CONSUMER INNOVATIVENESS: A LITERATURE REVIEW

Abstract. This paper reports the results of a systematic review of recent literature on consumer innovativeness. The main purpose of the research is to identify the current research themes, understand emerging themes, and predict future directions in consumer innovativeness research. Previous reviews were either narrowly scoped or needed to be updated. Accordingly, the current literature review may fill this gap in the literature. The study sample is 189 articles published in journals indexed in the Web of Science database in the last decade. Content analysis was employed by using quantitative and narrative approaches. Based on the content analysis, these articles were assigned to five research themes as follows: 1) consequences of consumer innovativeness; 2) antecedents of consumer innovativeness; 3) the moderating role of consumer innovativeness; 4) the mediating role of consumer innovativeness; 5) measurement of consumer innovativeness. The findings showed that the highest proportion of articles reviewed in this study involve research that examines the consequences of consumer innovativeness. New product adoption is the most commonly identified consequence of consumer innovativeness. The next most common research themes were the moderator role and antecedents of consumer innovativeness. Articles in the measurement of consumer innovativeness were relatively rare. The fewer number of articles in the research theme indicates that measurement of consumer innovativeness has been well identified in the previous studies. The mediator role of consumer innovativeness was not common in the last decade. The research themes were examined in detail by providing the variables included in the previous studies and the study findings, as well. The research confirms the crucial role of consumer innovativeness in adoption. Besides, the findings indicated the augmented role of consumer innovativeness in consumer behaviour literature. The results of the research can be useful for guiding future research.

Keywords: antecedents of consumer innovativeness, consumer innovativeness, content analysis systematic literature review, consequences of consumer innovativeness.

Introduction. New product failure rates are high in many industries (Fu and Elliott, 2013). The success of a new product depends mostly on customer acceptance and customer satisfaction (Huang et al., 2004). Accordingly, innovative consumers constitute a vital market segment, and identification of innovators and understanding factors predicting innovativeness are accepted as valuable. Regarding this, research examining consumer innovativeness has become extensive (Kim et al., 2017). Previous studies focused on conceptualization and measurement of consumer innovativeness (Kaushik et al., 2014; Lee and Mano, 2014; Roehrich, 2004). Moreover, the previous studies aimed at determining factors which affect consumer innovativeness (Bartels and Reinders, 2011; Lassar et al., 2005) and influence of innovativeness on purchase intention (Clark and Goldsmith, 2006; Hwang et al., 2019). The broad and comprehensive literature on consumer innovativeness (CI) leads to studies aimed at reviewing previous studies. However, those review studies (Bartels and Reinders, 2011; van Oorschot et al., 2018; Roehrich, 2004) lack updated, systematic or comprehensive syntheses of research findings. From these points, this study aims to identify the current research themes, understand emerging themes, and predict future directions in consumer innovativeness research. For that purpose, a systematic review of recent literature on consumer innovativeness was conducted. The paper is organized as follows. First, the concept of innovativeness is described, and previous studies reviewing the literature on consumer innovativeness

are summarized. Next, the methodology of the current review is provided. Afterwards, the results of the
review are presented. Current trends and possible directions for future research are outlined in conclusion.

