

A SYSTEMATIC REVIEW OF FLOW THEORY: THE STATE OF THE ART IN MARKETING¹



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ABSTRACT

The aim of this study, which uses a systematic literature review method that provides the opportunity to look into the future by following the traces of past studies, is to determine how Flow Theory, which was developed in the field of psychology but forms the basis for research in different disciplines, is used in the field of marketing and consumer behaviour. The obtained findings will be useful both in terms of showing potential research areas in the literature for academic research and providing insight that can guide practitioners in their managerial decisions. In this direction, the articles derived from the search made in the WoS and Scopus databases using the PRISMA method were examined and evaluated within the scope of three basic research questions and additional descriptive classifications.

Keywords: Flow theory, systematic literature review, PRISMA method

JEL Codes: M10, M30, M31

Scope: Business administration

Type: Review

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¹ It has been declared that the relevant study complies with the ethical rules.

AKIŞ TEORİSİ ÜZERİNE SİSTEMATİK BİR LİTERATÜR TARAMASI: PAZARLAMA ALANINDAKİ GÜNCEL DURUM



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ÖZ | Geçmiş çalışmaların izlerini takip ederek geleceğe bakabilme imkânı sunan sistematik literatür taraması yöntemi kullanılan bu çalışmanın amacı, psikoloji alanında geliştirilen ancak farklı disiplinlerde yapılan araştırmalara temel oluşturan Akış Teorisi'nin pazarlama ve tüketici davranışı alanındaki çalışmalarında nasıl kullanıldığının belirlenmesidir. Böylece, hem akademik araştırmalar için literatürdeki potansiyel araştırma alanlarını göstermesi hem de uygulayıcılar için yönetsel kararlarında yol gösterici olabilecek içgörü sağlaması açısından elde edilecek bulguların faydalı olacağı düşünülmektedir. Bu doğrultuda, PRISMA metodu kullanılarak WoS ve Scopus veri tabanlarında yapılan taramadan elde edilen makaleler, üç temel araştırma sorusu ve ilave tanımlayıcı sınıflandırmalar kapsamında incelenmiştir ve değerlendirilmiştir.

Anahtar Kelimeler: Akış teorisi, sistematik literatür taraması, PRISMA metodu

JEL Kodları: M10, M30, M31

Alan: İşletme

Türü: Derleme

1. INTRODUCTION

An essential step in increasing the interest and loyalty of consumers towards any product or service experience is to make this unique and enjoyable for them. The more concentrated, controlled and delighted the consumers are during this experience, the more "flow" they will live and they will want to re-experience it. The flow phase that will result in various behaviours, such as satisfaction, loyalty, repurchase intention and recommendation is very important for the success of marketing efforts. These results also constitute an important focus of academic studies. Theories that allow the analysis and in-depth examination of various subjects are also important tools used in this direction (Bölen, Calisir, & Özen, 2021). There are many studies examining behavioural theories from this point of view. Flow theory, borrowed from the discipline of psychology and adapted to marketing and consumer behaviour studies, is one of the important theories used to make sense of consumer experience. Flow experience, which is expressed as immersing oneself in an action in order to enjoy the experience itself – even in the absence of any reward, has been used in researches from many different disciplines.

Progress in any discipline can only be possible by compiling the knowledge in that field, presenting the current situation in detail, revealing conflicting views, identifying research gaps and guiding future studies from these ideas. In this direction, systematic literature review studies are important in terms of revealing the knowledge in the discipline. In the absence of both comprehensive and in-depth knowledge of the field, it is difficult to come up with new ideas. For this reason, systematic literature reviews that go beyond summarizing what has already been written and give information about the accumulated knowledge on a particular subject are very important.

In this context, the aim of the study is to perform a systematic literature review to understand how flow theory is used in the field of marketing. One of the systematic literature review approaches, which have types such as theme-based reviews, framework-based reviews, bibliometric analysis and meta-analysis, is the systematic review of the use of a determined theory in a specific field, called theory-based reviews (Paul & Criado, 2020). Theory-based reviews provide useful information for both senior and new researchers, and also assist researchers in identifying gaps in the literature more easily by compiling and interpreting existing research findings. Systematic literature reviews, which aim to provide insight beyond simply compiling the articles on the researched subject, are therefore meaningful and necessary studies.

1.1. Flow Theory

Flow theory, rooted in the discipline of psychology, has been used to understand the influences at the root of experiences in many different fields. The question that Csikszentmihalyi (1975, 1977), who developed the theory, wanted to answer was to understand why people who do not value material rewards and perform an action only to have performed the action itself (exhibiting autotelic behaviour), thus making daily life more meaningful. In the current system, approaches based on reward and punishment have been developed in order to ensure that individuals behave in the way the society desires. This understanding assures that the sole purpose of performing the work is to achieve the reward, the work done is not (cannot be) perceived as fun, and as a result, work and fun are separated from each other. In his book published in 1977, Csikszentmihalyi described autotelic activities and from the interviews that he made with professionals working in different fields, such as chess players, rock climbers, dancers and surgeons, he noticed that a feeling that he named as "optimal experience" was expressed by the participants. The author has defined this holistic experience as "flow".

As a result of interviews with people from different branches of art and sports, the flow theory was constructed for these fields and later on, started to be studied on many different subjects over time. The concept of flow, which expresses the state of being free of all emotions and thoughts of the person and concentrating only on the work he is doing, is defined as "the holistic sensation that people feel when they act with total involvement" (Csikszentmihalyi, 1977). During this optimal experience, people are in a positive mood and nothing else matters because they are goal-oriented. Different researchers conceptualized the flow experience using different structures (Obadă, 2013). The antecedents and consequences of the flow experience or the situations experienced as a result of the flow state are used to define the concept. Based on the results of these studies, which tried to contribute to the development of the theory, Csikszentmihalyi (1997) provided the most comprehensive definition and listed the main features of the flow experience. The features expressed as conditions or prerequisites for the flow experience to occur are listed as follows:

- Having clear goals
- Merging with instant feedback
- Balance between challenge and skills

The other six dimensions, which are named as the dimensions or characteristics of flow and which express what the individual feels during the flow experience, are as follows:

- Sense of control

- Full concentration
- Temporary loss of self-consciousness
- Time distortion
- Merging of action and awareness
- Autotelic experiences (where the purpose of the experience is the experience itself)

If the skills of the person and the challenge of the task to be fulfilled are equal to each other, the person will fully concentrate on his work and will experience the flow (Figure 1). This experience will also make him feel that he has control over his behaviour (Çakmak et al., 2015). In order to experience flow, one must also have intrinsic motivation. Intrinsic motivation, defined by Csikszentmihalyi (1997b) as an autotelic experience, means performing any action only for the action itself, and is an important feature of flow experience. The extrinsic motivation, on the other hand, that leads to a behaviour to achieve any goal or reward affects the flow experience negatively as a source of anxiety.

