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Navigating Consumer Resistance: A Bibliometric Analysis of Innovation Resistance Theory and Future Research Directions

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ABSTRACT
Now the world is moving forward towards digital era, therefore it is need of the hour to adopt technology and if people not doing so we need to understand the reason for that and the study of innovation resistance help in getting the reason for such behavior. The prime focus of this research is to understand consumer's resistant behavior with special reference to Innovation Resistance Theory (IRT) by synthesizes the existing literature and developing futuristic research directions. The study adopted all four methods of bibliometric analysis along with triangulation approach for descriptive account of existing literature, creation of networks, three field plot, clusters and future research agenda– the data was extracted from the SCOPUS database by using relevant keywords. The findings reveal identification of an intellectual structure, which resulted in the formation of three clusters, namely: i) Barriers to Innovation and Technology Adoption, (ii) Breaking Barriers in Digital Finance Adoption, and (iii) The Paradox of Innovation Resistance**.** The theoretical model demonstrates dimensions, prerequisites and outcomes for future. This study contributes to the literature by providing a comprehensive overview of past and current research on IRT, offering new perspectives for future studies. The findings also have significant implications for stakeholders, enhancing strategies for innovation management and technology adoption.
Keywords: Consumer Resistance; Innovation Resistance Theory (IRT); Bibliometric; Triangulation Approach

I. INTRODUCTION

Landscape of industries has been evolved because of sharing economies which includes re-tailing, transportation, payments, accommodation and many more (Huang et al., 2020). Along with identifying such fluctuations, companies need to apprehend the consumption behavior and attitude of the established market (Laukkanen et al., 2007). Major reason for such changes is technological innovation. Innovation can be considered as an extraordinary degree of transformation in users' everyday life (Dwivedi et al., 2023). The scope of innovation in modern world is very vast. The adoption procedure does not essentially lead to adoption, since eventual rejection may withdraw the process (Laukkanen et al., 2009). By ''awareness talk,'' the innovation is dispersed; without awareness there can be no adoption (Kunf, 2000).

Adaptation and implementation of innovative technologies add values on one side and also has adverse effects on other side. Because of the negative side, people hesitate to use innovative technologies. Resistance movements observed every day and everywhere but when these movements target innovations, companies often face serious challenges (Hietschold et al., 2020). As per Raj et al. (2023), people prefers online reviews over near-real experience provided by virtual reality technology before finalizing the travel destination. Moreover, prior literature postulate that people have a solid aspiration to continue stability amid own cognitions, therefore a few alteration executed on persons can possibly counterbalance this equilibrium which people avoid and results into avoidance of innovation (Huynh & Gurtner, 2023).

User resistance also appears in the case of simpler or any new technology which creates a modification in customers' conventional behavioral outlines, customs, traditions and conducts are possible to be resisted (Kleijnen et al., 2009). Innovation resistance is fear and curiosity that people experience when faced with new technologies (Chen et al., 2024, p.5). Consumer resistance can be passive which create unwillingness to embrace a new technology and active that is conscious postponement of the adoption choice due to apparent risks or users are persuaded that the invention is not for them (Laukkanen et al., 2009).

The conclusion is that losses are perceived as psychologically more severe as equivalent gains and people avoid an innovation which carries more risk and less likely go for adoption. Technology adoption in business is vital for progression, even if it commonly come across user resistance (Hossain, 2023). The theory of innovation resistance (IRT) offers an understanding of customers' resistance regarding any novel technology (Sadiq et al., 2021). IRT has been used in many domains such as online travel agencies (Talwar et al., 2020), autonomous vehicles (Casidy et al., 2021), blockchain technologies (Loh et al., 2023), virtual reality for religious tourism (Raj et al., 2023), online tourism (Hossain, 2023) e-waste (Sajid & Zakkariya, 2023), drone based food delivery (Khalil et al., 2022), mobile health application (Leung et al., 2024), face recognition payment (Chen et al., 2024) to study the resistance behavior of consumers (Talwar et al., 2020).

Consumer resistance is a vital domain of attentiveness and researchers can't overlook it, especially those who are fascinated about the rapid diffusion and acceptance of novel innovations. Regardless of serious influence and significance, customer resistance to innovations has given comparatively little consideration in preceding time (Hietschold et al., 2020; Sajid & Zakkariya, 2023) as the main focus of researchers was found related to adoption (Laukkanen et al., 2009). Kuisma et al. (2007) also confirmed that consumer resistance to innovations has acknowledged somewhat little consideration. Now the world is moving forward towards digital era, therefore it is need of the hour to adopt technology and if people not doing so we need to understand the reason for that. The study related to innovation resistance give answer for reason of resistance by people.

Under the ongoing research thorough understanding of existing literature by applying bibliometric analysis is provided. As review of literature provide a foundation for all other type of research work (Snyder, 2019). As per Kraus et al. (2022), "bibliometric analysis measures the literature and processes data by using algorithm, arithmetic, and statistics to analyze, explore, organize, and investigate large amounts of data". This research deployed all four techniques of bibliometric analysis to understand the literature of consumer behavior concerning resistance with special reference to IRT as underpinning theory.

This research considered "Insightful Analysis" to fulfill the objective of analyzing trend of publications, ongoing research trends and literature land scape on IRT; "Visualization" is applied to identify and analyzing evolving research themes, knowledge networks and hot topics in this domain; "Research Dynamics" is utilized to see the collaborative networks among authors and co-authors; lastly "Contextual Positioning" technique of bibliometric and triangulation technique for verification and validation of qualitative analysis of data are used to explore upcoming research viewpoints and future strategies related to consumer behavior towards technology.

As per our knowledge this is first paper that adopted an interdisciplinary approach by combining management in the form of consumer resistance behavior and science by taking "Innovation Resistance Theory (IRT)" as underpinning philosophy. Emphasis of this article is on less walked domains, provide novel research questions in the form of propositions, suggesting specific areas along with theoretical model for further exploration and provide a base for interdisciplinary work by combining behavior with technology. This article keenly provides directive recommendations for future research as a result of the bibliometric analysis (clusters formed via bibliometric coupling) and triangulation approach along with descriptive account of existing literature.

II. THEORETICAL BACKGROUND

Innovation resistance, as an impression, is somewhat paralleled with the adoption perspective. Emphasizing the significance of the this viewpoint, Ram & Sheth, (1989) outlined IRT that described the resistant behavior of users via five dimensions: viz. usage, value, risk, tradition, and image. Dimensions represent perceived obstacles to innovation adoption as their perception varies among individuals (Huynh & Gurtner, 2023). Functional and psychological factors that cause consumers to resist a given innovation are being explained through these barriers under the theory (Talwar et al., 2021). Usage, value, and risk barriers are observed as functional barriers that depict customers viewpoint on shifts in behavior brought on by embracing innovation (Hossain, 2023). Whereas, psychological barriers include image and tradition barriers by which this theory reflects different types of consumer resistance (Talwar et al., 2020).

Holistically IRT gives a flawless theoretic angle for customer resistance regarding user invention (Sajid & Zakkariya, 2023). It is related to users' response towards novelty due to probable vicissitudes in a comfy practice or to a battle among their individual philosophies (Chemingui & Lallouna, 2013). The extreme form of innovation resistance is mass rejection, moderate form of innovation resistance is a postponement and under last type of resistance naming opposition in this consumers before ultimate rejection try the novel technology (Leong et al., 2020). This theory recognize particular barriers and cultivate targeted marketing tactics to eliminate barriers, facilitating innovations can be effortlessly accepted (Leung et al., 2024).

IRT is also documented for its suppleness as it permits for integration of attitude and obstacles of different theories like Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT)

(Babu et al., 2024). Comprehensive explanations of these barriers are provided in Table 1.

III. METHODOLOGY STRUCTURE

3.1 Bibliometric evaluation

Bibliometric analysis highlights the performance analysis and contribution of existing literature for science mapping (Panda et al., 2024). According to Marzi et al. (2024), with the increase in academic production, bibliometric literature reviews acquired importance due to their role in mapping knowledge in a sole, comprehensible manner. As per Agrawal et al. (2023), there can be three main classes in which bibliometric analysis can be performed, viz.: review, relational and evaluation technique. Traditional reviews, meta-analysis and systematic literature reviews are considered under first part. Networking among authors, countries and sources come under relational practice. Three broad grouping can be made later in evaluation practice, i.e.: impact measure (based on count of citations), productivity measure (rely on count of publications) and hybrid measure (consider the impact, productivity measure and h-index). Therefore, our study focuses on knowing the innovation resistance of consumer by applying this analysis. Presentation of analysis is made in the form of answers to question with justification of research question that can be seen in table2.