**Literature Review.** Innovativeness is «the degree to which an individual is relatively earlier in adopting
new ideas than other members of a system» (Rogers, 1983). More simply, innovativeness is the relative
early purchase of new products (Midgley and Dowling, 1978). However, this definition only covers the
behavioural aspect of being innovative. Innovativeness can also be regarded as a personality trait and
defined as «the degree to which an individual is receptive to new ideas and makes innovation decisions
independently of the communicative experience of others» (Midgley and Dowling, 1978). The former is
referred to as actualized innovativeness and includes the act of adoption or innovative behaviour. The
latter is referred to as innate innovativeness or global personality trait and covers the willingness to try
new things (Goldsmith and Foxall, 2003; Midgley and Dowling, 1978). Another view supposed that
consumers can be more innovative in a product category whereas less innovative in another product
category. Accordingly, the concept of domain-specific innovativeness has been offered and defined as
«the tendency to learn about and adopt new products in a specific domain of interest» (Goldsmith and
Hofacker, 1991). Consequently, there are three different levels of consumer innovativeness as follows:
innovative behavior, innate innovativeness, and domain-specific innovativeness. Consumer
innovativeness is the direct predictor of new product adoption (Slade et al., 2015; Wang et al., 2008). For
instance, the study (Nikou, 2019) conducted in Finland showed that CI significantly positively influences
the intention to use smart home technologies. Similarly, consumer preference for electric vehicles is
influenced by CI (Morton et al., 2016). Another study (Handarkho and Harjoseputro, 2019) conducted on
mobile payments indicated a significant effect of CI on the intention to adopt. Accordingly, it is essential to
determine the level of innovativeness and its antecedents. There is a stream of research focusing on
conceptualization and measurement of innovativeness, as well as factors affecting innovativeness (Bartels
and Reinders, 2010; Goldsmith and Foxall, 2003; Kaushik et al., 2014; Konuk, 2019; Lee and Mano, 2014;
Roehrich, 2004). The extensive and comprehensive literature on consumer innovativeness leads to
studies aimed at reviewing the previous studies. Roehrich (2004) aimed to examine different
conceptualizations and attempts to measure consumer innovativeness. Bartels and Reinders (2011)
reviewed 79 studies on the ISI index and identified the use of three levels of innovativeness. They offered
a theoretical model, including factors affecting three levels of innovativeness, relationships across three
trends, and factors moderating these relationships. The proposed model is comprehensive; however, it
needs to be updated, including recent studies. With a similar approach, Kaushik et al. (2014) reviewed
101 articles on consumer innovativeness, published from 1971 to 2013. They offered an updated model
of Bartels & Reinders's (2011) study. Another study (Kim et al., 2017) reviewed the articles that have cited
Kim et al.'s (2012) paper covering the period of 2013-2017. This review had a narrow focus as it has only
covered documents citing a specific article. Van Oorschot et al. (2018) made a bibliographic review of
innovation adoption covering 2013–2016. The study was not explicitly related to consumer innovativeness
but include more topics such as organizational innovativeness and diffusion process.

**Methodology and research methods.** Based on the existing literature reviews provided above, it can
be concluded that there is a need for an updated and systematic review of consumer innovativeness
research. In turn, directions for future research can be provided. In the frame of this study, a systematic
literature review was conducted to synthesize previous studies. The systematic review process prevents
reviewer bias through an objective selection of articles (Denyer and Tranfield, 2006; Hammersley, 2001).
The review process can be described as follows. At first, the scope of the systematic literature review was
identified. For this purpose, the database and the time period were identified. The review covered the
journals indexed in the Web of Science (WOS) Core Collection database. The WOS database was
selected as it is accepted as the world’s premier scientific citation search platform, including leading
scholarly journals and large-scale data-intensive studies (Li et al., 2018). The scope of the systematic

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literature review was restricted to journal articles published in the last decade. Thus, the period covers the years 2010-2020 (until April). In the second step, the keywords were determined. The keywords were used as follows: «consumer innovativeness», «domain-specific innovativeness», «innovativeness and consumer» and «innate innovativeness». This search resulted in nearly 700 articles. In the third step, the sample of articles was identified based on the article selection criteria. The article’s focus on «consumer» was the main criterion for articles selection. Accordingly, the title, abstract, and keywords of the articles were further examined. This examination indicated that some of those articles are related to organizational or product innovativeness. Thus, they were eliminated from the sample. Duplications were also removed. Besides, only empirical research studies and English written articles were selected. Accordingly, a total of 188 articles met the criteria and formed the research subjects of the present study. Lastly, the articles were analyzed according to the sources, years of publication, research themes, and topics based on content analysis.

Results. The article selection process resulted in 188 articles for review. The articles were published in 115 different journals. Figure 1 shows the sources of these articles. The Journal of Business Research accounted for most of the articles relating to consumer innovativeness (4.74% of articles). The Technological Forecasting and Social Change accounted for 3.7%, and The Journal of Product Innovation Management for 3.168% of articles. Telematics and Informatics, British Food Journal, Computers in Human Behavior, European Journal of Marketing, International Journal of Research In Marketing, Journal of Consumer Marketing, Journal of Travel Research, Psychology & Marketing accounted for 2.11% of the articles. Other journals less frequently published articles relating to consumer innovativeness. Accordingly, consumer innovativeness is under the scope of various journals, depending on the new product examined in the paper. For example, studies (Chu et al., 2019; Morton et al., 2016) examining the effect of CI on the adoption of electric vehicles published in transportation scoped journals such as Research In Transportation Business And Management, Transportation Research Part D-Transport and Environment. Studies (Morosan and DeFranco, 2016, 2019; de Oliveira Santini et al., 2018; Wang, 2014) conducted on tourism products or tourist innovativeness published in hospitality-related journals; e.g., International Journal of Contemporary Hospitality Management, International Journal of Tourism Research, Journal of Travel Research.