Flow theory has been used in research conducted in many different disciplines such as positive psychology, sports psychology, educational psychology, organizational psychology, technology addiction, organizational effectiveness, motivation, and job performance (Çakmak et al., 2015; Perttula, Kiili, Lindstedt & Tuomi, 2017). Initial studies which adapted the theory to online environments revealed that the optimal experience in a computer-mediated environment can contribute to the success of online marketing (Hoffman & Novak, 1996). Due to the interactive nature of the Internet, consumers will be able to experience flow during their online browsing, which is very important for the success of online marketing initiatives.

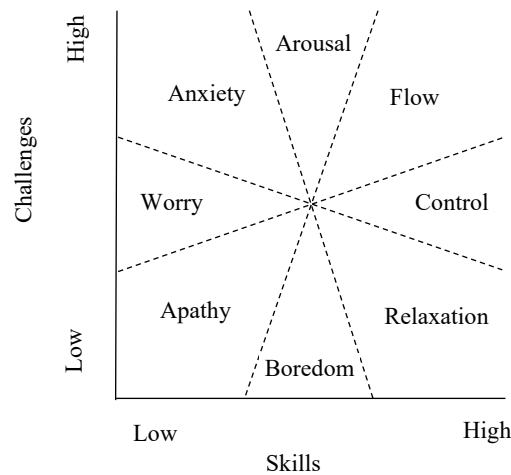


Figure 1: The Levels of the Relationship Between the Skills of the Individual and the Challenges of the Task

Kaynak: (Csikszentmihalyi, 1997a)

When it comes to the field of marketing and consumer behaviour, it is seen that research on or using flow theory is limited. Therefore, reviewing and scanning the studies on the basis of criteria such as the subjects of the studies, the methods and the variables used will be useful for researchers who consider employing flow theory in their research. Considering the increase in online and social media studies (Obadã, 2013; Ozkara, Ozmen & Kim, 2017), it is thought that a comprehensive evaluation of the theory will contribute to marketing literature.

Within the light of the above-explained information and evaluation, the purpose of the current study is to have a detailed information about the use of the flow theory and to guide its use in future research in the field of marketing and consumer behaviour by using the findings of the systematic literature review that will cover marketing and consumer behaviour articles in WoS and SCOPUS databases, which are accepted as the most important and reliable resources of literature review (Pagan-Castaño, Ballester-Miquel, Sánchez-García & Guijarro-García, 2022).

In this direction, the steps followed for systematic literature review are presented in the methodology section; general characteristics of the studies included in the review and the literature review findings are presented in findings

section; and finally, the current situation regarding the general use of flow theory in the field of marketing and consumer behaviour has been evaluated and potential research gaps were tried to be determined in the conclusion part.

2. METHODOLOGY

A systematic literature review was conducted to reveal the use of flow theory in academic studies in the field of marketing and consumer behaviour. Systematic literature review is useful in terms of interpreting the findings of the current studies and revealing detailed information about the researches and showing the gaps in the literature on the researched subject.

The most important features of a systematic literature review is its reproducibility, transparency, objectivity, comprehensiveness and meticulousness (Tian, Deng, Zhang & Salmador, 2018; Williams, Clark, Clark & Raffo, 2021). Such studies have the potential to form the basis for future research (Paul & Criado, 2020).

In the current literature review, PRISMA (Preferred Reporting Items for Systematic Reviews and Meta -Analyses) method that was developed by Moher et al. (2010) for studies in the field of health was used. Thanks to a 27-item checklist and a four-stage flowchart, this method aims to improve the design and reporting of literature reviews. In the current review, a systematic search was carried out by following the flow diagram of the PRISMA method (Figure 2).

