

Consumer Innovativeness: Cross-Cultural Differences and Influence on Acceptance of Product Service Systems

Anna Németh

Business Economy and Management, Faculty of Economics and Administration, Masaryk University, Brno, Czech Republic

491281@mail.muni.cz

Abstract: Product Service Systems are considered a new, circular business model that could help businesses be sustainable while maintaining economic growth at the same time. Consumer innovativeness can predict and influence acceptance of such novel business models. However, differences in innovativeness can vary across countries and should be considered in research. This study aims to examine differences and influence of consumer innovativeness on consumer acceptance of Product Services Systems based on data collected from Czech Republic, Sweden and Hungary. For the analysis pay-per-wash was chosen, as washing machines are one of the most used everyday products. This paper takes a descriptive and quantitative approach while using regression as a data analysis method. The findings enrich current scarce knowledge of differences and influence of consumer innovativeness on consumer acceptance of Product Service Systems, especially considering that Central- and Eastern European countries are underrepresented in the literature. For the managerial contribution, the study offers insights for more efficient consumer segmentation and targeting for introduction of pay-per-wash services.

Keywords: product service systems, consumer innovativeness, cross-cultural research

1. Introduction

Nowadays the consumption patterns of the Western countries have become unsustainable (European Environment Agency, 2020). Researchers have been focusing on trying to find ways to overcome this issue and companies have also been searching for alternative ways to satisfy the need of their consumers while being more sustainable (Stål and Corvellec, 2018). Transitioning from the current linear model to a circular economy one can offer a solution for this problem. Product Service Systems (PSS) are the business models to support the realization of circular economy. The essence of PSS is that companies keep the ownership of the products while they rent or lease them for the consumers; and in the meantime creating more durable products. In addition, they become more environmental friendly because one product serve multiple consumers (Tukker, 2015; Retamal, 2017; Catulli et al., 2020). However, the consumer adaptation and acceptance of such business models are still under researched (Catulli et al., 2017). Moreover, companies who wish to transit to circular business models lack information on consumers who would adopt them, so they cannot develop marketing strategies (Perren and Kozinets, 2018).

In this paper, pay-per-wash (washing machine) was selected as a representation of Product Service Systems since washing machines are one of the most popular and everyday used household appliances (Yuan et al., 2016; Hischier et al., 2020).

One of the key factors that companies' success relies on is innovation (Pauwels et al., 2004), however majority of innovations fail (Srinivasan et al., 2009). In order to make a new innovation profitable, companies need to focus on fulfil their consumers' needs and create value for them. That is why research focus turned on consumer innovativeness (Goldsmith and Hofacker, 1991; Im et al., 2003). It is defined as consumer's tendency to adopt new products (Tellis et al, 2009).

The goal of this study is two folded: on the one hand, it seeks to present whether consumer innovativeness predicts adaptation of pay-per-wash across three countries: Czech Republic, Sweden and Hungary. In addition, this paper aims to show the differences of consumer innovativeness. On the other hand, for the managerial side, this paper attempts to learn about the characteristics of the consumers who would adopt pay-per-wash services in order to assist the segmentation and targeting strategies of companies.

In the first section of the paper, literature review will be provided as a background for the paper, then by running multiple linear regressions, the influence of consumer innovativeness on intention to adopt pay-per-wash will be assessed. Lastly, it will be studied whether demographics predict consumer innovativeness across countries and if so, what characteristics the innovator has.

2. Literature review

The circular economy (CE) phenomenon was launched to overcome the problem of increasing consumption and decreasing non-renewable resources. CE is still a new concept, scientists have not agreed on one definition (Edbring et al., 2016). According to the European Commission, circular economy is defined as an economy “where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimized” (2015, p. 2).

In order to help the transition to circular economy, Product Service System were introduced. Although, research on this topic started 25 years ago, this area is still not deeply researched. PSS is a business model that combines products and services while reduces environmental effects (Goedkoop et al., 1999). It promotes the “use of products” instead of the ownership of the products (Baines et al., 2007).