Figure 1. The Sources of Articles (only those having three or more articles are presented)
Sources: developed by the authors.

Although the scope of journals is broad. In turn, most of the articles were related to the «business» and «management» categories (n = 91, n = 39, respectively). These categories are followed by «hospitality
leisure sport tourism» (n = 21). There are also studies under the category of «computer science information systems» and «information science library science» (n = 12). The relatively fewer number of studies are under the category of «engineering industrial» (n = 8), «regional urban planning» (n = 8), «food science technology» (n = 6), and «agricultural economics policy» (n = 5). These findings show the interdisciplinary nature of the consumer innovativeness concept. Figure 2 shows the yearly distribution of articles. Although the number of articles has been increasing, there is no stable trend. For instance, the number of articles decreased sharply in 2017 than started to grow. In 2016, the number of articles was maximum, indicating a peak in the covered period.

The Results of the Content Analysis. One hundred eighty-eight selected articles were assigned to one of the five research themes, namely consequences, moderator role, mediator role, antecedents, and measurement. The research themes were determined by the author based on a content analysis of each paper. Accordingly, content analysis was performed with a manual process of reading and coding the articles. The author analyzed the purpose of the study, the variables, and the models or hypotheses and coded the articles into research themes. The descriptive statistics were made with the use of Microsoft Excel 2019 and SPSS 23 programs. Consequently, both quantitative and narrative approaches were employed (Popay et al., 2006). A randomly drawn subset of 38 articles (20% of the sample) was verified by a researcher different from the original coder (Davis et al., 2011). The independent coder’s review was consistent, with 95% of our coding. This value shows high classification reliability. The content analysis indicates that the highest proportion of reviewed articles (70.10%) reports the results of research on the consequences of consumer innovativeness (see Table 1). The next most widely examined research theme was the moderator role of CI (12.37%). It is followed by studies utilizing antecedents of CI (9.28%). According to the content analysis, studies devoted to measurement and the mediating role of CI were relatively rare (5.15%, and 3.09%, respectively).

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<th>Table 1. Research Themes Based on Content Analysis</th>
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<td>Research Theme</td>
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<td>Moderator role</td>
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<td>Mediator role</td>
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<td>Total</td>
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Sources: developed by the authors.
Figure 3 shows how the research themes change through time. Accordingly, the dominant research theme each year is the consequence of consumer innovativeness since the percentage of the theme is the highest each year. The moderating role of consumer innovativeness has been an emerging topic since 2015. The research themes of measurement and the mediating role of CI were not the main focus of the literature in the last decade.

Figure 4 represents the cumulative number of studies in each research time for the last decade. As can be seen from Figure 4, studies examining the consequences of consumer innovativeness has been increasing at an increasing rate. This rapid growth shows the popularity of the topic. The moderating role of CI has been an emerging research theme as the number of studies has been increasing, especially for the last five years. Similarly, the cumulative number of articles classified as antecedents has been growing in the previous decade. The cumulative number of articles devoted to measurement has been steady, indicating that the research theme has reached a saturation period. The same trend is also valid for the research theme «mediating role».

Sources: developed by the authors.
The results of the content analysis are discussed in detail for each research theme. Consequences of Consumer Innovativeness. The research theme covers the studies that aimed to determine the variables affected by consumer innovativeness. The results of our review indicate that various dependent variables were examined, such as adoption, purchase intention, repurchase intention, brand switching, brand loyalty, evaluation of product attributes, perceived value, perceived risk, willingness to pay, brand extension. Figure 5 shows the consequences of consumer innovativeness examined in the sample of articles. Only the consequences that count more than three were shown. Accordingly, the most widely examined consequence is adoption intention or adoption behaviour (n = 87, 63%). It is followed by brand responses and product evaluations (n = 17, 12%; n = 14, 10% respectively). Other less frequently mentioned consequences were perceived value (n = 9, 7%), perceived convenience (n = 6, 4%), and willingness to pay more (n = 5, 4%).