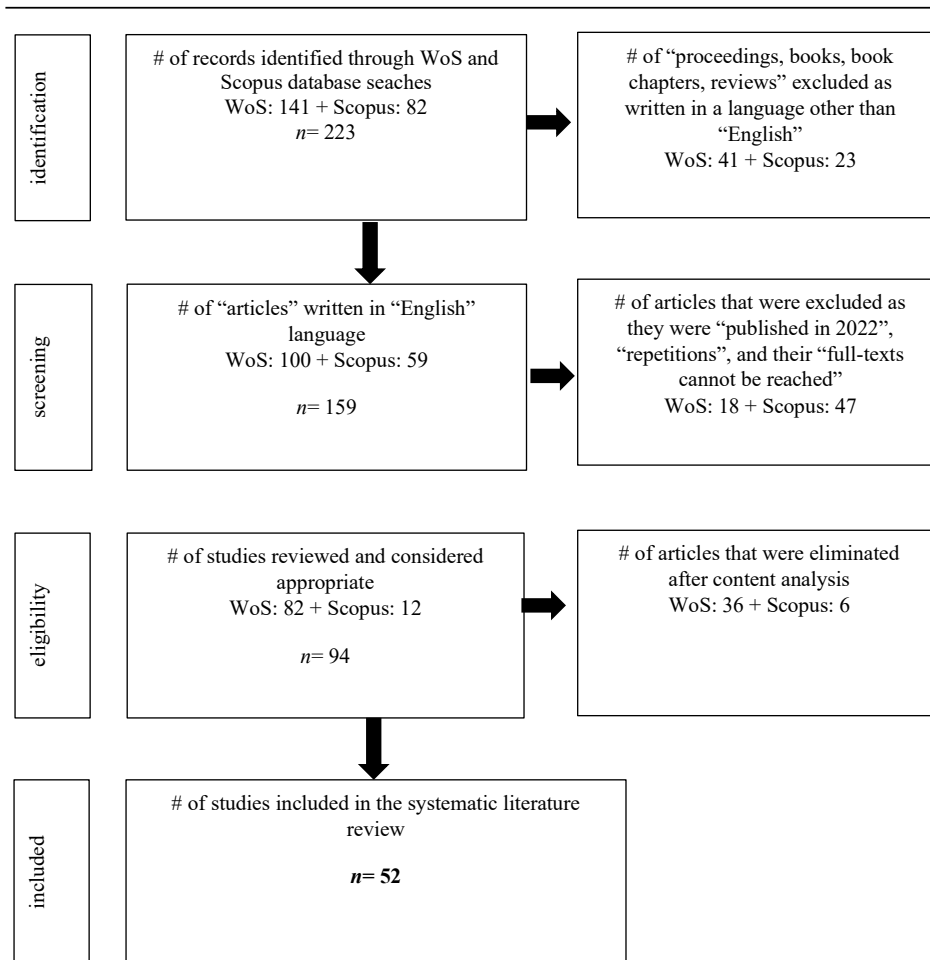


Figure 2: PRISMA Diagram for Reviewing Flow Theory

2.1. Research Questions

Systematic literature reviews are constructed within the framework of specific research questions that are intended to be answered. For this reason, research questions (RQ) were first determined.

RQ1: On which topics are the studies using flow theory in marketing and consumer behavior?

RQ2: What are the theoretical frameworks used in conjunction with flow theory in marketing and consumer behavior studies?

RQ3: Is flow theory used with a uni- or multi-dimensional structure, and what dimensions are included in studies where multi-dimensional structure is used?

In addition to these research questions, various descriptive information such as the method used, research area and sample type were also collected while reviewing the studies.

2.2. Reviewing Strategy

The review of the literature was conducted through the data bases of Web of Science (WoS) and Scopus as they were acclaimed as the most comprehensive databases in the social sciences, especially in business studies (Le, Phan Tan & Hoang, 2022; Loureiro, Romero & Bilro, 2020; Mariani, Al-Sultan & De Massis, 2021). In Web of Science, the word combinations of “flow theory” AND “marketing”, “flow theory” AND “consumer behav*”, and “flow theory” AND “customer behav*” were searched in "topic". Truncated usage was preferred to access the studies written in both British and American English (e.g. consumer behaviour or consumer behavior). Similarly, in the search made in the Scopus database, “flow theory” AND “marketing”, “flow theory” AND “consumer behav*”, and “flow theory” AND “customer behav*” were searched in the title “title, abstract, keywords”. While searching for the word "behavior", truncated usage was again preferred in order to prevent any research from being out of scope.

2.3. Inclusion and Exclusion Criteria

After determining the search words, criteria are defined to decide which studies will be included in the literature review and which ones will be excluded. The studies that constitute the final content of the literature review were determined in line with these criteria. The inclusion criteria used in the review were formed as (i) articles published in scientific, peer-reviewed journals, (ii) works written in English language. The exclusion criteria of the studies were determined as (i) studies that are not related to or based on flow theory, (ii) conference proceedings, books, book chapters and review articles, (iii) works written in a language other than English, and (iv) repetitions. A time limit was not set as the starting date for the works to be included in the study, but the articles published in 2022, when the study was conducted, were excluded as the year was not yet over.

The primary search in the databases resulted in total of 223 articles (141 in WoS, and 82 in Scopus). The elimination in the identification phase ended in 159 articles, where 64 were eliminated as they were not written in English or as they were books, book reviews, conference proceedings or review. In the screening phase, overlapping studies, the works that cannot be accessed and the

works that were published in 2022 were eliminated, which resulted in a list of 94 articles. Thus, the total number of works subject to literature review was 94.

In the next stage, a classification framework was created to code these 94 studies, and in this context, the subject of study, uni- / multi-dimensional use of flow theory, sample type and number, research method, measurement method used and analysis, theories used together with flow theory, antecedents and consequences of flow were coded.

2.4. Generating the Final List

At this stage, the articles obtained from the WoS and Scopus databases were evaluated in terms of content and the final review list was created. Accordingly, one of the studies on the list (Gangadharbatla & Valafar, 2017) was excluded because it could not be accessed through existing databases or other databases. The remaining 93 articles were examined in line with the determined headings. The main criterion while making this examination is that the flow theory should be the main or one of the main theories in the research. When analysed in this vein, it was observed that some of the studies in the list examined the "cash flow theory" in finance but were included in the review pool as it included the statement of flow theory (e.g. Dunn et al., 2011; Eldomiaty & Ismail, 2009; Smith & Pennathur, 2019); some of them were related to the topics of informatics (Li, Ji, Gan, Qu & Ran, 2021; Wani, Raghavan, Abraham & Kleist, 2017) or mechanics (Ozdemir, Souli, & Fahjan, 2010); and some of them only mentioned flow theory within the text but did not use it as the main or one of the main theories of the study (e.g. Huang et al., 2019; Rodrigues et al., 2016; Tran & Chang, 2022). As a result, 42 articles were not included in the review pool as they were not suitable for the main purposes of the research. In this direction, the research questions of the literature review were tried to be answered through 52 works.

3. RESULTS

52 articles that were included in the analysis according to the headings in the created Excel table were examined one by one. It was observed that 3 of these articles were conceptual studies not containing any research questions and empirical findings (Dlodlo, 2014; Finneran & Zhang, 2003; Woszczyński, Roth & Segars, 2002). They were not included in further reviews judging that they could not be used to answer the research questions. The remaining 49 articles were used to answer the research questions. The final list of articles is presented in the Appendix together with the search criteria.

The primary aim of the study is to reveal in which subjects the flow theory is used in studies in the field of marketing and consumer behaviour, which

theories it is used together with, and is uni- or multi-dimensional structure preferred. While seeking answers to these questions, information was also collected about the research method, the analysis used, sample type, the data collection method used, the antecedents and consequences of the flow variable.