In the literature, three types of PSS can be found. Catulli et al. (2014) define them in the following ways:

Product-oriented PSS: “ownership of the product (material artifact) is transferred to customers and services are provided to help ensure product performance over a given period of time.”

Use-oriented PSS: “ownership rights related to the product are retained by the service provider and the customer purchases use of the product over a specified period of time.” This business model includes renting and leasing. In my doctoral dissertation, I will focus on this type of Product Service System model.

Result-oriented PSS: “the product required for service delivery is owned by the service provider. However, in contrast to use orientated PSS the customer purchases an outcome/ result of service provision, which is specified in terms of performance not in terms of product use over a period of time.” (Catulli et al., 2014, p. 2) This paper focuses on use-oriented PSS.

There are two main beneficiaries of the Product Service System: consumers and the environment. For the consumers, PSS provides two benefits: from the product side PSS delivers value for the consumer by providing highly customized quality products (Cook et al., 2006). PSS can also offer a sense of uniqueness to its consumers which enables value creation. As for the service side, taking away the responsibility of maintenance, reparation of products and administrative task can also deliver value for the consumers (Manzini et al., 2001; Rocchi, 2005; Baines et al., 2007).

From the environmental perspective, due to the nature of PSS, manufacturers and producers become more aware of their products’ quality and maintenance requirements since they monitor them, recycle and refurbish them. This increases the products’ lifetime and reduces waste (Mont, 2004; Baines et al., 2007).

The current PSS literature is mainly focused on the business side, however in recent years, researchers have started to study PSS from the consumers’ perspective. Still, little is known about the consumer side, especially adaptation and acceptance of PSS business models.

2.1 Measures of innovativeness

This paper adopts the theoretical framework and developed measurement for consumer innovativeness from Tellis et al., 2009. Based on extensive research on the literature, they identified ten dimensions to measure consumer innovativeness. These measures are the followings:

- *Novelty seeking*

Novelty seeking is described in different ways such as a personality trait or an “internal drive” that persuade people to search for new (Pearson, 1970), but researchers agree that it leads to innovative behavior, to willingness to accept new products (Hirschman, 1980; Roehrich, 2004)

- *Risk taking*

Risk is known as a key component of consumer behaviour (Conchar et al., 2004). Apart from that, it also plays an important role to promote consumer innovativeness (Raju, 1977).

- *Variety seeking*

It is a personality trait that affects the consumer's desire to try new or different products (Steenkamp & Baumgartner, 1992) and it leads to consumer innovativeness (Hartman & Samra, 2008).

- *Opinion Leadership*

It refers to a consumer's desire to affect the decision making of other consumers (Childers, 1986). Midgley and Dowling (1993) argue that opinion leaders are innovators and they have no social dependence.

- *Stimulus variation*

There is a group of consumers who have a need for stimulation and they prefer the unfamiliar (Tellis et al., 2009). This trait also leads to innovativeness (Hebb, 1955; Hirschman & Wallendorf, 1979).

- *Habituation*

Ram (1989) argues that consumers' refusal to adopt new products could be a habitual behaviour. Research shows that almost half of the time consumer behaviour is motivated by habits (Wood et al., 2002). Consumers are more likely to be on the safe side and stick with the well-known products and habits instead of trying something new (Kotler, 2001; Meijkamp, 2000; Schmidt, 2015).

- *Nostalgia*

Nostalgia means glorifying the past and preferring old products (Tellis et al., 2009). Researchers argue that this has a negative influence on consumer innovativeness (Steenkamp et al., 1999).

- *Suspicion*

"Suspicion is consumers' fear or doubt of the intentions of marketers of new products and services" (Tellis et al., p. 4). Catulli (2012) also support this proposition; during his research, respondents raised concerns about the supplier. Consumers have concerns about the reliability of the products and businesses (Meijkamp, 2000; Ylä-Mella et al., 2015).

- *Effort*

"The term "effort" refers to consumers' reluctance to expend time and effort to adopt a new product." (Tellis et al., 2009, p. 5).

- *Frugality*

The cheaper the innovation the more quickly consumers will adopt it (Tornatzky & Klein, 1982; Kapoor et al., 2014). However, when a new product is launched, it has a high cost that innovators has to pay (Golder & Tellis, 1997).