Figure 5. Consequences of Consumer Innovativeness

Sources: developed by the authors.

The new product adoption was the most widely identified consequence of consumer innovativeness. The studies cover various new products, from services to high-tech products. For instance, there is a stream of research investigated the influence of consumer innovativeness on the adoption of sustainable products and services, such as eco-innovations or green products (Biswas and Roy, 2015; Heidenreich et al., 2017; Paparodamis and Tran, 2019; Park and Lee, 2016), electric vehicles (Chu et al., 2019; Morton et al., 2016), organic foods (Bartels and Reinders, 2010; Chakrabarti, 2010; Konuk, 2018), and sharing economy (Hwang and Griffiths, 2017; Liu and Wayne Xu, 2019; Maalouf et al., 2020). Another group of studies (Abbas et al., 2019; Chauhan et al., 2019; Cheng and Chen, 2016; Handarkho and Harjoseputro, 2019; Mahdzan et al., 2017; Shaikh et al., 2020) examined the adoption of financial products and services, e.g., online banking, crowdfunding; Islamic banking, mobile payment, and smart cards. There are also studies (Aldahdouh et al., 2020; Ashraf et al., 2019; Cheung et al., 2019; Murata et al., 2019; Ratten, 2015) focusing on the adoption of high-tech products and information technology such as wearable devices, smart home technology; social media, cyborgs, and cloud computing. Earlier studies focused on smartphones or cell phones (Lee et al., 2013; Li, 2013).

The second most widely examined consequence of consumer innovativeness is consumers’ attitudinal and behavioral responses to brands. Brand responses cover response to brand extension, satisfaction, brand loyalty, brand engagement, repurchase intention and brand switching (Chang et al., 2019; Cui et al., 2018; Eren-Erdogmus et al., 2018; Kelley and Alden, 2016; Quoquab et al., 2018; San-Martin and Lopez-Catalan, 2013; Simmons et al., 2017). Another consequence of consumer innovativeness examined in the literature is consumers’ product evaluations. This research theme covers studies...
examining attitudes toward product and consumers' perceptions about product attributes or characteristics (Kim et al., 2015; Lee, Lee, et al., 2013; Rohm et al., 2012).

Relatively fewer studies (Al-Jundi et al., 2019; Handarkho and Harjoseputro, 2019; Konuk, 2018) investigated other consequences such as convenience, willingness to pay, and perceived value. The positive effect of CI on willingness to pay more has been validated in previous studies (Konuk, 2018; Park and Lee, 2016). Relatively fewer studies investigated the impact of CI on perceived value in terms of hedonic value, utilitarian value, emotional value, or perceived overall value (Al-Jundi et al., 2019; Chen and Fiore, 2017; Kim and Kim, 2017). For instance, (Hong et al., 2017) showed a positive effect of CI on hedonic and utilitarian values. The Moderating and Mediating Role of Consumer Innovativeness. The studies on the moderating role of consumer Innovativeness have examined the effects of CI on various relationships. Table 2 shows those studies and examined relationships. Consumers’ evaluations of products were the commonly examined independent variable such as the level of product innovativeness, perceived quality, perceived value, and perceived design. The variables as repurchase intention, adoption, brand equity, and satisfaction were examined as dependent ones. Those studies mostly provided empirical evidence for the moderating role. The mediating role of consumer innovativeness has been examined in a fewer number of studies; thus, it is not possible to make conclusions on its mediating role.