Considering the studies in terms of descriptive findings, it is clear that the number of studies has been increasing since 2002, which is the date of the first study obtained from databases in line with search words was made (Figure 3). Looking at the distribution of 49 articles, it is seen that more than half of the articles have been published since 2018. It is possible to say that the number of studies in which flow theory answers research questions has started to increase as of this date, but the number of studies on flow theory is still low, given the prevalence of the use of theory in the field of marketing.

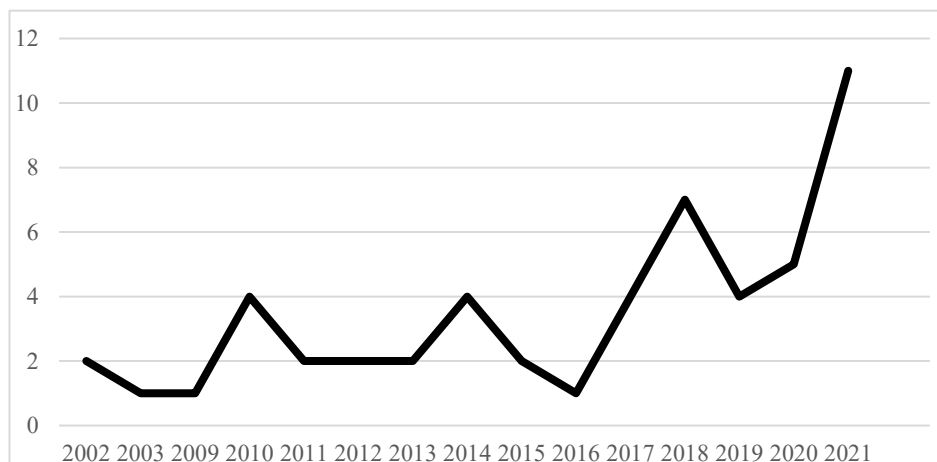


Figure 3: Distribution of Articles by Year of Publication

When the research methods of the studies are evaluated, it is seen that the majority of them are quantitative studies (46 studies), 1 study was carried out using qualitative method and 2 studies employed mixed methods approach (Table 1). The survey method was used in the vast majority of quantitative studies, where online surveys were prevalent. The use of qualitative and mixed methods approaches in very few studies is seen as a reflection of the dominance of quantitative research trend in the field of marketing (Hanson & Grimmer, 2007; Valtakoski, 2019). In the hypothesis testing of quantitative studies, structural equation modelling (SEM) (36 studies), regression (4 studies), factor analysis (3 studies), ANOVA (2 studies) and process analysis (1 study) were used.

Table 1: Distribution of Research Method

Research approach	Research method	Number of articles
Quantitative approach	Survey – Face to face:	15
	Online:	25
	Experiment	6
Qualitative approach	Case study	one
Mixed methods approach	Focus group + survey	one
	Interview + survey	one

When the samples of these studies are examined, it is seen that the majority of them are defined generally as "consumers" (N=16). Consumers who shop online, shoppers from an online retail store, or users who play any game are also gathered under this heading. In 13 studies, the sample was defined as "participants". It was seen that the student sample was included in 10 studies. In the rest of the studies, tourists (5 studies) and social media users (4 studies) constituted the samples. One study was carried out with the case study method using a qualitative approach and examined a company.

The keywords determined by the authors in the studies examined were also compiled using the word cloud generation program (Figure 4). Among the most frequently used keywords are "social", "consumer", "behaviour", "shopping", "online", "experience" and "intention". It is possible to see the increasing use of flow theory in studies related to online and social media from the words where the generator is concentrated.



Figure 4: Word Cloud Generated from Keywords of the Studies Reviewed

When the reviewed articles which were limited to the use of flow theory in the field of marketing were evaluated in terms of their effects, it was seen that

the most effective and most cited study was that of Koufaris (2002). This study is also the most cited work in the WoS database when flow theory is searched without being limited to any discipline (times cited = 1479). The research examines online shopping behaviour of consumers at the intersection of information systems, marketing and psychology disciplines, and investigates how consumers' emotional and cognitive reactions to the online store are reflected in their behaviours. Since it was one of the first studies to use the flow theory in the period when online shopping started to become popular, it was cited in all researches built within this theoretical framework. The study that follows this article in terms of effectiveness is the research conducted by Lu, Zhou and Wang (2009) that examines the attitudes of Chinese users towards applications that enable instant messaging over the Internet, with 313 citations. Another study, which has been influential in studies on flow theory and has received over 100 citations, is the study conducted by Bilgihan (2016) in which determinants of online purchasing loyalty of Y generation was investigated (199 citations). Other influential research within the framework of flow theory includes the study by Gao, Waechter and Bai (2015) exploring mobile buying behaviour (171 citations); the study by Kim and Han (2014) examining how smartphone advertising is reflected in consumers' purchasing behaviour (137 citations); the study by Finneran and Zhang (2003), which investigates the view that structures in flow theory should be reconceptualized in accordance with the context used (136 citations) and the study by Huang et al. (2013) which investigates the effect of virtual world experience on tourism marketing (128 citations).

3.1. Study Topics (research question 1)

In answering the first research question of the systematic literature review, it is seen that a significant part of the studies in which flow theory is used are related to e-retailing (N=15), information technologies (N=12) and tourism (N=10). In a small number of studies within the scope of the reviewed articles, flow theory was used in studies in the fields of gaming (N=5), social media (N=4), retailing (N=2) and education (N=1). Studies on e-retailing were conducted on issues such as the effect of e-commerce on increasing the word-of-mouth communication of consumers through social media (Herrando, Jimenez-Martinez & Martin De Hoyos, 2018); the effect of e-commerce on consumers' repurchase intentions during COVID-19 period (Kazancoglu & Demir, 2021); how social presence affects consumers' impulsive buying behaviour (Ming, Jianqiu, Bilal, Akram & Fan, 2021); and the effect of flow status on consumers' mobile purchasing behaviour (Chen, Hsu & Lu, 2018). In studies on information technology, adoption of 5G technology (Akbari, Rezvani, Shahriari, Zúñiga & Pouladian, 2020); the effect of flow size, value perception and ease of use on the

intention to continue using mobile instant messaging services (Dhir, Kaur & Rajala, 2020); measuring flow in the virtual world (Nah, Eschenbrenner, DeWester & Park, 2012) and smartphone addiction in adolescents (Fauzi, Harun, Martin, Paiman & Hussin, 2021) were discussed. Another area where flow theory has been used extensively by associating it with marketing has been tourism. Studies on this subject are mostly related to the effect of digital experiences on various behavioural intentions of tourists (An, Choi & Lee, 2021; Bilgihan, Nusair, Okumus & Cobanoglu, 2015; Huang et al., 2013; B. Kim, Yoo & Yang, 2020).