3.2 Sources of data

In this article, 348 articles of published writings pertinent to Innovation Resistance were accumulated from Scopus database on 3rd January 2025 and considered the data till the date mentioned. The search string as ["Innovation resistance theory" OR "innovation resistance" OR ("consumer resistance" AND "technology" OR "adoption" OR "technology adoption" OR "innovation adoption" OR "information system")] was used, which gave 508 documents. Papers published in the fields of computer science, sociology, business, psychology, arts, or economics were included in the search. Published articles were taken, source type was considered journal, and language of publication was considered English only. The papers beyond filter criteria were excluded, which resulted into 348 articles, which were considered for Bibliometric analysis as discussed in Table 3.

3.3 Bibliometric analysis (Biblioshiny Package and VOSviewer Program)

Bibliometric programs i.e. Gephi, Leximancer, and VOSviewer (Kraus et al., 2022) facilitate the exploration of published documents in a practical method, this is the reason for increasing concern in bibliometric analysis in recently (Donthu et al., 2021). Biblioshiny for bibliometrics discovered by "Massimo Aria" of "University of Naple Federico" (Sreenivasan & Suresh, 2022). Under the current study, Biblioshiny package by R Software and VOSviewer program were used. This research used the extracted CSV file from the Scopus database for analysis to recognize the prominent themes in the extracted data by using clustering method along with various maps, developed for more understanding.

For integrating bibliographic data, conducting "bibliometric analysis" and creating a data matrix for "summary of bibliometric data", "yearly publication progress", "productive authors", "productive country and institute", "Three-Field Analysis on IRT (Author's compilation, citation pattern of top journals" Biblioshiny package was applied. "Key word co-occurrence", "Thematic map analysis", "citation and co-citation analysis" and "clustering" VOSviewer program was utilized. A summary of bibliographic data on IRT is described in Table4.

IV. ANALYSIS AND RESULTS

4.1 Answer to RQ1

4.1.1 Yearly publication progress

Figure 1 depicts papers extracted from the Scopus database available from 1989 to 2025, which indicates that the IRT had a very little influence till 2010 and grows increasingly afterwards.

COVID-19 pandemic has ushered in a new era of technology, and has become increasingly important in that period to grasp behaviour of people. Also radical progress can be seen in research during 2024, because this theory is getting drive and generating curiosity among the scholars in recent scenario because of technological advancement.

4.1.2 Most productive authors

Figure 2 shows the top ten writers together with their time-series statistics. With thirteen articles between 2013 and 2022, Heidenreich S. was the most productive author. Dhir A. and Kaur P. have eight publications each during the period of 2020 to 2021 and 2020 to 2022 respectively. Laukkanen T. has six publications during 2007 to 2016 but did not publish any article later on. Ray A., Shankar A. and Talwar S. have worked in the concerned domain and are having six publications each.

4.1.3 Most productive country and institute

Figure 3 and figure 4 depicts top ten countries and affiliations. With 166 publications, India ranked first among top 10 nations. India is a developing nation, also working on technological advancement; this may be the reason for more inclination of researchers here towards innovation resistance writing.

The next two countries which followed the rank are China and South Korea having articles mare than 100. This may be because these two countries are advance in technology. Taking into account the organization which has published the most regarding IRT, "Universiti Tunku Abdul Rahman"

and the "UCSI University" are the two institutions that have added to the discipline with the maximum number of publications.

4.1.4 Citation pattern of top journals

Table 5 representing topmost sources in the form of journals along with configuration. This exploration is performed by using R studio. Technological Forecasting and Social Change, followed by Journal of Business Research and Journal of Retailing and Consumer Services are the most productive journal with 784, 940 and 850 citations in the area of IRT.

Figure 5 shows the analysis of three-field plot ("Sankey diagram") that shows the active connections between the crucial items among three elements of the study (sources, keywords, and countries) (Linnenluecke et al., 2020). The left side displays the sources; the middle section displays the most often used keywords of author, and the right hand side shows the utmost contributing writers in field under study. As depicted in Figure 3 the top countries working on IRT are India, China, and Korea. The inter-link among keywords and nations displays that the IRT and innovation resistance are prime focus for publications of nations. The review reveals three repeatedly applied authors' keywords by the topmost nations are Innovation Resistance Theory, innovation resistance and resistance "Frontiers in Psychology", "Computers in Human Behavior", and "Journal of the Business Research" has published major articles in this field.

4.2 Answer to RQ2

4.2.1 Semantic network analysis: Keyword co-occurrence

Table 6 represents most frequently applied keywords of authors, with more than ten occurrences is considered, and a minimum threshold value of five. With a count of 84 occurrences and 63 total link strength "Innovation Resistance" is the maximum used keyword, "Innovation Resistance Theory", "Resistance", and "Consumer Resistance" with total link strength of 57, 37, and 27, respectively come later.

Figure 6 presents graphic depiction of keywords that shows several clusters. Employment of keywords together is demonstrated by the interconnected nodes in the study. It can be pragmatic that innovation resistance keywords are strongly connected with consumer resistance and consumers purchase intention. An intersection conception of keywords co-occurrence was established by using VOSviewer.

4.2.2 Citation network analysis: Themes

Conceptual and functional structure of the work is represented by thematic analysis of articles (Agrawal et al., 2023). Figure 7 elucidates the thematic plot, which is having four parts. The right hand side down corner section is called as "Basic theme". This shows extremely significant but not explored plentiful domain (Panda et al., 2024). In figure basic themes included "IRT" and "TAM", which are the theories applied in the domain of innovation resistance. Also "resistance", "Covid-19" and "fintech" are the other terminology present in first quarter of and active innovation resistance, higher and new product adoption. In the left side top quarter represents "Niche". The following quadrant in the upper right angle is called "motor theme". The keywords in the theme are passive themes, it represents where efforts need to be made in future. This quadrant represents "Innovation resistance", which is being explored in the current paper and the other themes are adoption, purchase intention, risk barrier and sharing economy. The last quadrant is labeled as "emerging or declining theme" rather too many work has not been done, therefore future scholars can work upon it.

4.2.3 Trending topics citation network analysis: Trending topics

This part reflects the research analysis of trending topics around IRT considering the time under study (Figure 8). Consumer behavior and internet was the prime concern initially. From 2016 onwards, the IRT research shifted to internet banking, mobile banking, and mobile commerce. From 2019 onwards, documents started discussing adoption, resistance, innovation adoption and passive innovation resistance, barriers, consumer resistance. Recent trend is of artificial intelligence, privacy concerns, technology adoption and IRT.

4.2.4 Citation and co-citation analysis

This analysis supports to envision and build up the intellectual structure between sources, articles or authors in an investigation area (Ki et al., 2021) and measures the combined effects of articles (Agrawal et al., 2023). Co-citation amid two articles occur when other article cite both articles (Boyack & Klavans, 2010).Current study has visualized the citation and co-citation with the help of VOSviewer program on extracted database. Figure 9 represents the citation analysis network of the 32 articles.

Figure 10 depicts the co-citation plot which holds the nodes and the association connecting it. The detachment amongst nodes signifies the closeness (Panda, et al., 2024). The articles having at least 10 citations in the area of innovation resistance are being analyzed. Laukkanen, T. and Dhir, A. were the top cited authors with total 1652 and 1163 number of citations each.

4.3 Answer to RQ3 and RQ4

The present study developed the clusters through the bibliographic coupling of documents, which is done to analyze the pattern of networks based on published article in past (Franceschet, 2009). This analysis is performed via

VOSviewer program. A verge limit of 25 citations of articles is considered as inclusion criteria and the results was 108 documents out of which 20 articles were observed as the major set of linked articles which were utilized for making clusters. Grouping of clusters were made in three shades (blue, red & green) which is elaborated in various sub parts in Figure 11.