Table 2. Studies Examining the Moderating Role of Consumer Innovativeness

<table>
<thead>
<tr>
<th>Study</th>
<th>Relationship</th>
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<tr>
<td>Byun and Sternquist (2011)</td>
<td>perceived perishability, scarcity, and low price → in-store hoarding</td>
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<td>Hur et al. (2012)</td>
<td>Consumption values → purchase intention</td>
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<td>Jung et al. (2015)</td>
<td>Quality → satisfaction</td>
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<td>Kuester et al. (2015)</td>
<td>Launch price → Perceived price fairness</td>
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<td>Li et al. (2015)</td>
<td>product originality → adoption intention</td>
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<td>Lin et al. (2015)</td>
<td>Motivation &amp; uncertainty → E-payment use</td>
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<td>Nørskov et al. (2015)</td>
<td>Product attributes → brand equity</td>
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<td>Schweitzer and Van den Hende (2016)</td>
<td>Product design → adoption intention</td>
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<td>Shi et al. (2016)</td>
<td>Perceived relationship investment → relationship strength</td>
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<td>Park and Gunn (2016)</td>
<td>Perceived image of the product → perceived product aesthetics</td>
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<td>Hwang and Griffiths (2017)</td>
<td>Attitude &amp; empathy → purchase intention</td>
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<tr>
<td>Lee and Johnson (2017)</td>
<td>Product design → willingness to buy</td>
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<td>Menidjel et al. (2017)</td>
<td>Brand trust → brand loyalty</td>
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<td>Schillo et al. (2017)</td>
<td>Social identity &amp; social influence → perceived value → purchase intention</td>
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<td>Wang et al. (2017)</td>
<td>Quality → satisfaction → behavioural intentions</td>
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<td>Zhang and Hou (2017)</td>
<td>Perceived risk → information search</td>
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<td>de Oliveira Santini et al. (2018)</td>
<td>Perceived value → revisit intention</td>
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<td>Lee and Shin (2018)</td>
<td>Perceived product smartness → customer satisfaction</td>
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<td>Gumel (2018)</td>
<td>Attitude &amp; social norm → adoption intention</td>
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<td>Krey et al. (2019)</td>
<td>Perceived value → attitude toward using the product</td>
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<td>Pantano et al. (2019)</td>
<td>Attitude toward storefront → attitude toward retailer &amp; entry decision</td>
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<td>Wang et al. (2019)</td>
<td>Perceived product innovativeness → brand image &amp; perceived value</td>
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<tr>
<td>Abbas and Mir (2020)</td>
<td>Innovation characteristics &amp; consumers’ characteristics → consumers’ resistance towards innovation</td>
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<tr>
<td>Adapa et al. (2020)</td>
<td>Perceived smart retail technology → Perceived shopping value</td>
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Sources: developed by the author.
The Antecedents of Consumer Innovativeness. Various factors have been encountered as antecedents of consumer innovativeness in previous studies (see Table 3). These factors can be grouped into four main categories, namely, personal factors, psychological factors, social factors, and marketing mix elements. Personal factors cover family life cycle, gender, income, self-esteem, and personality traits. For instance, (Thakur and Jasrai, 2018) investigated the discriminating effects of the family life cycle, gender, income, and age on the level of innovativeness. The research findings showed that gender, age, and family life cycle are significant predictors of innovativeness towards mobile telecom services. Psychological factors include shopping motivations, personal values, and thinking styles. For instance, joyful consumption, altruistic, and biospheric values affect consumers’ eco-innovativeness (Gurtner and Soyez, 2016). Social factors include interpersonal influence (Müller et al., 2018).

Table 3. The Antecedent Variables Examined in Previous Studies

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Measurement of Consumer Innovativeness. Studies focusing on measurement either validated existing scales or generates new scales. For instance, (Chao et al., 2016) tested cross-cultural validation of the vicarious innovativeness scale. (Caricati and Raimondi, 2015) validated motivated Consumer Innovativeness scale for an Italian sample. On the other hand, (Waheed et al., 2017) aimed to generate measurement for actual innovative behaviour. Similarly, (Kaushik and Rahman, 2016) developed a self-service innovativeness scale.

Conclusion. This study reviewed the articles on consumer innovativeness published in Web of Science (WOS) indexed journals for the last decade. Content analysis was conducted to identify the current research themes, understand emerging themes, and offer future directions. The article selection process leads to 188 articles published in 115 different journals. Five research themes were identified, namely, consequence, antecedents, measurement, the moderator role, and the mediator role. The study revealed that consequences are the most studied research theme in the consumer innovativeness area over the last decade. The most widely studied consequence was the adoption of new products. The findings have indicated a positive and significant effect of CI on adoption. This is consistent with the knowledge that CI is crucial in explaining the characteristics of adopters (Kim et al., 2017). It can be concluded that studies focused on the effect of CI on the adoption of the most recent new products of the time that the study is conducted. For instance, earlier studies were conducted on cell phones (Lee, 2014), whereas recent studies conducted on wearable devices, electric vehicles (Cheung et al., 2019; Chu et al., 2019). This finding is consistent with the reality that more and more new products are introduced. The moderator role of consumer innovativeness is the second most important theme to receive the attention of scholars. It is empirically validated that CI moderates various relationships such as quality and satisfaction, value and purchase intention, product characteristics, and adoption. Accordingly, it is possible to link innovativeness with other concepts in consumer behaviour literature. Antecedents of consumer innovativeness are the third-ranked and growing research theme in our sample of articles. Mostly, personal and psychological factors have been examined. The review showed that the measurement of CI has been less common, indicating that it is well identified in the previous studies. Accordingly to the results of the review, three high-potential directions for future research are recommended as follows.