Research in the field of gaming, where fewer studies have been conducted, consists of topics such as the use of games in leadership (Buzady, 2017), measuring the flow experience while playing games (Lavoie & Main, 2019) and the contribution of games to the self-brand connections (Berger, Schlager, Sprott & Herrmann, 2018). In social media studies, subjects such as measuring the flow experience of people over a certain age during the use of social media in online shopping (Xu, Wang, Khan & Zhao, 2021), the role of flow in a social media research (Cuevas, Lyu & Lim, 2021), how social commerce affects social media engagement (Algharabat & Rana, 2021) were researched. While studies on retailing are about measuring flow experience in physical stores (Wang & Hsiao, 2012) and measuring flow in the process of participating in entertainment and shopping activities in shopping centres (Lotz, Eastlick, Mishra & Shim, 2010); the only study on education is related to the effect of flow that is experienced by the game on the success of students in accounting and marketing education (Silva, Rodrigues & Leal, 2019).

3.2. Theories Used (research question 2)

The second research question of the systematic literature review was composed to determine which theories are used together with the flow theory. In 25 of the 49 studies reviewed, another theory was used along with the flow theory to establish the conceptual framework of the research, where Technology Acceptance Model (TAM) was the most widely used one. The model was developed to explain the adoption process of a technological innovation (Davis, 1989) and tries to explain the behaviour of users and the factors that affect their adoption. Besides the studies in which only TAM was used with flow theory (Akbari et al., 2020; Chen et al., 2018; Han, An, Han & Lee, 2020; Koufaris, 2002; Xu et al., 2021); theory of planned behaviour (Lu et al., 2009), regulatory fit theory (Hsu, Wu & Chen, 2013) and hedonic theory (Huang et al., 2013) were also used together with TAM.

Another theory frequently used together with the flow theory is the Stimulus-Organism-Response Model that was developed in the field of

environmental psychology (Mehrabian & Russell, 1974). In studies where the model - examining the responses of individuals to environmental stimuli - is used together with flow theory, issues such as the effect of virtual reality on the flow experience of the organism and the behavioural outputs of this experience (An et al., 2021); the effect of flow experience of the organism on behavioural and emotional loyalty when social commerce act as stimuli (Herrando, Jimenez-Martinez & Jose Martin-De Hoyos, 2019); how the flow experience of omnichannel consumers during their shopping experience is reflected in their word-of-mouth communication behaviours (Rodríguez-Torrico, San José Cabezudo, San-Martín & Trabold Apadula, 2021); how social presence impacts the streaming experience, which in turn impacts impulsive buying and perceptions of personal power (Ming et al., 2021); and how socializing in social media or on the internet reflects on the flow experience and how this experience is reflected on the word-of-mouth communication behaviours of users (Herrando et al., 2018) were studied.

Theory of Planned Behaviour which was developed by Fishbein and Ajzen (1975) proposes that the most important determinant of a behaviour is one's intention to perform that behaviour, and that one's intention is affected by the attitude towards this behaviour, subjective norms, and perceived behavioural control. And this theory was used together with flow theory in 3 studies. In addition to determining the effects of searching for information with keywords in advertisements on purchasing behaviour (Wu, Lin & Lin, 2011), flow theory was used together with the Theory of Consumption (Dhir et al., 2020) to determine the reasons for using mobile instant messaging services; and with the Technology Acceptance Model (Lu et al., 2009) to explain the process of Chinese users adopting instant messaging services.

In the systematic literature review, it was seen that flow theory was used together with the Unified Theory of Acceptance and Use of Technology (UTAUT), which is a comprehensive technology acceptance model developed for the adoption of information technologies. In these studies, the effect of gender on the attitude towards shopping through live-streaming apps during the pandemic period (Zhao & Bacao, 2021) and the process of consumer adoption of tourism products and services using mobile devices (Tan & Ooi, 2018) were investigated. The Information System Success Model was used together with the flow theory in two studies, and the intention to continue purchasing using mobile devices (Gao et al., 2015) and the intention to continue membership in virtual travel communities (Gao, Bai & Park, 2017) were reviewed.

In addition to these theories, Elaboration Likelihood Model (Brannon Barhorst, McLean, Shah & Mack, 2021), Virtual Liminoid Theory (Huang &

Liao, 2017), Leadership Theory (Buzady, 2017), Uses and Gratification Approach (Huang, Hsieh & Wu, 2014) and Social Support Theory (Algharabat & Rana, 2021) have also been used in research on different subjects, together with Flow Theory.

3.3. Dimensions of Flow Theory (research question 3)

The third main research question of the systematic literature review is about whether the flow theory is used in a uni- or multi-dimensional structure and which dimensions are used in cases where it is used as a multi-dimensional construct. Flow theory is used in a uni- or multi-dimensional way in different researches and contexts, and there is even a disagreement among researchers on this issue (Bölen et al., 2021; Lavoie & Main, 2019). This situation was also observed in the current literature review. While the theory was used multi-dimensionally in 27 of 49 empirical articles that were included in the systematic literature review, it was used uni-dimensionally in 22 studies (Table 2). In the multi-dimensional structure, enjoyment was the dimension of flow experience that was used the most, and it was followed by concentration.