Documents' cluster, total link strength and citation with different documents presented under Table 7. Total link strength (TLS) represents the total strength of link of articles with other articles (Agrawal et al., 2023). The main purpose of cluster analysis is to find futuristic research propositions along with providing researchers a direction to write for educational community.

Cluster one, in red color, consist of nine documents. Baccarella et al. (2019) looked at factors that influence consumers' adoption of autonomous technology in relation to self-driving automobiles. The study confirmed that behavioral intention to embrace self-driving automobiles was positively impacted by perceived utility. The findings also implied that those who had unfavorable opinion regarding technology were worried that they would not be able to use the new tools. Huang et al. (2021) defined consumer innovation resistance and advancing theoretical growth in the field of marketing. The major cause of innovation rejection was thought to be active innovation resistance and findings of Joachim et al. (2018) also showed that the impact of psychological and functional obstacles on adoption intention varies based on whether a new product or service was examined.

Mani & Chouk, (2018) explained why consumers were resistant to smart services by combining psychological, individual, and functional obstacles. Matsuo et al. (2018) examined how experiences moderate the link between social influence and innovation resistance and findings showed that whereas social impact significantly increased the innovation resistance of seasoned customers, it immediately decreased that of inexperienced ones. Migliore et al. (2022) discussed the disparity in the adoption of mobile payment system between China and Italy; the behavior of the Chinese and Italian respondents differs because of importance of social influence in cultures like.

Proposition1. To analyze consumer resistance self-driving automobiles by examining psychological, individual, and functional barriers and identifying strategies to enhance acceptance of autonomous technology.

Proposition2. How does the current state of the art in consumer innovation resistance literature contribute to advancing theoretical growth in marketing, and what new frameworks or perspectives can further enhance our understanding of consumer resistance to emerging technologies?

Proposition3. What effects can consumer experiences have on moderating the link between innovation resistance and social influence, and what does this mean for removing obstacles to technology adoption?

Cluster second (green colour) having seven articles. Article by Abbas et al. (2017) measures customers' aversion to cellphones to investigate their resistance to innovation and in the research framework the qualities of customers (motivation, self-efficacy, negative emotion, and attitude towards the current product) and innovation (relative advantage, perceived risk, complexity, social impact, and price) were included. Laukkanen et al. (2008) categorized three groups of internet banking non-adopters, namely postponers, opponents and rejectors. Compared to the opponents, the rejectors' opposition was far more varied and fierce, whereas the postponers' resistance was little.

Laukkanen (2016) examined customers' demographics (gender, age, and income) along with adoption barriers (usage, value, risk, tradition, and image) taken from theory to see the relation among adoption and rejection choices related to internet and m-banking of users. Value barriers were the biggest deterrents to the adoption of online and mobile banking, and decisions to accept or reject are highly predicted by age and gender. Study of Sivathanu (2018) was significant because it investigated experimentally how behavioral intention (BI) to usage along with innovation resistance (IR) affected the actual usage of digital payment systems in India during demonetization era.

Proposition 4. What types of innovation resistance are exhibited by the various categories of internet banking non-adopters rejectors, opponents, and postponers and what specific tactics might promote their uptake of digital banking services?

Proposition 5. How do gender, age, and income, along with adoption barriers—usage, value, risk, tradition, and image impact consumer decisions on Internet and mobile banking? Identifying these influences can guide targeted strategies to reduce resistance and enhance adoption rates.

Blue colour represents cluster three (figure 11) which includes four articles. Heidenreich et al. (2016) delivered first empirical evidence that both types of resistance (Active & Passive) were strong inhibitors for new product adoption and results indicated that customers, who demonstrate high levels of situational or cognitive passive resistance, had equal negative consequences, whereas consumers, who exhibit high levels of both dimensions, were most likely to be resistant to innovations. Talke & Heidenreich, (2014) proposed a distinction between active and passive opposition to innovation; first is an attitude that arises after a negative new product assessment, whereas second is the consequence of a consumer's general tendency to oppose innovations before the evaluation of new product.

Proposition6. How does recognizing both passive and active innovation resistance deepen our understanding of consumer new product adoption?

Proposition7. What specific tactics can successfully overcome these obstacles, and how do both active and passive opposition impede the acceptance of innovative products?

V. IMPLICATIONS

5.1 Theoretical Implications

This research delivers plentiful theoretical implications with the purpose of progression of investigation related to consumer resistance to innovation. Current work is of review nature therefore it delivers academicians with a holistic overview of available literary data concerning innovation resistance by explaining the ongoing scenario and frontiers of research. Hence, scholars in future can rely upon this study to understand the current trends related to theme understudy. This work presented various network plots, citation as well as co-citation analysis by applying scientific mapping and the results revealed topmost contributors, sources and nations which are having highest publications.

This article is related to bibliographic coupling which was used for cluster formation which revealed core themes and futuristic propositions revolving around innovation resistance that can work upon by forthcoming researchers. Lastly, a research model is presented by applying triangulation approach that can also be undertaken in future. Hence, it can be said that current article contribute to the prevailing literature and research work can be done on the basis of suggestion given under this article.

5.2 Managerial Implications

If we talk about management aspect, then it should contribute towards customer satisfaction and profit maximization which is fulfilled by study of passive resistant behavior because understanding of such behavior assists businesses to plan and create innovative products for market growth. Since, the main focus of literature revolves around mobile and internet banking; therefore it provides a base for resistance in financial technology adoption which can be used by managers to avoid such issues in future. Lastly, the major benefit for managers is, they get a wide view regarding resistant behavior of people related to various innovative technologies and by considering the reasons for resistance they can tackle it in future.

To dispel misunderstandings and foster trust, open and clear communication is crucial. This may be accomplished through educational initiatives, practical demonstrations, and early adopter testimonies. Mangers could categorize customers according to their degrees of resistance, such as risk-averse users, tradition-driven people, or doubters, and create engagement methods that are specifically suited to their needs. Businesses must place a high priority on strong data privacy, regulatory compliance, and risk guarantees like warranties and safety certificates in order to allay trust and security worries. Through proactive resolution of these obstacles, companies may convert opposition into acceptance, creating a more seamless route for the adoption of innovations and market penetration.

VI. CONCLUSION AND FUTURE RESEARCH AGENDA

On the roots of clusters and relationship among them, a future framework of research is discovered and presented under this section. This is enabled in terms of unique and a comprehensive research model by applying triangulation method. The approach of triangulation presents four kinds of triangulation that contribute to verification and validation of qualitative analysis (Patton, 1999), out of which three kinds used here under this paper naming methods triangulation to check the consistency of findings, examining the consistency of different data sources (journals) within the same method, that is, triangulation of sources and last used is

analyst triangulation which was performed by multiple analysts to review findings. On the basis of these aspects of triangulation approach the model is constructed and presented in figure 12.

To evaluate the collaboration between consumer behavior and innovation resistance with special reference to IRT, first of all dimension where IRT can be utilized is discussed in the model. As expressed in the figure IRT having very vast dimension considering from marketing, finance, tourism, block chain, AI, banking, green products usage, drone and many more. The next step is to examine the role of prerequisites that bifurcated into three shelters viz., i) Characteristics of innovation which includes usage barrier, privacy concern, innovation intensity, perceived risk, image barrier, tradition, inertia and product knowledge, ii) consumer characteristics including technophobia, product knowledge, digital self-efficacy, consciousness & concern which represents individual feature of human that cause variation in behavior and leads to resistance, iii) Social and economic factors that occurred because of social belongingness and involvement of finance such as social influence, skepticism and social dependency which can be the contributors of innovation resistance.

In last outcomes are portrayed that might occur due to prerequisites of innovation resistance and leads to resistance, postponement, opposition, intention to purchase and recommend. This holistic model can be utilized to determine reasons and outcome in different domains of innovation resistance where main focus is on IRT.

After considering the literature it can be concluded that the combination of theory specifically IRT which is related to technology with humanities as subject itself is very rare. When deep dive taken into literature although all domains are not worked in-depth but still virtual tourism, technology

in services, mobile commerce and financial services, e-learning, e-waste management are least worked and can be considered in future. If future direction is given about prerequisites than it was found in literature that except IRT variables there were no variables as whole studied in past record and for that purpose under this article variables with construct is demonstrated as prerequisites for future research. Lastly literature revealed that intention to purchase or use behavior was the ultimate result which was focused so far, therefore, in future researchers can focus on intention to recommend, opposition, postponement along with resistance as final outcome of research work.

