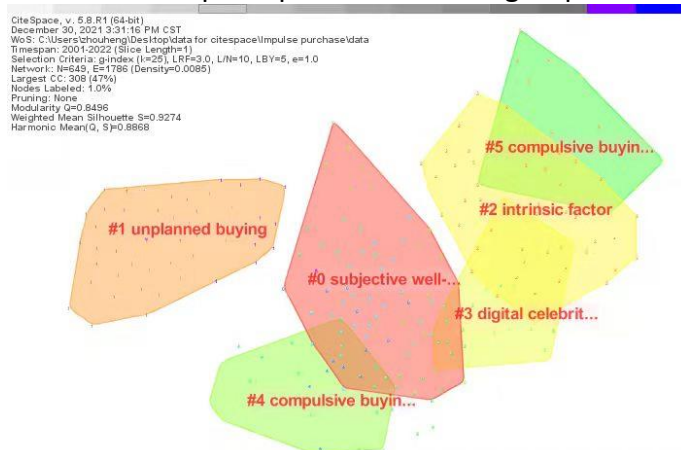


Figure 2: Cluster View of the Impulse Purchase Knowledge Domain

Cluster #0 is the largest in terms of the size. With more attention devoted to the relationship between consumer's emotional wellbeing and impulse consumption. The five highly cited papers in this cluster are briefly introduced. Seinauskiene et al (2016) demonstrated that subjective wellbeing indirectly affect impulse buying tendency through materialism. Personal traits such as shyness and sociability are associated with affective and cognitive impulse buying tendencies (Dhaundiyal & Coughlan, 2016). Ek Styvén et al (2017) investigated how different level of impulse buying tendencies affect consumers in an online context. Moreover, Barros et al (2019) found that store atmosphere is positively related to consumer's positive emotional responses regardless of the culture context. The common theme of these papers is examining the relationship among consumer's emotional state, personal traits and impulse buying behavior.

Cluster #1 is labelled as unplanned purchase. It has received research attention for the longest period of time, the average mean year is 2007. The main theme of this cluster is to study the unplanned behavior rather than impulse buying behavior. However, the discontinuity of the theme suggest that the heat of this research trend has gradually dropped.

Cluster #2 is labelled as intrinsic factors. The top five cited articles in cluster 2 are all published in 2021, including (Kimiagari & Malafe, 2021; Djafarova & Bowes, 2021; Chen et al., 2021; Lavuri, 2021; Chen et al., 2021). Kimiagari & Asadi Malafe (2021) explored the role of cognitive and affective response between internal and external stimuli on online impulse purchase behavior. Djafarova & Bowes (2021) investigated the effectiveness of different marketing strategies on generation Z's impulse purchase behavior in the fashion industry on Instagram in UK. M. Chen et al.(2021) focused on the role of internet celebrities such as identifications, popularity, adoration in building trust and facilitate impulse buying among luxury brands. Lavuri (2021) found that intrinsic factors such as motivational factors, materialism, positive affect significantly impact impulsive online shopping, and the relationship is mediated by trust. Chen et al (2021) revealed that digital celebrities' characteristics can positively affect attachment and Para social interaction, hence induce online impulse purchase behavior.

The top cited paper in Cluster #3 is Zafar et al (2020), concentrating on the role of parasocial interaction and social climate on impulse purchase in the context of social commerce. The rest of the most cited papers somehow overlapped with that of Cluster #2. For example. Kimiagari & Malafe (2021)'s work ranked the third most popular citation in this category. Although cluster #2 and #3 are under different labels, these two groups are closely interrelated. The interrelation may suggest that consumer's internal factors and social interaction in online context are gaining popularity in impulse purchase studies.

Cluster #4 and #5 revolve around compulsive buying behavior. We should note that compulsive buying differs significantly from impulse purchase. Compulsive buying refers to a type of behavioral addiction, In the marketing context, compulsive behavior is explained as the buying behaviors of customers who are excessive, cannot be controlled, and have certain patterns in nature (Guinn & Faber, 1989), while the nature of impulse purchase is irrelevant with addiction. Researchers should distinguish respective terms.

The above analysis shows the major research patterns in the field of impulse purchase. Firstly, the interpretation of clusters indicates that 'digital celebrities' relationship' and 'intrinsic factors' remains the most active and most current research topic in impulse purchase domain. Future studies can consider these two perspectives when examining consumer's impulse buying behavior.

Citation Burst Analysis

Citation burst refers to certain references experience a sudden increase in a given period of time. Burst detecting can help to evaluate the past research hotspots and explore the future research trends. The study extracted citation bursts and the result is presented in Table 3. The table presents top 16 references with the strongest citation bursts from 2007 onward. The bursts are sorted according to the beginning year of burst. Apart from the five top cited articles introduced previously, the details of the rest eleven publications are discussed in the following section.