Table 2: Dimensions Used in Flow Theory and the Number of Studies in Which It is Used

Flow experience				
<i>Uni-dimensional: 22 studies</i>	<i>Multi-dimensional: 27 studies</i>			
	<i>Name of dimension</i>	<i>Number of studies</i>	<i>Name of dimension</i>	<i>Number of studies</i>
	Fun	17	Challenge	6
	Concentration	16	Interactivity	5
	Control	8	Curiosity	3
	Time distortion	7	Skill	3
	Telepresence	6		

Note: Only dimensions used more than 3 times are included in the table.

In addition to the dimensions listed in Table 2; playfulness, goal clarity and attention focus were used twice; learning, feedback, arousal, escapism, autonomy, merging, body ownership, explanatory behaviour, usability, trust, and aesthetics were used once.

These variables, which constitute the dimensions of flow theory, have also been considered as the antecedents of flow experience in some studies (B. Kim et al., 2020; Nah et al., 2012; Ozkara et al., 2017). It is seen that the disagreement about the uni- or multi-dimensional use of the theory also exists about what the dimensions are. Variables used as the consequences of flow experience in reviewed studies were also examined. Among these variables, behavioural intention was the most frequently used (13 studies). This variable is

followed by satisfaction (12 studies), purchase intention (9 studies), intention to play (8 studies), attitude (6 studies), word of mouth (6 studies), loyalty (5 studies), and brand equity (4 studies). In addition to these frequently used variables, variables such as brand loyalty, impulsive buying, involvement, learning, perceived value, perceived ease of use, perceived ease, trust, usefulness, social sharing, were also used as the consequence of flow experience, though less frequently.

4. CONCLUSION

In order to look forward in academic research, it is necessary to know what has been done in the past, because knowledge and science are built on previous studies. In order to move the boundaries further, we must know where they are. Systematic literature reviews contribute to both scientific knowledge and the process of structuring the theoretical and methodological framework of future studies by summarizing previous studies, testing hypotheses, and evaluating studies, and also, provide information on gaps that can be studied. It provides insights that can guide not only academic studies but also practitioners in their managerial decisions. Therefore, systematic reviews such as theory-based, theme-based, bibliometric or meta-analysis have an important stance in academic research.

The current systematic literature review, which was conducted to give an idea about the use of flow theory in the field of marketing and consumer behaviour and the possible gaps in the field, is also aimed to provide information for both academic researchers and practitioners. In addition to the main research questions of the literature review, descriptive information about the studies were also compiled. The first of this information, the findings of which are given in detail in the conclusion section, is the number of studies on the subject. It is possible to say that the number of studies using flow theory has increased thanks to the dominance of digital transformation issues in marketing and consumer behaviour studies, as it is reflected in all walks of life as technological developments. As of the date of the current study, 8 articles were published in 2022 that met the inclusion criteria of the systematic literature review. Considering that the total number of studies in 2021 is 10, it is possible to say that the number of studies will increase even more by the end of 2022. Although the number of studies is increasing, it is possible to use it in studies not only related to online environments, but also measuring the reflection of the flow experience and behaviour of consumers in different fields, and it has research potential in this respect.

When the studies are examined in terms of research methods used, dominance of quantitative methods is obvious. While the mixed methods were used in two studies, qualitative methods were benefitted from in only one study. Three studies included in the review were conceptual discussions. Considering the use of quantitative, qualitative or mixed methods which is chosen depending on the nature of the research question, the higher number of quantitative methods is similar to the results of the reviews made on different topics of marketing (Valtakoski, 2019; Yoo, Lee, & Bai, 2011). However, qualitative research is very important for in-depth understanding of consumers and their behaviours, and can provide much more productive and thorough findings when used together with quantitative methods. Hence, future studies using qualitative and mixed methods more will provide a holistic perception of the phenomenon and novel explanations for the theory. Moreover, the dominance of survey method in obtaining relevant data indicates the lack of other techniques that would result in more fruitful insights, such as interviews, experiments and observations. Also, recent technological tools that are used to understand behavioural intentions of individuals will be used in further studies to complement prevailing methods. Future researchers on flow theory can also make a longitudinal evaluation of the flow experience, which would draw a more detailed picture of how the experience affects individual behaviour.

Another descriptive finding of the systematic literature review is related to the sample used. The attention-grabbing finding in this regard is the small number of student samples used. It has previously been a topic of debate for a long time in both marketing and other social sciences researches and was argued that it should never be accepted (Burnett & Dune, 1986; Jones & Sonner, 2001); however, recent research findings suggested that though student samples do not invalidate the research, the findings should be interpreted with caution (Ashraf & Merunka, 2017; Flere & Lavrič, 2008). It is seen that student samples have been used in a limited way in marketing and consumer behaviour research on the flow experience. Considering the criticisms made on this subject and the concerns about the generalizability of the findings, it is possible to say that limiting the use of student samples is a good choice, unless they are the direct subject of the researched issue.

Another descriptive finding of the review is the word cloud obtained from the keywords of the studies included in the study. The word cloud generator, which is expected to give information about the subjects of the studies, displayed that digitalization concepts such as "online", "technology", "virtual", "website" were the most widely used keywords in flow research. On the consumer side, the keywords "behaviour" and "intention" were used in more studies. It is thought

that this result is due to the fact that the flow theory is more associated with online environments and that the digital transformation reinforces this perspective. However, as has previously been noticed, the theory carries the potential to be studied with other non-digital issues, such as retailing and tourism marketing. Future studies using the theory in other topics would enrich the phenomenon and give a multilateral perspective. Moreover, as the word cloud indicates, “behavioural intention” is the most commonly used dependant variable, which is open to criticism as intention is not always an accurate predictor of actual behaviour. Thus, a more comprehensive approach to the measurement of flow experience comprising the actual behaviour would give us more correct understanding on the phenomenon.

The first research question of the current systematic literature review is about the subjects in which flow theory is used in marketing and consumer behaviour. In this context, it is seen that the number of studies on electronic retailing and information technologies is higher than other topics. It is considered normal to see an increase in the number of studies using flow theory with digital issues, as new technologies occupy more space in daily life. With the technological transformation; individuals' learning processes, their interaction with businesses using online tools such as social media and their behaviour as consumers have changed. In this context, flow theory has been used in marketing mainly to measure the behaviour of consumers in online environments or using information technologies. From this point of view, behaviour of consumers experiencing virtual reality and augmented reality can be investigated using flow theory. Although it is understandable that the theory is generally associated with online environments and used to measure consumer behaviour in these environments, it can also be investigated how consumers' behaviours differ in sports or arts marketing, which are the main areas where the theory was developed.