This paper presents a bibliometric analysis along with future research agenda using triangulation method on 348 research articles extracted from Scopus database. The study represented comprehensive analysis of publications, authors, sources, organizations (universities), countries, co-citation and cluster analysis considering consumer behavior towards technology with special reference to IRT by using scientometric data through R programming and VOSviewer. Based on cluster analysis, three emerging research themes was identified and future research propositions in the particular research themes was purposed, that can be used in future. Holistic model of domains, prerequisites and outcomes was also presented for future researchers. In future research, data from sources other than Scopus along with emerging keywords can be used for further research.

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Figures

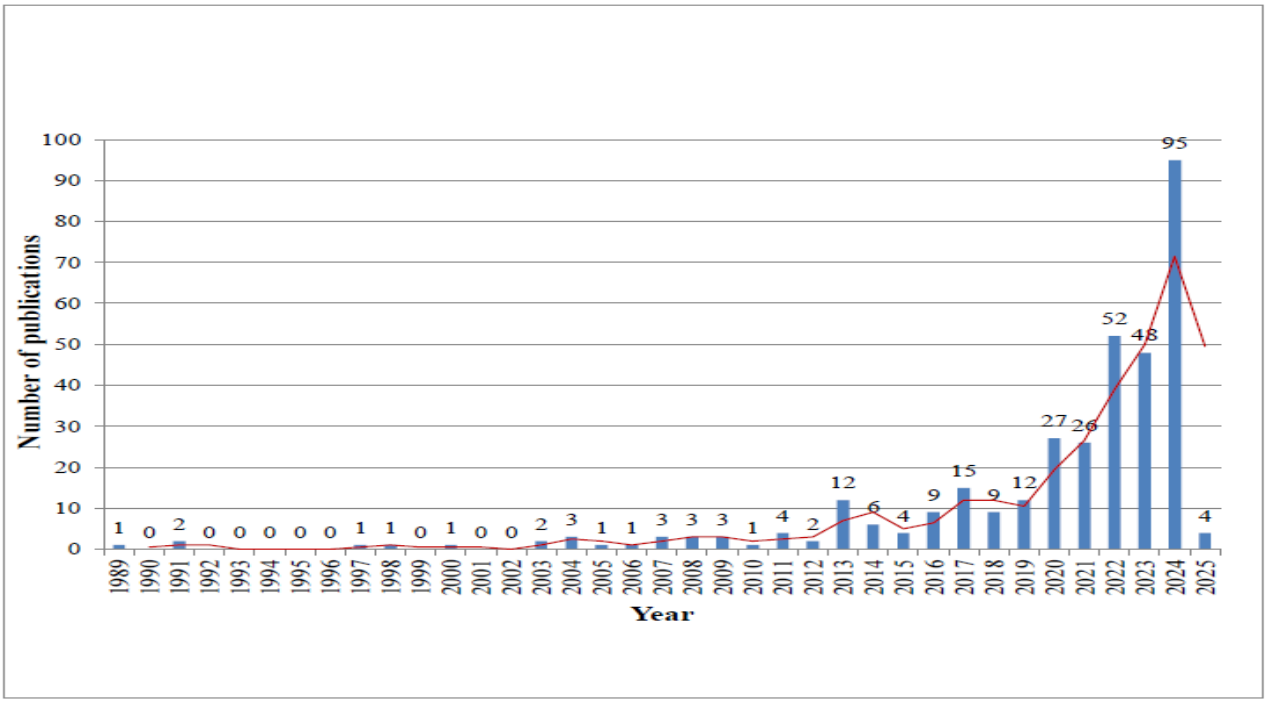

Fig 1. Annual scientific production in happiness economics research (Authors compilation from Bibliometrix package and chart created in MS excel).

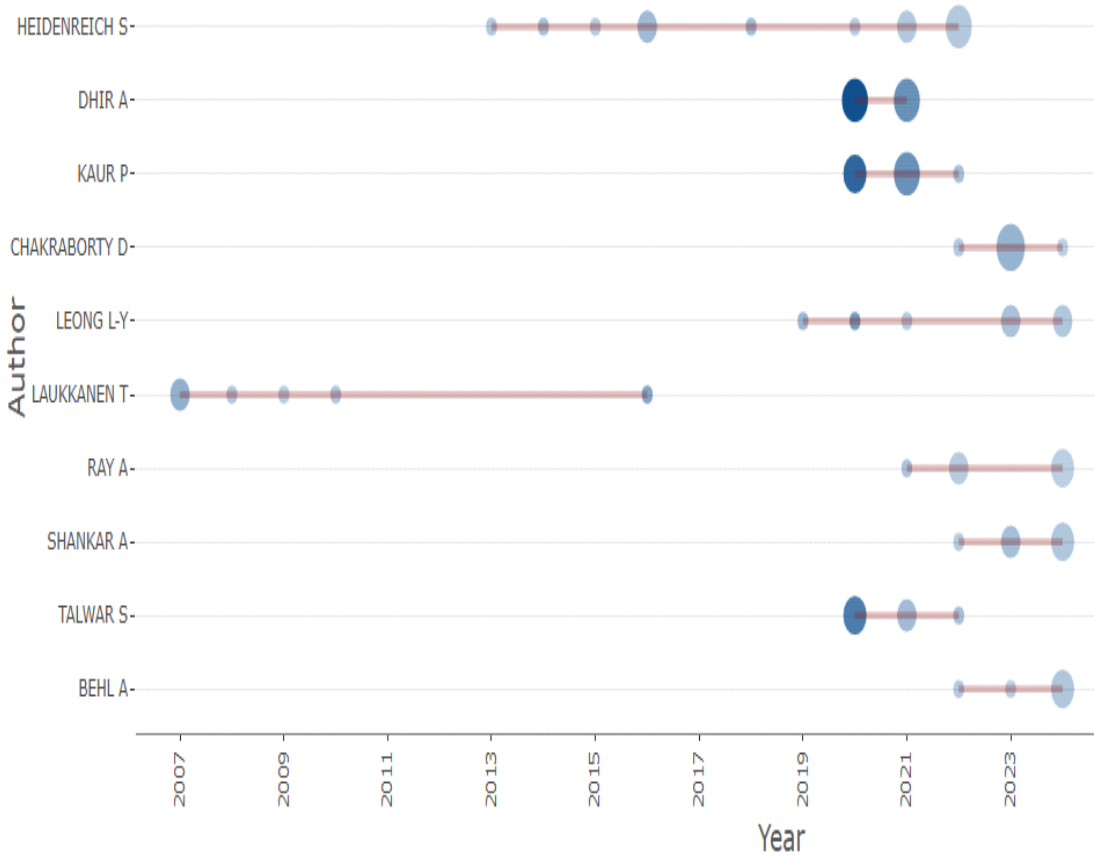

Fig 2. Top authors' productivity (Authors compilation from Bibliometrix package).