3. Methodology

This paper takes a quantitative approach because it "seek explanations and predictions that will generate to other persons and places. The intent is to establish, confirm, or validate relationships and to develop generalizations that contribute to theory" (Leedy & Ormrod, 2001, p. 102). This paper attempts to establish and confirm a relationship between consumer innovativeness and consumer acceptance of pay-per-wash. Additionally, descriptive research design was chosen due to the novelty of the circular economy phenomenon and it can also be applied to compare groups, in this case countries.

3.1 Sample and data collection

The research consists of three samples: Czech Republic, Sweden and Hungary. Data was collected through a Czech professional research agency in October, 2021. Quota sampling was used and the final sample size amount to 816-821 respondents in each country. Detailed descriptive statistics about the sample can be seen in Table 1:

Table 1: Demographics

Demographics	Czech Republic (N=816)	Sweden (N=821)	Hungary (N=820)
Age range			
18-23	8.1%	7.7%	8.7%
24-30	12.6%	11.7%	13.4%
31-40	21.3%	16.9%	19.6%
41-50	23.4%	16.4%	23.2%

Demographics	Czech Republic (N=816)	Sweden (N=821)	Hungary (N=820)
51-60	16.5%	16.0%	14.8%
61 or above	18.0%	31.3%	20.4%
Gender			
Male	50.9%	50.8%	47.2%
Female	49.1%	49.2%	52.8%
Education			
Primary education	34.4%	20.6%	16.6%
High school diploma	40.3%	31.4%	56.0%
BA or higher	25.2%	48.0%	27.4%

3.2 Measurement

A questionnaire was created to obtain the attitudes and opinions of the populations. The questionnaire was adopted from the work of Tellis et al. (2009) because they developed a cross-cultural item scale to measure consumer innovativeness.

The questionnaire included 10 statements, each representing a construct of consumer innovativeness described in the Literature review section above.

Participants were asked to indicate how much they agree or disagree with statements on a 1-5 Likert scale. The Likert scale was coded as 1 meaning "Strongly disagree" and 5 meaning "Strongly agree". In the statistical analysis each scale was treated as an interval variable.

3.3 Data analysis

Multiple linear regression analysis was carried out because it is an appropriate method to use to find out whether consumer innovativeness significantly predicts adaptation of pay-per wash. The variables are measured on an interval scale and the assumptions of normal distribution, non-multicollinearity, no autocorrelation and homoscedasticity were met.

3.3.1 Czech Republic

Table 2: Results of regression in Czech Republic

	Standardized beta coefficients	P-value
Stimulus variation	.057	.173
Habituation	-.002	.956
Variety seeking	.080	.064
Effort	.063	.082
Risk taking	.197	<.001
Nostalgia	-.038	.296
Opinion leadership	.023	.600
Suspicion	.025	.482
Frugality	.033	.352
Novelty seeking	.128	.004

The overall regression was statistically significant ($R^2 = 0.149$, $F(df\ 10, df\ 805) = 14.042$, $p < 0.001$).

The effect size is 0.18 which indicates a medium effect.

It was found that Risk taking and Novelty seeking significantly predicted Intention to use pay-per-wash.

However, it was found that Stimulus variation, Habituation, Variety seeking, Effort, Nostalgia, Opinion leadership, Suspicion and Frugality did not significantly predict Intention to use pay-per-wash.

3.3.2 Sweden

Table 3: Results of regression in Sweden

	Standardized beta coefficients	P-value
Stimulus variation	.114	.003
Habituation	.091	.013
Variety seeking	.148	<.001
Effort	.060	.085
Risk taking	.102	.010
Nostalgia	-.117	.001
Opinion leadership	.027	.464
Suspicion	-.002	.943
Frugality	-.018	.613
Novelty seeking	.161	<.001

The overall regression was statistically significant ($R^2 = 0.185$), F (df 10, df 810)=18.440, $p < 0.001$).

The effect size is 0.23 which indicates a medium effect.

It was found that Stimulus variation, Variety seeking, Nostalgia and Novelty seeking significantly predicted Intention to use pay-per-wash. However, Nostalgia has a negative impact on Intention to use pay-per-wash.