Table 3: Top Sixteen References with the Strongest Citation Bursts

References	Year	Strength	Begin	End	2001 - 2022
Vohs KD, 2007, J CONSUM RES, V33, P537, DOI 10.1086/510228, DOI	2007	7.92	2009	2012	
Inman JJ, 2009, J MARKETING, V73, P19, DOI 10.1509/jmkg.73.5.19, DOI	2009	4.11	2010	2014	
Bell DR, 2011, J MARKETING, V75, P31, DOI 10.1509/jmkg.75.1.31, DOI	2011	4.09	2013	2016	
Amos C, 2014, J RETAIL CONSUM SERV, V21, P86, DOI 10.1016/j.jretconser.2013.11.004, DOI	2014	5.44	2015	2018	
Badgaiyan AJ, 2014, J RETAIL CONSUM SERV, V21, P537, DOI 10.1016/j.jretconser.2014.04.003, DOI	2014	4.55	2015	2019	
Kukar-Kinney M, 2012, J RETAILING, V88, P63, DOI 10.1016/j.jretai.2011.02.004, DOI	2012	3.64	2015	2017	
Kacen JJ, 2012, J RETAIL CONSUM SERV, V19, P578, DOI 10.1016/j.jretconser.2012.07.003, DOI	2012	4.98	2016	2017	
Floh A, 2013, ELECTRON COMMER R A, V12, P425, DOI 10.1016/j.elerap.2013.06.001, DOI	2013	3.51	2016	2018	
Park EJ, 2012, J BUS RES, V65, P1583, DOI 10.1016/j.jbusres.2011.02.043, DOI	2012	3.31	2016	2017	
Mohan G, 2013, EUR J MARKETING, V47, P1711, DOI 10.1108/EJM-03-2011-0110, DOI	2013	3.31	2016	2017	
Chen JV, 2016, DECIS SUPPORT SYST, V83, P57, DOI 10.1016/j.dss.2015.12.008, DOI	2016	3.72	2017	2019	
Chan TKH, 2017, INFORM MANAGE-AMSTER, V54, P204, DOI 10.1016/j.im.2016.06.001, DOI	2017	6.18	2019	2022	
Xiang L, 2016, INT J INFORM MANAGE, V36, P333, DOI 10.1016/j.ijinfomgt.2015.11.002, DOI	2016	4.44	2019	2022	
Huang LT, 2016, J BUS RES, V69, P2277, DOI 10.1016/j.jbusres.2015.12.042, DOI	2016	3.22	2019	2022	
Iyer GR, 2020, J ACAD MARKET SCI, V48, P384, DOI 10.1007/s11747-019-00670-w, DOI	2020	6.13	2020	2022	
Bellini S, 2017, J RETAIL CONSUM SERV, V36, P164, DOI 10.1016/j.jretconser.2017.02.001, DOI	2017	4.19	2020	2022	

The bursts can be divided into three general phases according to the beginning year. Firstly, the earliest citation burst appeared in 2007, in which Vohs and Faberv (2007) investigated self-regulatory resources' impact on impulse purchase. Inman et al (2009) study enjoys the greatest duration of citation, from 2010 to 2014. The study explored how product types and consumer characteristics affect the engagement of unplanned purchase. Bell et al (2011) investigated the effects of pre-shopping factors, specifically shopper's overall goals, shopping objectives, and marketing exposures on inducing purchase impulsively. The bursts indicates that studies on impulse purchase concentrate on self-regulatory resources, product categories and consumer's internal characteristics.

Next, the number of citation bursts increased to nine in total between 2015 to 2017. The collection of literature examines impulse purchase from internal and external perspectives. On the one hand, internal determinants of impulse purchase include consumer's personality traits (Badgaiyan & Verma, 2014; Chen et al., 2016; Inman et al., 2009; Mohan et al., 2013) On the other hand, external influencing factors consist of product-related factors (Inman et al., 2009; Kacen et al., 2012; Park et al., 2012), marketing-relevant(Bell et al., 2011;. Chen et al., 2016; Kacen et al., 2012; Kukar-Kinney et al., 2012), offline and online store environment (Floh & Madlberger, 2013; Mohan et al., 2013). The growth of bursts indicates that impulse purchase researches have become more diverse and the body of knowledge has been enriched.