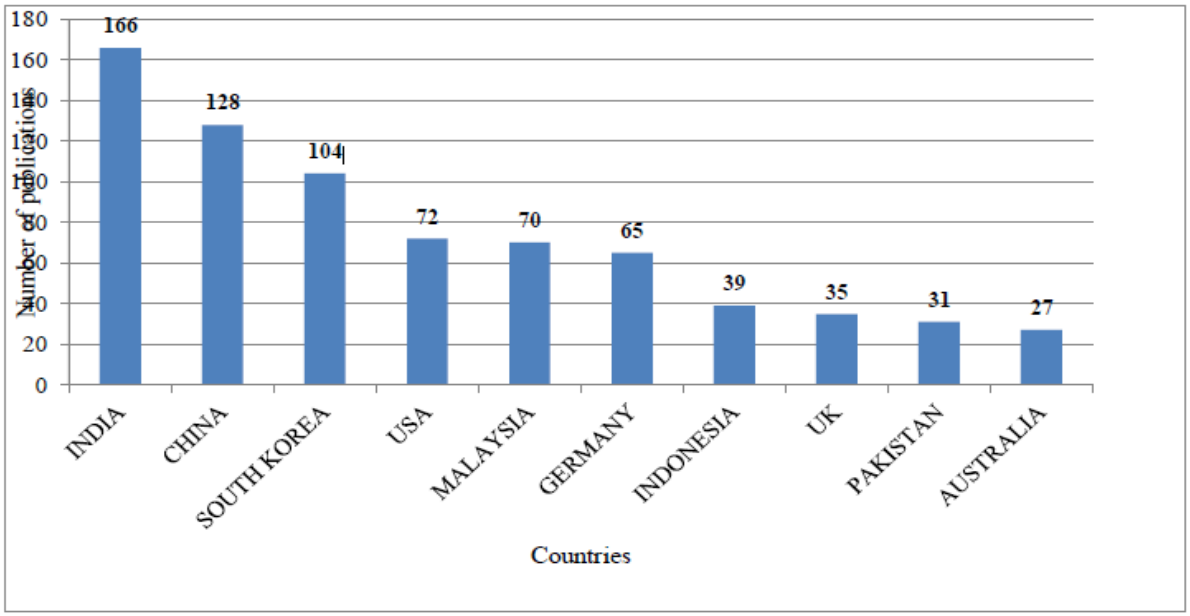

Fig 3. Top ten contributing countries (Authors compilation from Bibliometrix package)

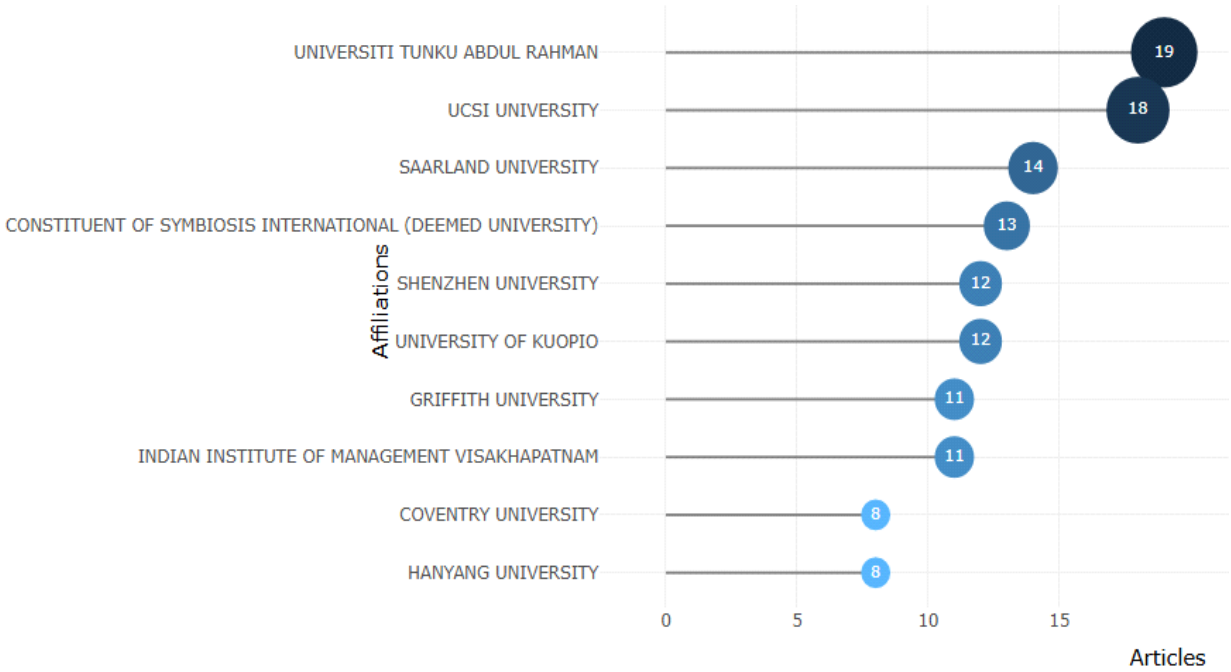

Fig 4. Top ten contributing affiliation (Authors compilation from Bibliometrix package).

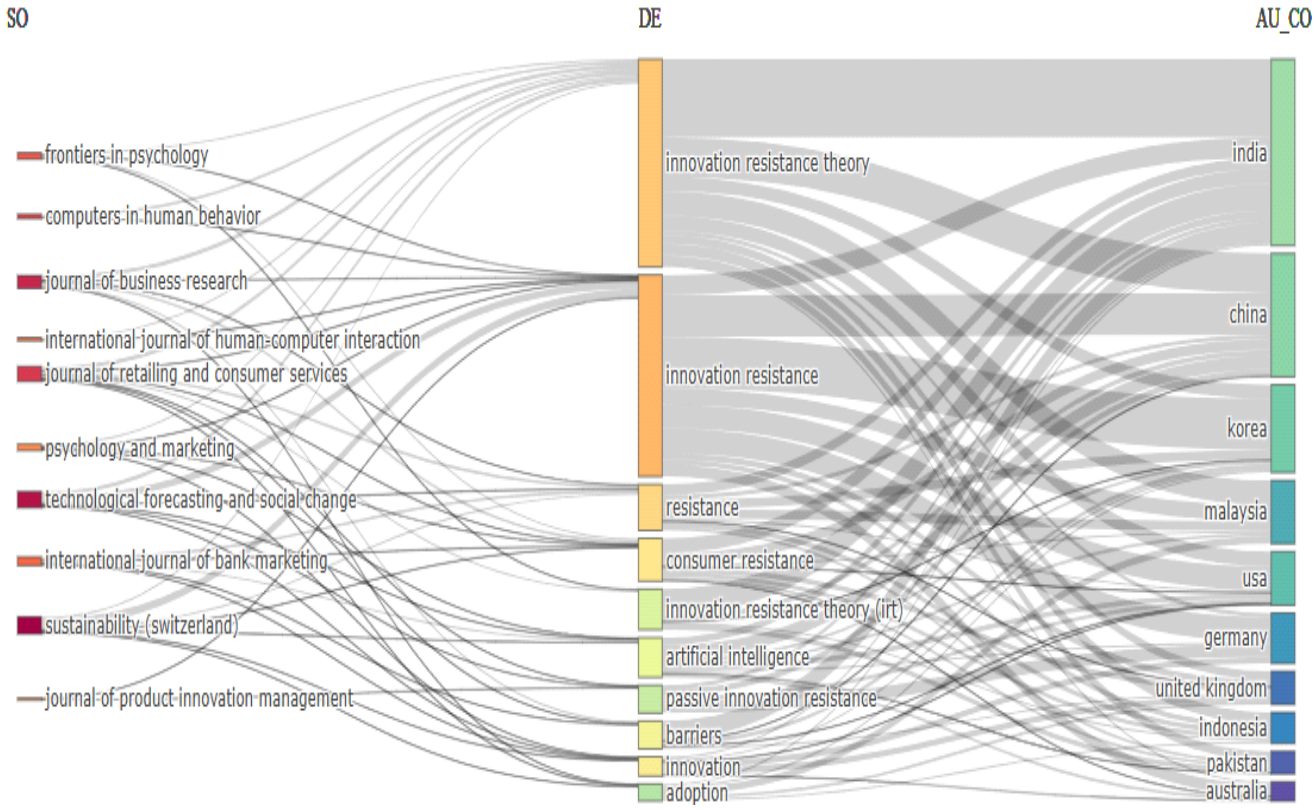

Fig 5. Three-Field Analysis on Innovation resistance (Author's compilation using Bibliometrix R package).