The second research question of the study is about the theories used together with flow theory. In 25 of the 49 articles reviewed, flow theory was used together with another theory and among these, the Technology Acceptance Model stands out with the number of studies. This theory is followed by the Stimulus-Organism-Response model, which is also a behaviour-related theory. It is not surprising that the Technology Acceptance Model, which tries to explain the adoption process of technological products, or the Stimulus-Organism-Response model, which examines the effects of technological products or services on consumers and its consequences, are used more often as issues related to consumer behaviour in information systems and online environments are mostly researched. In addition to these two theories, Theory of Planned

Behaviour, which aims to explain the behavioural intentions of individuals, has also been used together with the flow theory. Using multiple theories will allow a phenomenon to be explored and explained in more depth, thus flow theory could be used together with other theories such as Diffusion of Innovation Theory, which fits with the use of this theory in digitalization issues as it measures the adoption process of innovations among individuals.

The last research question of the systematic literature review is about the uni-dimensional or multi-dimensional use of flow theory. While 27 studies dealt with flow theory in a multi-dimensional way, 22 studies dealt with it uni-dimensionally. It is seen that the disagreement about the uni- or multi-dimensional use of the theory also exists about what the dimensions are. Different dimensions were used in multi-dimensionally structured studies. Of course, it is possible to use only the research-related dimension of the theory in studies, but the variables other than the 9 dimensions of the theory were also defined and used as dimensions of flow. Based on this situation, it is thought that the use of flow theory in different marketing-related contexts will contribute to the clarification of the concepts. The current literature review is expected to guide researchers in this manner.

As in all academic studies, the current literature review is subject to some limitations. While investigating the use of flow theory in the field of marketing, only the articles in the two main databases are included in the search and other databases were excluded from the scope. Articles in Turkish academic journals and published postgraduate theses were not included in the review and a comparison could not be made in this context. Furthermore, books, book reviews, conference proceedings and the articles written in a language other than English were not included in the review. Further review studies could be made by incorporating these studies and would provide a more comparative insight.

Appendix

Authors (Year)	uni-/multi-dimensional	Dimensions used	Field of study	Sample type	Research method	Measurement	Method used	Theories used together	Antecedents	Outcomes
Koufaris (2002)	multi-dimensional	enjoyment, control, concentration	e-retailing	consumers	quantitative	online survey	linear and logistic regression	TAM	web skill, challenge, involvement, product search	unplanned purchase, intention to return

Lu et al. (2010)	multi-dimensional	perceived enjoyment, concentration	information technology	students	quantitative	survey	SEM	TPB, TAM	attitude to use, intention to use
O’Cass & Carlson (2010)	unidimensional		information technology	participants	quantitative	online survey	SEM		satisfaction, aroused feelings, loyalty, WoM
Kim, Oh, Yang & Kim (2010)	multi-dimensional	perceived enjoyment, perceived copresence	gaming	consumers	quantitative	online survey	SEM		image, communication, attractive characteristics, intention to play
Lotz et al. (2010)	multi-dimensional	challenge, skill	retailing	consumers	quantitative	survey	SEM		involvement, potency
Wu et al. (2011)	multi-dimensional	concentration, curiosity, enjoyment, playfulness	information technology	participants	quantitative	online survey	SEM	TPB	attitude, intention, controlability, self-efficacy
Shih & Jin (2011)	multi-dimensional	perceived control, perceived enjoyment, concentration	e-retailing	consumers	quantitative	online survey	SEM		satisfaction, purchase intention, willingness to purchase
Nah et al. (2012)	unidimensional		information technology	students	quantitative	experiment	SEM		skill challenge, brand equity
Wang & Hsiao (2012)	multi-dimensional	concentration, control	retailing	consumers	mixed method	focus group + survey			shopping intention, challenge, skill

									enjoy ment	
									skill, challen ge, telepre sence, interac tivity	
Huang, Backma n, & Backma n (2012)	multi- dimension al		touris m	stude nts	quantitati ve	experi ment	linear regres sion		involve ment	travel intentio n
									perceive d usefulne ss, perceive d ease of use, regulato ry fit	satisfac tion, loyalty
Hsu et al. (2013)	uni- dimension al		infor matio n techn ology	consu mers	quantitati ve	survey	SEM	TAM, Regul atory Fit Theor y		
									perceive d usefulne ss, perceive d ease of use	behavi oral intentio n
Huang et al. (2013)	uni- dimension al		touris m	touris ts	quantitati ve	online survey	SEM	TAM, Hedon ic Theor y		
									perceive d usefulne ss, perceive d ease of use	intention to revisit, proble matic social networ k site use
Huang et al. (2014)	multi- dimension al	interac tion, arousal	social media	social media users	mixed method	interview + survey	SEM	Uses and Gratifi cation	social gratifica tion	
Bilgihan et al. (2014)	uni- dimension al		touris m	touris ts	quantitati ve	survey	EFA CFA- scale develo pment			
									advertisi ng value, informat iveness, credibili ty, entertai nment, irritatio n, incentiv es	purcha se intentio n
Kim & Han (2014)	uni- dimension al		infor matio n techn ology	stude nts	quantitati ve	survey	SEM			