Not significant predictors were Habituation, Effort, Risk taking, Opinion leadership, Suspicion and Frugality.

3.3.3 Hungary

Table 4: Results of regression in Hungary

	Standardized beta coefficients	P-value
Stimulus variation	.069	.133
Habituation	.035	.341
Variety seeking	.000	.993
Effort	.120	.001
Risk taking	.049	.245
Nostalgia	-.083	.025
Opinion leadership	.101	.010
Suspicion	-.014	.693
Frugality	-.006	.870
Novelty seeking	.234	<.001

The overall regression was statistically significant ($R^2 = 0.154$), F (df 10, df 809) =14.736, $p < 0.001$).

The effect size is 0.18 which indicates a medium effect.

It was found that Effort and Novelty seeking significantly predicted Intention to use pay-per-wash.

However, it was found that Stimulus variation, Habituation, Variety seeking, Nostalgia, Opinion leadership, Suspicion and Frugality did not significantly predict Intention to use pay-per-wash.

Tellis et al. (2009) argues that true representation of consumer innovativeness can be seen by reluctance. In the group of reluctance belongs effort, nostalgia, suspicion and frugality. According to Tellis et al. (2009), consumers overestimate their own innovativeness, so the "Reluctance" group could show consumers real level of innovativeness. However, the analysis showed no significant results.

Since Novelty seeking seems to represent consumer innovativeness in every country, to assess the relationship between demographic characteristics and consumer innovativeness 4 categorizes of demographic characteristics on Novelty seeking were regressed.

Table 5: Results of regression on Novelty seeking

	Standardized beta coefficients	P-value
Gender	-.077	<.001
Education	.032	.112
Age	.208	<.001
Income	-.039	.054

The overall regression was statistically significant ($R^2=0.051$), $F(df\ 4, df\ 2452)=34.212$, $p<0.001$).

The effect size is 0.05 which indicates a small effect.

It was found that Gender and Age significantly predicted Novelty seeking.

However, it was found that Education and Income did not significantly predict Novelty seeking.

4. Findings

This paper aimed to examine whether consumer innovativeness predict adaptation of pay-per-wash services across countries. It focused on three countries: Czech Republic, Sweden and Hungary. Consumer innovativeness was measured by 10 constructs created by Tellis et al. (2009) and data was collected by a professional agency through online questionnaire.

Multiple linear regression was applied as it can assess the relationship between consumer innovativeness and adaptation of pay-per-wash. The results shows that in Czech Republic Risk taking and Novelty seeking are two factors of consumer innovativeness that significantly predict intention to use pay-per-wash. In Sweden Stimulus variation, Variety seeking, Nostalgia and Novelty seeking significantly predicted Intention to use pay-per-wash. However, Nostalgia has a negative impact on Intention to use pay-per-wash. And for Hungary, Effort and Novelty seeking significantly predicted Intention to use pay-per-wash.

Sweden seems to be the most innovative country with the most significant predictors and highest R^2 value ($R^2=0.185$) and effect size ($f^2=0.23$). Novelty seeking appears to be a significant predictor in all three countries.

The results show difference from the literature because only a few constructs of consumer innovativeness were significant influencers. This offers space for further research not only in the circular economy context but also in the linear economy one.

The other aim of the study was to see whether demographic characteristics influence consumer innovativeness across countries. The results of such analysis can reveal the characteristics of the innovators.

Tellis et al. (2009) claims that consumers intend to overestimate their own innovativeness, so in order to find out about the characteristics of the innovators, Effort, Nostalgia, Suspicion and Frugality should be explored to show the true level of innovativeness. However, regressing on those variables had no significant results. As Novelty seeking was a variable that was significant for all three countries, it was used to see if demographic characteristics could predict it. The results show that gender and age significantly predict Novelty seeking. It seems that across the three countries innovative consumers are likely to be young women.

For the theoretical side, this paper deepens the current scarce knowledge of consumer acceptance of circular economy by arguing that consumer innovativeness can predict consumers' acceptance of pay-per-wash services. However, with restrictions, since not all theoretic based constructs influence acceptance. Novelty seeking is a construct of consumer innovativeness that significantly predict consumers' intention to use pay-per-wash in all three countries.