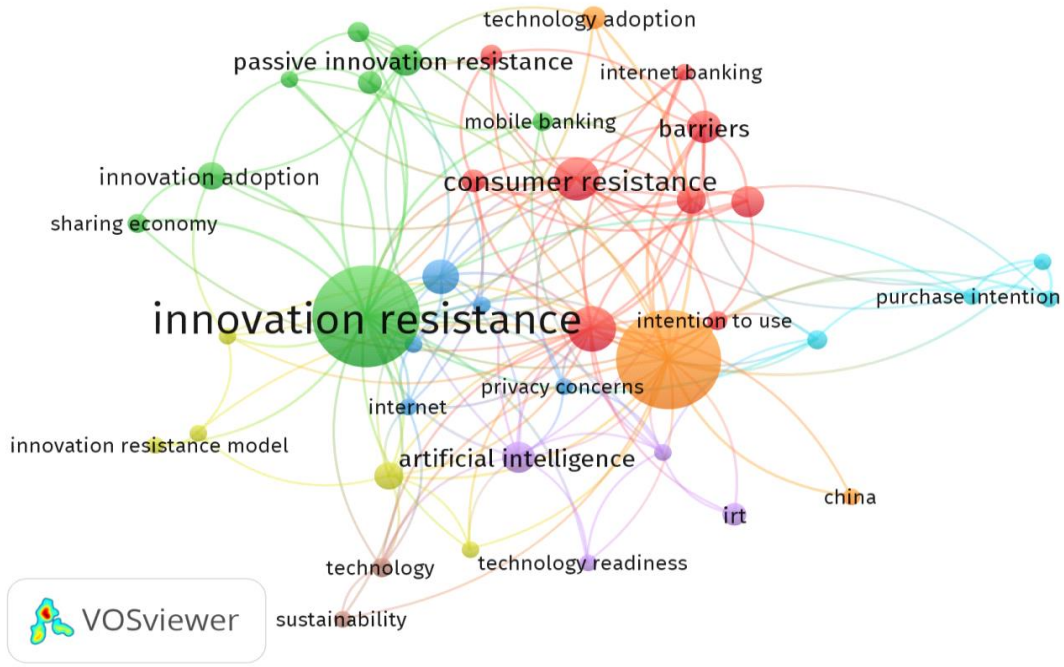

Fig 6. Co-occurrence of Keywords in IRT (Authors compilation using VOSviewer).

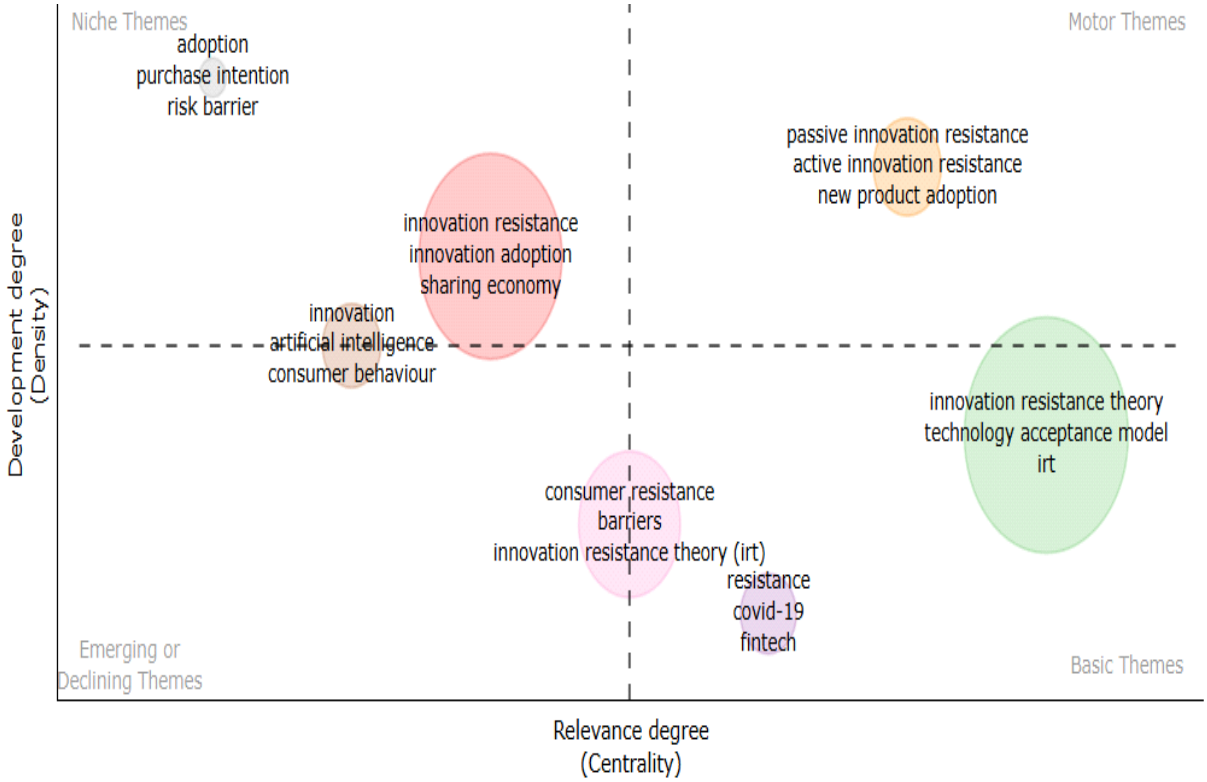

Fig 7. Thematic map analysis (Authors compilation using Bibliometrix package)

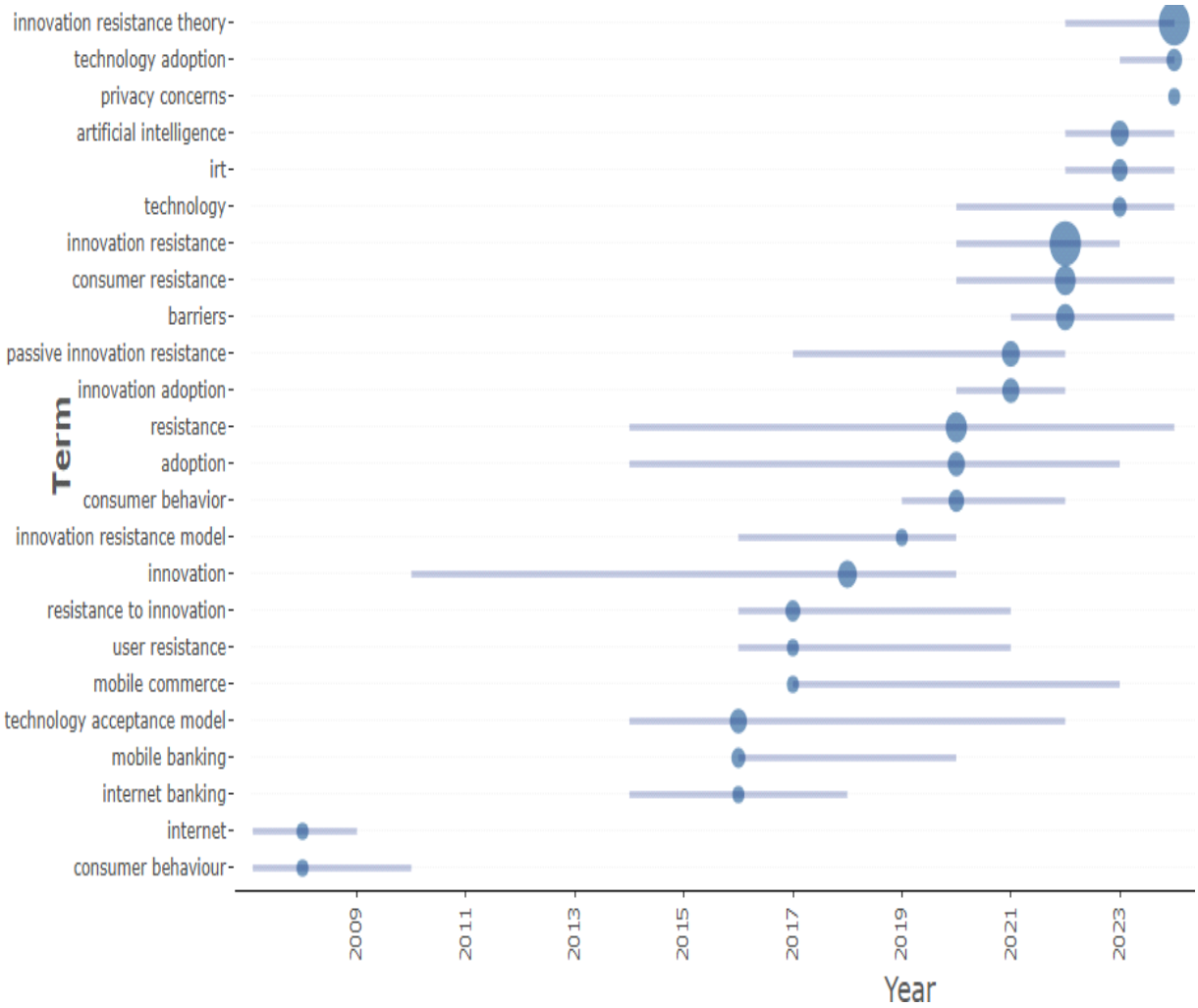

Fig 8. Trending topics from 2008 to 2024 (Authors compilation using Bibliometrix package).