Bilgihan et al. (2015)	uni-dimensional		tourism	tourists	quantitative	online survey	SEM		hedonic feature, utilitarian feature	brand equity, trust, e-loyalty
Gao et al. (2015)	uni-dimensional		e-retailing	consumers	quantitative	online survey	SEM	Information Systems Success Model	system quality, information quality, service quality, privacy and security concern	satisfaction, intention to purchase
Bilgihan (2016)	uni-dimensional		e-retailing	students	quantitative	online survey	SEM		hedonic, utilitarian features	brand equity, e-loyalty, trust
Huang & Liao (2017)	multi-dimensional	concentration, playfulness, time distortion, exploratory behavior	information technology	participants	quantitative	survey	SEM	Virtual Liminoid Theory	sense of body ownership, ownership control, self-explorative engagement	spend more time, satisfaction
Ozkara et al. (2017)	multi-dimensional	enjoyment, perceived control, concentration, merging, curiosity, time distortion	e-retailing	consumers	quantitative	online survey	SEM		challenge, skill, goal clarity, feedback	purchase intention
Buzady (2017)	multi-dimensional	challenge, skill	gaming		qualitative	case study		Leadership Theory		

		perceived enjoyment, concentration, and perceived control									system quality, information quality	satisfaction, stickiness, WOM
Gao et al. (2017)	multi-dimensional		tourism	participants	quantitative	online survey	SEM	Success Model				
Frash et al. (2018)	unidimensional		tourism	tourists	quantitative	online survey		factor analysis				
Herrando et al. (2018)	multi-dimensional	concentration, enjoyment, temporal distortion	e-retailing	social media users	quantitative	online survey	SEM	Stimulus-Organism-Response		social passion		positive WOM
Berger et al. (2018)	multi-dimensional	interactivity, optimal challenge	gaming	participants	quantitative	experiment		ANOVA				brand engagement, self-brand connection
Tan & Ooi (2018)	unidimensional	perceived enjoyment	tourism	participants	quantitative	survey	SEM	UTAUT				behavioral intention
Chen et al. (2018)	multi-dimensional	enjoyment, concentration	e-retailing	consumers	quantitative	online survey	SEM	TAM		perceived ease of use, perceived usefulness		attitude
Lopez et al. (2018)	unidimensional		e-retailing	consumers	quantitative	online survey	SEM			website evaluation		satisfaction
Zhao & Renard (2018)	multi-dimensional	enjoyment, escapism	gaming	participants	quantitative	online survey		regression				social sharing
Lavoie & Main (2019)	unidimensional		gaming	students	quantitative	experiment		process analysis		task difficulty		consumer attitude
Salleh, Ha, Kitchen, & Any	multi-dimensional	usability, interactivity,	e-retailing	students	quantitative	survey		logistics regression				purchase intention

(2019)		trust, aesthetics							
		concentration, clarity, feedback, challenge, autonomy, interaction,							
Silva et al. (2019)	multi-dimensional	learning	education	students	quantitative	survey	SEM		
		concentration, enjoyment, time distortion	e-retailing	consumers	quantitative	online survey	SEM	Stimulus-Organism-Response	WOM, return intention, repurchase intention
Herrando et al. (2019)	multi-dimensional								
		concentration, technology	information technology	students	quantitative	survey	SEM	TAM	perceived ease of use, perceived usefulness, intention to use
Akbari et al. (2020)	uni-dimensional	control							
		attention, focus, cognitive	e-retailing	participants	quantitative	survey	factor analysis		
Mahfouz et al. (2020)	multi-dimensional	enjoyment							
		perceived enjoyment, concentration, telepresence	information technology	participants	quantitative	online survey	SEM	TPB, Consumption Value Theory	continuation intention
Dhir et al. (2020)	multi-dimensional								
		concentration, enjoyment, time	tourism	consumers	quantitative	survey	SEM		challenge, skill, interactive, information
Kim et al. (2020)	multi-dimensional								positive attitude, continuance

		distortion							quality, system quality	intention
Han et al. (2020)	multi-dimensional	telepresence, challenge, body ownership, technology control	information technology	participants	quantitative survey		SEM	TAM		playfulness, usefulness
Kazanoglu & Demir (2021)	multi-dimensional	enjoyment, goal clarity, curiosity, time distortion, concentration, telepresence, control	e-retailing	consumers	quantitative online survey		SEM			e-satisfaction, repurchase intention
Brannon Barhorst et al. (2021)	uni-dimensional		information technology	participants	quantitative experiment		SEM	ELM	interactivity, vividness, novelty	information quality, learning, enjoyment
Xu et al. (2021)	uni-dimensional		social media	social media users	quantitative online survey		SEM	TAM	distortion, enjoyment	perceived ease of use, perceived usefulness, social media purchase intention
Cuevas et al. (2021)	uni-dimensional		social media	social media users	quantitative online survey		SEM		mental stimulation, ease of task, content quality, system quality	intention to purchase

									trust, performance expectancy, effort expectancy, social influence, hedonic motivation	perceived value, behavioral intention
Zhao & Bacao (2021)	uni-dimensional	e-retailing	consumers	quantitative	online survey	SEM	UTAUT			
								Stimulus-Organism-Response	social presence, telepresence, consumer trust	impulsive buying behavior
Ming et al. (2021)	uni-dimensional	e-retailing	consumers	quantitative	online survey	SEM				
							ANOVA, regression, mediation analysis	Stimulus-Organism-Response	seamless omnichannel environment	positive WOM, negative WOM
Rodríguez-Torrice et al. (2021)	uni-dimensional	e-retailing	participants	quantitative	experiment					
		perceived enjoyment, concentration	information technology	students	quantitative survey	SEM			gratification, regulation	addiction
Fauzi et al. (2021)	multi-dimensional									
								Social Support Theory, Trust Theory, Social Presence Theory, Service-e-Dominant Logic Theor	community member trust	community engagement
Algharabat & Rana (2021)	uni-dimensional	social media	participants	quantitative	online survey	SEM				

Jeon, Jeong, & Lee (2021)	uni-dimentional	telepresence, focused attention, temporal	tourism	consumers	quantitative	online survey	SEM	atmospherics, layout and design, social presence	emotion, satisfaction
An et al. (2021)	multi-dimentional	distortion	tourism	tourists	quantitative	survey	SEM	Stimulus-Organism-Response	quality of information, satisfaction

5. CONFLICT OF INTEREST STATEMENT

There is no conflict of interest between the authors. (single author)

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The work was carried out by the author solely, including the collection, processing, analysis and interpretation of ideas, sources, literature review and writing.

8. ETHICS COMMITTEE STATEMENT AND INTELLECTUAL PROPERTY COPYRIGHTS

This is a study that does not require permission from the ethics committee.

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