For the managerial side, demographic characteristics can help companies to target and segment their consumers. Result shows that across the three countries innovative consumers are likely to be young women.

Acknowledgements

This research was supported by the Student Grant System of Masaryk University, and I would like to thank them for their support.

References

- Baines, T., Lightfoot, H. & Evans, S. (2007) "State-of-the-art in product-service systems", *The Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacturing*, vol. 221, pp. 1543-1552.
- Baumann, C., Elliott, G. and Hamin, H. (2011) "Modelling customer loyalty in financial services", *The International Journal of Bank Marketing*, Vol. 29, No. 3, pp. 247–267.
- Catulli, M. (2012) "What uncertainty?: Further insight into why consumers might be distrustful of product service systems", *Journal of Manufacturing Technology Management*, Vol. 23, No. 6, pp. 780-793.
- Catulli, M., Cook, M., & Potter, S. (2014) *What value do consumers really expect from Product Service Systems? Reflections on how a different conception of value could facilitate the implementation of PSS in consumer markets*. Paper presented at Sustainable Innovation 2014 - 19th International Conference, Copenhagen, Denmark.
- Catulli, M., Cook, M., & Potter, S. (2017) "Consuming use orientated product service systems: a consumer culture theory perspective", *Journal of Cleaner Production*, Vol. 141, pp. 1186-1193.
- Catulli, D., Reed, N., Tzivilakis, J., & Green, A. (2020) *Extending the Life of Infant Mobility Products: Implementing a Product Service System: Report on DEFRA ABR112*. University of Hertfordshire.
- Childers, T. L. (1986) "Assessment of the psychometric properties of an opinion leadership scale", *Journal of Marketing Research*, Vol. 23, No. 2, pp. 184–188.
- Cook, M., Bhamra, T., & Lemon, M. (2006) "The transfer and application of Product Service-systems: from academia to UK manufacturing firms", *Journal of Cleaner Production*, Vol. 14, No. 17, pp. 1455-1465.
- Conchar, M. P., Zinkhan, G. M., Peters, C., & Olavarrieta, S. (2004) "An Integrated Framework for the Conceptualization of Consumers' Perceived Risk", *Journal of the Academy of Marketing Science*, Vol. 32, No. 4, pp. 418-436.
- Edbring, E. G., Lehner, M., & Mont, O. (2016) "Exploring consumer attitudes to alternative models of consumption: Motivations and barriers", *Journal of Cleaner Production*, vol. 123, pp. 5-15.
- European Commission, Closing the loop - An EU action plan for the Circular Economy, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2015, COM(2015) 614 final.
- European Environment Agency, Resource-efficient Green Economy and EU policies, Luxembourg: Publications Office of the European Union, 2014
- Goedkoop, M. (1999). Product Service systems, Ecological and Economic Basics.