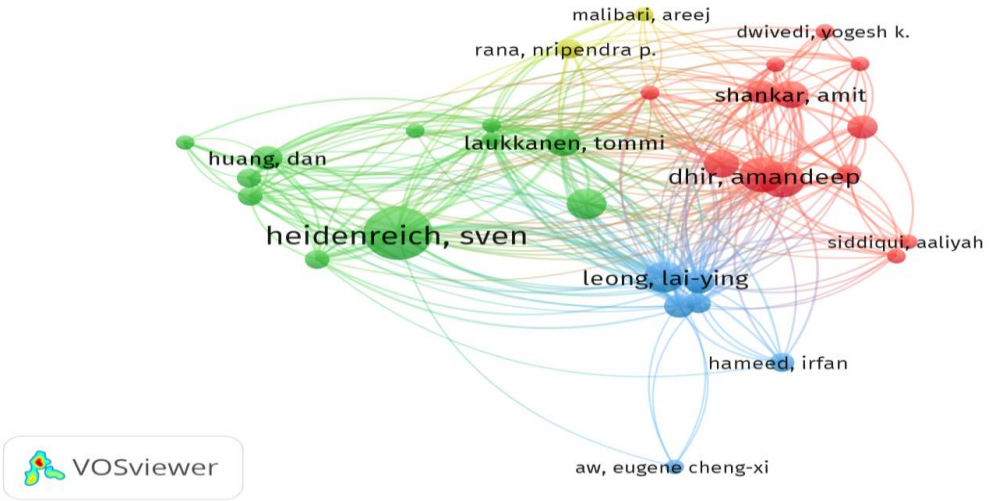

Fig 9. Citation analysis (Authors compilation using VOS Viewer)

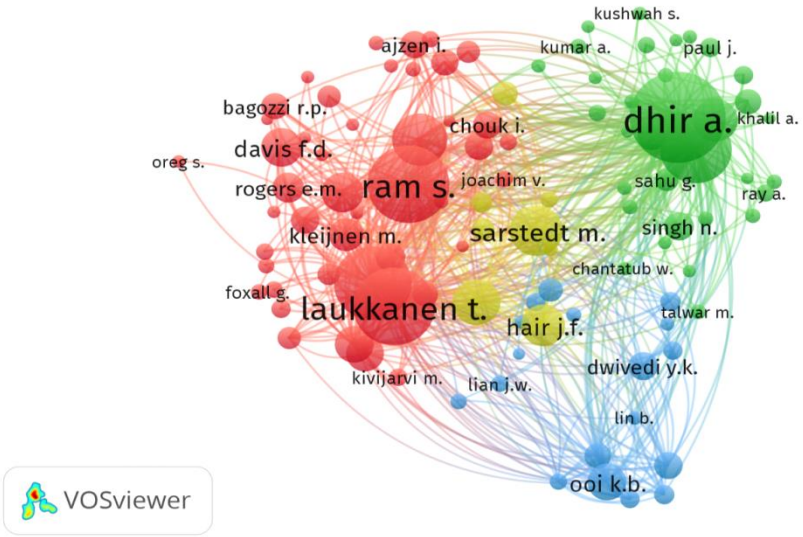

Fig 10. Co-citation analysis (Authors compilation using VOSviewer).

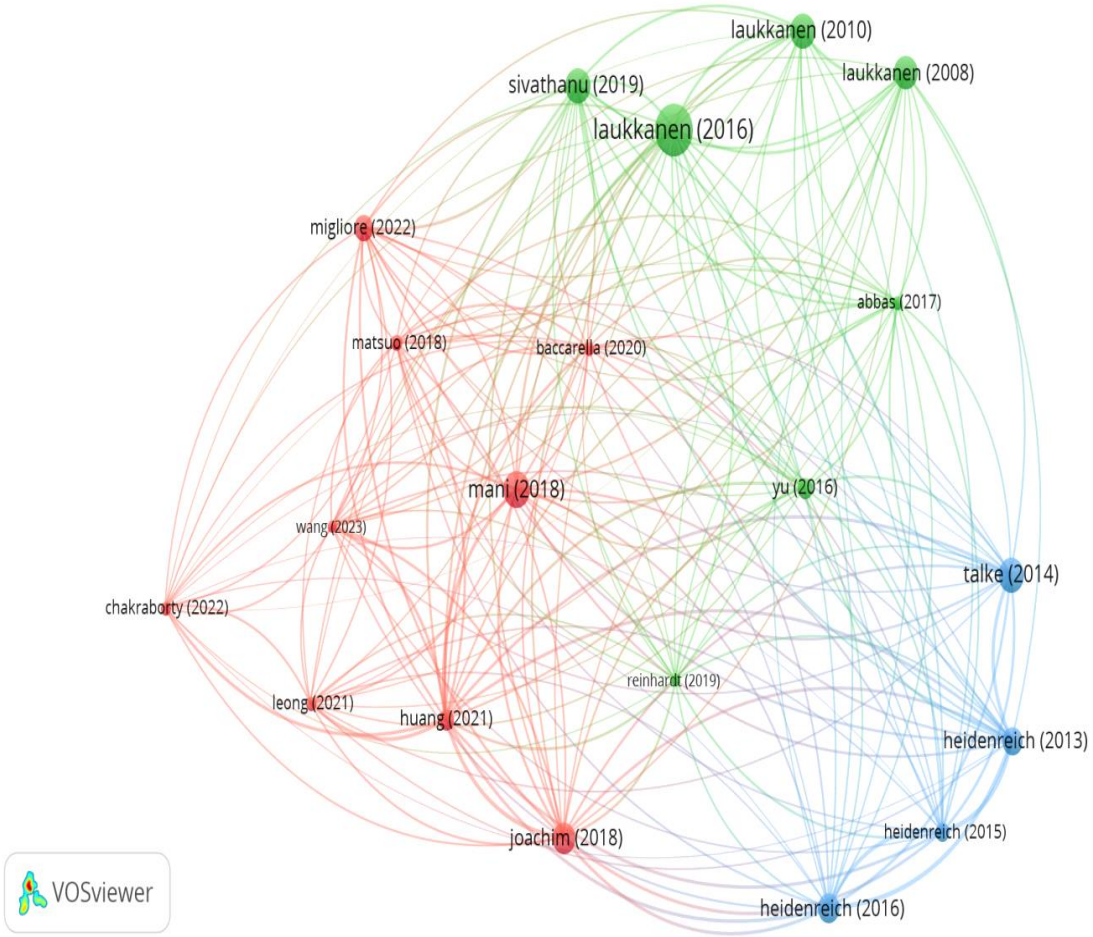

Fig 11. Bibliographic coupling network (Authors compilation using VOS Viewer).