Thirdly, the top four most recent bursts include (Chan et al., 2017; Iyer et al., 2020; Xiang et al 2016; Bellini et al., 2017; Huang, 2016). As the first 3 articles has been discussed earlier in this study, we mainly focus on the other two papers. Bellini et al (2017) concluded consumers with a higher pre-shopping preparation is more likely to have lower rate of impulse buying in grocery retailing, and there is a strong and positive relationship between urge to buy impulsively and actual impulse buying behavior. Huang (2016) revealed that social capital, peer communication, urge to buy and vividness can positively trigger impulse buying in social commerce. With the advent of social media, the trend of online impulse purchase seems ongoing.

The citation bursts revealed different research focus along the evolution of impulse purchase studies. Generally, the number of citation bursts has gradually increased over the past two decades, the growth suggest that more and more scholars are becoming interested in the research domain. The research topics are more diverse. Another noticeable trend is

detected that focus of research has shifted to online context, possibly due to the surge of online commercial activities.

Institutions and Countries

The study further analyzed the references in terms of contribution of different institutions and countries. We found that extant literatures on impulse purchase comprise of articles from sixty countries. Figure 3 shows the primary contributing countries and regions in the knowledge domain. The bigger the node is, the greater contribution the country or region has made. Table 4 presents the contributing countries and regions, total number of publications, and beginning year of impulse purchase respectively. The top five countries and regions with the largest number of publications are the United States (132), People's Republic of China (40), England (28), India (24), China Taiwan (22). The top five contributing institutions are Great Lakes Institution Management (6), City University of Hongkong (6), University of Minnesota (5), New York University (5), University of Pittsburgh (5).

Table 4: Contribution of Top Five Country/Region on Impulse Purchase

No	Quantity	Country/Region	Year
1	132	USA	2001
2	40	People's Republic of China	2007
3	28	England	2004
4	24	India	2008
5	22	China Taiwan	2006

The total number of articles published by scholars in the United States and China ranks relatively high, which shows that scholars in the two countries have gradually increased their contributions in the field of impulse buying research. In Figure 3, there are connections between several high-volume countries and related institutions. It shows that international cooperation in impulse buying research has been carried out to a certain extent and gradually strengthened. The cooperative network map is helpful for us to gain insights into the social relations of authors, institutions, countries or regions in the research field. It is beneficial for researchers to track and keep pace with international research hotspots and explore international collaborative research opportunities.



Figure 3: Contribution Network on Impulse Purchase based on Country or Region

Conclusions and Limitations

The study aims to examine the extant literature on impulse purchase in a visualized manner in order to reveal current research patterns and future research trends. Twenty-five academic journals have published 459 pieces of articles pertaining to impulse purchase over the past two decades. There is a steady growth in terms of quantity of impulse purchase studies. The rise in number demonstrated increasing interest of the research domain.

It was found that the most cited journal article focuses on the review of online impulse purchase, followed by another study dedicated to impulse purchase behavior in social commerce context. Three out of five top cited articles are systematic review or meta-analysis of impulse purchase, which indicates the growing interests in the field. It is noted that despite Chan et al. (2016) consolidated the antecedents of online impulse purchase, the work mainly investigated literatures prior to the year of 2014. With the fast development of internet and communication technology, more situational factors should be taken into consideration in the newly emerged context such as social commerce, or live streaming commerce- a sub of social commerce. In addition, among the thirteen clusters formed by existing literatures, the most recent and larger clusters focus on intrinsic factors and digital relationship studies, it is consistent with the top cited articles that future impulse purchase study will concentrate on online impulse purchase, precisely, impulse purchase in the social commerce context or even more novel context will be of primary research interests. Therefore, one of the emerging trends of impulse purchase study will be antecedents in new context such as social commerce.

The study identified sixteen citation bursts from 2007 onward. The citation burst analysis reveals past research hotspot in a given period of time. It witnessed the evolution and development of impulse purchase studies. The research focuses have shifted from self-regulatory resources, product type to individual's characteristics to more situation-related factors. It can be inferred that researches in physical stores have been extensively studied, however, the constantly changing environment has brought more challenges. Therefore, another noticeable trend would be examining whether prior influencing factors are still effective in various new scenarios.

As to contribution among countries and regions, US is the dominating contributors of impulse buying studies, followed closely China and England. We can infer that countries with higher level of economic development pay more attention to impulse purchase studies. After all, impulse purchase is closely associated with disposable income. Meanwhile, we can see increasing collaborations between nations and regions, as cultural related factors yield significant influence over consumer's purchase behaviors. In the digital world, the proliferation of cross boarder business calls for more studies on impulse purchase behavior from different cultural perspectives. Collaborations should be strengthened specially among leading contributors.

In sum, the study provides a bibliometric review on impulse purchase literatures in last two decades. The findings are beneficial to researchers who share interests in consumer's impulse purchase studies by summarizing the past research patterns and predicting the future research trends.

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