− The moderator role of consumer innovativeness was found as an emerging theme. Accordingly, investigating the moderating effect of CI on different relationships may contribute to the literature. More studies on this theme may augment the essential role of CI in consumer behaviour literature.

− The influence of consumer innovativeness on adoption intention has been a popular theme throughout the last decade. Studying the effect of CI on the adoption of recent new products may still contribute to the literature. Moreover, investigating the effect of CI on willingness to pay more may be beneficial. It is because the willingness to pay is accepted as a more profound commitment and closer to the actual adoption behaviour than intention (Fu and Elliott, 2013).
To better understand the consumer innovativeness concept, different antecedents could be investigated. Psychographics are accepted as better predictors of consumer behaviour (Vyncke, 2002). Thus, more studies investigating the influence of lifestyle, personal values, and shopping motivations on consumer innovativeness are needed in determining the characteristics of innovative consumers.

Overall, this study showed how consumer innovativeness has thrived in consumer behaviour literature. Apart from studies purely focusing on consumer innovativeness, there is a stream of research combining consumer innovativeness and other concepts via moderating and mediating effects. Accordingly, the level of innovativeness affects the roles of perceived value, quality, price, design, and so forth. The results have some practical implications at the firm level and macro level through supporting marketing strategies, economy, and sustainability. The study revealed the importance of consumer innovativeness in profiling consumers. The use of consumer innovativeness by managers in segmenting decisions may provide more valuable consumer insights. In this manner, more accurate product design and communication strategies can be developed for well-established segments of new products. Those strategies constitute an essential role in customer acceptance and thus may reduce new product failure rates. Lower rates of failure contribute to the economy; hence innovations are vital for many industries. For instance, in the median OECD country, 53% of firms introduced new products between the years 2014-2016, and these firms accounted for 70% of business sector employment (OECD, 2019). Besides, recent studies showed the role of consumer innovativeness on the adoption of green or eco-friendly products. Accordingly, the practices devoted to sustainability issues may target innovative consumers, as well as environmentally sensitive consumers. Those innovators, in turn, may leverage the diffusion of those practices in their social system. An increasing number of studies that link consumer innovativeness and sustainable consumption may contribute to the sustainable development goals of the United Nations that supports responsible consumption and production. One of the limitations of this study is that the sample covers articles published in WOS indexed journals. Other indexes such as Scopus or EconLit may also include articles that deal with consumer innovativeness. The present review concentrated on research themes; further research may review the methodology of those studies, as well.

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Канан Еригіт, Ph.D., доцент, Університет Хаджетепе, Туреччина

Інноваційна активність споживачів: бібліографічний аналіз

Статтю проаналізовано на основі наукових публікацій, щодо інноваційної активності споживачів в ефективності управління інноваційною активністю споживачів, щодо ефективності управління інноваційною активністю споживачів із використанням бібліометричного аналізу наукових публікацій з данной проблематики. Актуальність даної роботи полягає у запровадженні нових інноваційних методик і підходів до управління інноваційною активністю споживачів.

Результати проведеного бібліометричного аналізу наукових публікацій з даної проблематики показали, що бібліометричний аналіз наукових публікацій є досить ефективним інструментом для дослідження інноваційної активності споживачів. На основі аналізу наукових публікацій було виявлено, що бібліометричний аналіз наукових публікацій є досить ефективним інструментом для дослідження інноваційної активності споживачів. На основі аналізу наукових публікацій було виявлено, що бібліометричний аналіз наукових публікацій є досить ефективним інструментом для дослідження інноваційної активності споживачів. На основі аналізу наукових публікацій було виявлено, що бібліометричний аналіз наукових публікацій є досить ефективним інструментом для дослідження інноваційної активності споживачів.