- Golder, P. N. & Tellis, G. J. (1997) "Will It Ever Fly? Modeling the Growth of New Consumer Durables", *Marketing Science*, Vol. 16, No. 3, pp. 256–70.
- Goldsmith, R. E. & Flynn, L. R. (1992) "Identifying innovators in consumer product markets", *European Journal of Marketing*, Vol. 26, No. 12, pp. 42–55.
- Goldsmith, R. E. & Hofacker, C. F. (1991) "Measuring consumer innovativeness", *Journal of Academic Marketing Science*, Vol. 19, pp. 209–221.
- Hartman, J. B. & Samra, Y. M. (2008) "Impact of personal values and innovativeness on hedonic and utilitarian aspects of web use: an empirical study among United States teenagers", *International Journal of Management*, Vol. 25, No. 1, pp. 77–94.
- Hebb, D. O. (1955) "Drives and the C.N.S. (Central Nervous System)," *Psychological Review*, Vol. 62, No. 4, pp. 243–54.
- Hepper, E., Wildschut, T., Sedikides, C., Robertson, S., & Routledge, C. D. (2020) "Time capsule: Nostalgia shields psychological wellbeing from limited time horizons", *Emotion*, Vol. 21, No. 4, pp. 1–59.
- Hirschman, E. C. (1980). "Innovativeness, novelty seeking and consumer creativity", *Journal of Consumer Research*, Vol. 7, pp. 283– 295.
- Hirschman, E. C. & Wallendorf, M. (1979) "Correlations Between Three Indicators of Breadth and Variation in Sources of Stimulation," *Advances in Consumer Research*, Vol. 6, H. Keith Hunt, ed. Ann Arbor, MI: Association for Consumer Research, pp. 111–17.
- Hischier, R., Reale, F., Castellani, V., & Sala, S. (2020) "Environmental impacts of household appliances in Europe and scenarios for their impact reduction", *Journal of Cleaner Production*, Vol. 267, 121952
- Hull, C. L. (1943) *Principles of behavior: An introduction to behavior theory*, New York: Appleton-Century-Crofts.
- Im S., Bayus B. L., & Mason, C. H. (2003) "An empirical study of innate consumer innovativeness, personal characteristics, and new-product adoption behavior", *Journal of Academic Marketing Science*, Vol. 31, No. 1, pp. 61–73.
- Jia, L., Song, X., & Hall, D. (2022) "Influence of Habits on Mobile Payment Acceptance: An Ecosystem Perspective", *Information System Frontiers*, Vol. 24, pp. 247–266.
- Kapoor, K. K., Dwivedi, Y. K., & Williams, M. D. (2014) "Examining consumer acceptance of green innovations using innovation characteristics: A conceptual approach", *International Journal of Technology Management & Sustainable Development*, vol. 13, No. 2, pp. 135–160.
- Kotler, P. (2001). *Marketing Management*, Boston: Pearson Education Canada.
- Krishen, A. S., Bui, M., & Peter, P. C. (2010) "Retail kiosks: how regret and variety influence consumption", *International Journal of Retail & Distribution Management*, Vol. 38, No. 3, pp. 173–189.
- Leedy, P. D. & Ormrod, J. E. *Practical Research: Planning and Design*. Upper Saddle River, N.J: Merrill Prentice Hall, 2001. Print.

- Manning, K. C., Bearden, W. O., & Madden, T. J. (1995). "Consumer innovativeness and the adoption process", *Journal of Consumer Psychology*, Vol. 4, No. 4, pp. 329–345.
- Manzini, E. Vezzoli, C., & Clark, G. (2001) "Product service-systems: using an existing concept as a new approach to sustainability", *Journal of Design Research*, vol. 1, pp. 27-40.
- Meijkamp, R. (2000). Changing consumer behaviour through eco-efficient services: an empirical study of car sharing in The Netherlands, shorted version. PhD thesis, Delft University of Technology, Delft.
- Midgley, D. F. & Dowling, G. R. (1978) "Innovativeness: The Concept and Its Measurement," *Journal of Consumer Research*, Vol. 4, pp. 229–242.
- Mitchell, P. (2015) *Employment and the circular economy - Job Creation through resource efficiency in London*, Report produced by WRAP for the London Sustainable Development Commission, the London Waste and Recycling Board and the Greater London Authority.
- Mont, O., Product Service-Systems: Panacea or myth? Ph.D. Thesis, Lund Univ., 2004
- Pauwels, K., Silva-Risso, J., Srinivasan, S., & Hanssens, D. M. (2004) "New products, sales promotions, and firm value: the case of the automobile industry", *Journal of Marketing*, Vol. 68, pp. 142–156.
- Pearson, P. H. (1970) "Relationships between global and specific measures of novelty seeking", *Journal of Consulting and Clinical Psychology*, Vol. 34, No. 2, pp. 199– 204.
- Perren, R. & Kozinets, R. V. (2018) "Lateral exchange markets: How social platforms operate in a networked economy", *Journal of Marketing*, Vol. 82, No. 1, pp. 20-36
- Raju, P. S. (1977), "Theoretical Perspectives on Exploratory Behavior: A Review and Examination of Their Relevance for Consumer Research," Working Paper #67, Working Series in Marketing Research, Pennsylvania State University, University Park.
- Ram, S. (1989) "Successful Innovation Using Strategies to Reduce Consumer Resistance: An Empirical Test", *Journal of Product Innovation Management*, 6, pp 20-34.
- Retamal, M. & Schandl, H. (2018) "Dirty Laundry in Manila: Comparing Resource Consumption Practices for Individual and Shared Laundering", *Journal of Industrial Ecology*, Vol. 22, pp. 1389-1401.
- Rocchi, S., Enhancing Sustainable Innovation by Design, Ph.D. Thesis, Erasmus Univ. Rotterdam, 2005
- Roehrich, G. (2004) "Consumer innovativeness: Concepts and measurements", *Journal of Business Research*, Vol. 57, No. 6, pp. 671-677,
- Routledge, C., Wildschut, T., Sedikides, C., & Juhl, J. (2013) "Nostalgia as a resource for psychological health and wellbeing", *Social and Personality Psychology Compass*, Vol. 7, No. 11, pp. 808–818.
- Schmidt, D. (2015) "Product-Service Systems for Influencing Customer Barriers and Customer Acceptance", *Journal of Economics, Business and Management*, Vol. 3, No. 10, pp. 990-993.
- Srinivasan, S., Pauwels, K., Silva-Risso, J., & Hanssens, D. M. (2009). "Product innovations, advertising, and stock returns", *Journal of Marketing*, Vol. 73, pp. 24–43.
- Steenkamp, J-B. E. M. & Baumgartner, H. (1992) "The Role of Optimum Stimulation Level in Exploratory Consumer Behavior," *Journal of Consumer Research*, Vol. 19, pp. 434–48.
- Steenkamp, J-B. E. M., Hofstede, F., & Wedel, M. (1999) "A cross-national investigation into the individual and national cultural antecedents of consumer innovativeness", *Journal of Marketing*, Vol. 63, pp. 55-69.
- Sudhir, R., Sachin K. R., Sanjeev P., & Abu B. A. H. (2021) "Promoting through Consumer Nostalgia: A Conceptual Framework and Future Research Agenda", *Journal of Promotion Management*, Vol. 27, No. 2, pp. 211-249.
- Stål, H. I. & Corvellec, H. (2018) "A decoupling perspective on circular business model implementation: illustrations from Swedish apparel", *Journal of Cleaner Production*, Vol. 171, pp. 630-643.
- Tellis, G. J., Yin, E., & Bell, S. (2009) "Global Consumer Innovativeness: Cross-Country Differences and Demographic Commonalities", *Journal of International Marketing*, Vol. 17, No. 2, pp. 1–22.
- Tornatzky, L. G. & Klein, K. J. (1982) "Innovation characteristics and innovation adoption-implementation: A meta analysis of findings", *IEEE Transactions on Engineering Management*, vol. 29, No. 1, pp 28–43.
- Tukker, A. (2015) "Product services for a resource-efficient and circular economy – A review", *Journal of Cleaner Production*, vol. 97, pp. 76–91.
- Verplanken, B., Aarts, H., & van Knippenberg, A. D. (1997) "Habit, information acquisition, and the process of making travel mode choices", *European Journal of Social Psychology*, Vol. 27, No. 5, pp. 539–560.
- Wang, E. S. T. (2015) "The role of player innovativeness in adopting new online games: bidimensional and hierarchical perspectives", *International Journal of Technology Marketing*, Vol. 10, No. 3, 236.
- Wood, W., Quinn, J. M., & Kashy, D. A. (2002) "Habits in everyday life: Thoughts, emotions, and action", *Journal of Personal Social Psychology*, Vol. 83, No. 6, pp. 1281–1297.
- Ylä-Mella, J., Keiski, R. L., & Pongracz, E. (2015) "Electronic waste recovery in Finland: consumers' perceptions towards recycling and re-use of mobile phones", *Waste Management*, Vol. 45, pp. 374-384.
- Yuan, Z., Zhang, Y., & Liu, X. (2016) "Life cycle assessment of horizontal-axis washing machines in China", *International Journal of Life Cycle Assess*, Vol. 21, pp. 15–28.