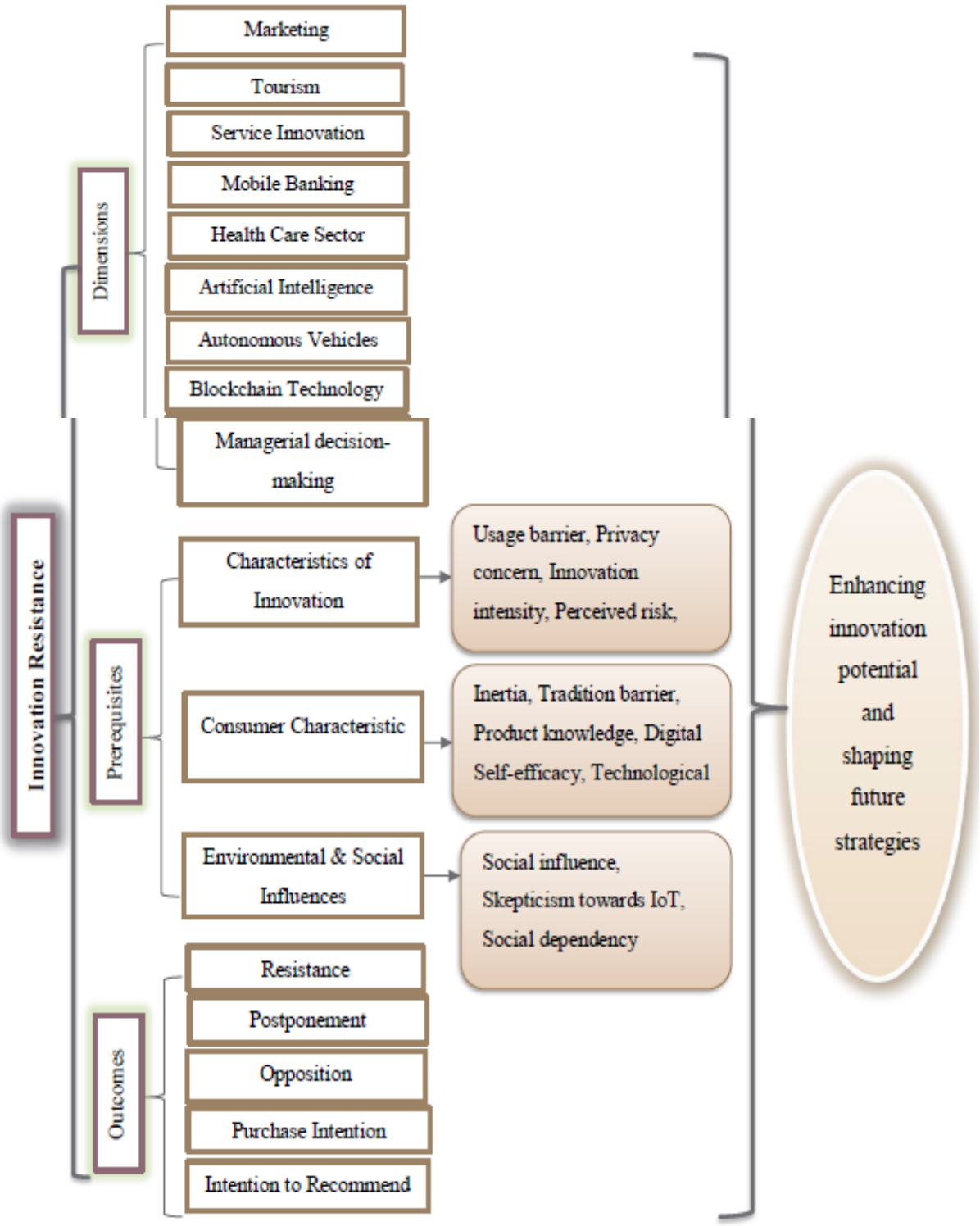

Fig 12. Model for future research studies

Table 1. Customer perceived obstacles

Functional barriers	**Barriers/ Dimensions**	**Definition/ Characteristics**	**References**
	Usage	"Usage barrier is related to innovation's incompatibility with consumer's practices or habits". "In the context of technological innovations this can be seen to relate to the usability and ease-of use of the innovation". "It mainly implies the role of functional usability of an innovation". "This represents the limits imposed by apps while booking during peak seasons, holidays, and weekends". "The resistance to new inventions may be due to conflict with routine exercises and plans already in place".	Kuisma et al. (2007, p.3); Laukkanen et al. (2009, p.2); Laukkanen (2010, p. 5); Talwar et al. (2020, p. 2); Hossain (2023, p.2)
	Risk	"Uncertainty is inherent in innovations, and therefore, they always entail at least some degree of perceived risk". "Risk barriers are associated with consumers' feeling of uncertainty and risk involving an innovation". "The resistance caused by uncertainties linked with any novelty is stated to be a risk barrier". "It includes four risk; personal risk barriers are those that may actively harm a user, functional risk barriers emerge if a customer fears that the product or service will not be reliable, economic risk barriers manifest from fears of excessive costs associated with the innovation, and social risk barriers materialize when consumers believe that their social group will not approve of their adoption".	Kuisma et al. (2007, p.3); Huynh & Gurtner, (2023, p.3); Hossain (2023, p.2); Babu et al. (2024, p. 2)
	Value	"It is related to the benefits offered by the Online Travel Agencies (OTAs)". "Users, who do not experience the best price and good performance while using the system, will not see value in using such systems".	Talwar et al. (2020, p.4); Raj et al. (2023, p. 5)
Psychological barriers	Tradition	"This barrier mainly implies the change an innovation may cause in daily routines". "If routines are important to a consumer, the tradition barrier will most likely be high". "When technology departs from the existing traditions of customers, it will result in a resistance impact". "Individuals get used to a particular tradition once they practice and follow it for a long time".	Kuisma et al. (2007, p.3); Laukkanen et al. (2007, p.3); Laukkanen et al. (2009, p.3); Hossain (2023, p.3); Mahmud et al. (2023, p.6)
	Image	"It is associated with the origin of an innovation such as product class, industry or the name of the company and perceived negative image may also be a cause for resistance".	Kuisma et al. (2007, p.3); Laukkanen et al. (2007, p.3); Laukkanen et al. (2009, p.3)

		"It comes into play since innovations attain a certain identity from their origins like the product category to which they belong, the country of origin or brand". "It can be considered as the image of Internet banking services in general".	

Table 2. Research Questions (RQ)

Number	Research questions	Justification
RQ1	What is the publication trend for research on IRT in consumer behavior towards technology? Which countries, institutions, sources and authors are the top contributors to research on IRT in consumer behavior towards technology?	To analyze the publication trends **in** IRT in consumer behavior towards technology, key contributors, institutions, and leading sources were identified. Understanding of these trends provides insights into the growth, impact, and emerging themes in IRT research.
RQ2	What are the current research trends in the field of IRT in consumer behavior towards technology?	To identify and understand current trends insights into why consumers resist new technologies, evolving resistance factors, and strategies to overcome them were provided to guide future research and practical applications.
RQ3	What are the emerging research themes and topics in IRT related to consumer behavior towards technology?	To get understanding of emerging areas, it is crucial for developing effective adoption strategies, refining theoretical frameworks, and addressing consumer concerns in a rapidly changing tech landscape**.**
RQ4	What is the future research perspectives in the area of IRT related to consumer behavior towards technology?	To identify future directions and gaps in IRT related to consumer behavior towards technology. Understanding of these perspectives helps advance theoretical frameworks, explore new resistance factors, and develop strategies for overcoming consumer reluctance in adopting emerging technologies.

Table 3. Reference selection protocol

Keyword protocol query	**Number of hits**
Keyword Protocol applied in Scopus ["Innovation resistance theory" OR "innovation resistance" OR ("consumer resistance" AND "technology" OR "adoption" OR "technology adoption" OR "innovation adoption" OR "information system")]	508
TITLE-ABS-KEY (LIMIT-TO (SUBJAREA , "COMP") OR LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "PSYC") OR LIMIT-TO (SUBJAREA , "ARTS") OR LIMIT-TO (SUBJAREA , "ECON"))	447
TITLE-ABS-KEY (LIMIT-TO (DOCTYPE , "ar"))	352
TITLE-ABS-KEY (LIMIT-TO (SRCTYPE , "j"))	351
TITLE-ABS-KEY (LIMIT-TO (LANGUAGE , "English"))	**348**

Table 4. Summary of bibliometric data

Details	**Findings**
Timespan	1989:2025
Sources (Journals)	205
Documents	348

Annual Growth Rate (%)	3.93
Document Average Age	5.03
Average citations per document	36.53
References	23297
Document Contents	
Keywords Plus (ID)	971
Author's Keywords (DE)	1115
Authors Details	
Authors	835
Authors of single-authored docs	33
Authors collaboration	
Single-authored docs	33
Co-Authors per Doc	3.04
International co-authorships (%)	34.2
Document Types	
Article	348

Table 5. Top 10 sources that published articles in the field of IRT research.

Element	h_index	g_index	m_index	TC	NP	PY_start
Technological Forecasting and Social Change	11	14	0.5	784	14	2004
Journal of Business Research	9	11	0.6	940	11	2011
Journal of Retailing And Consumer Services	9	11	1.125	850	11	2018
Sustainability (Switzerland)	6	13	0.667	183	14	2017
Computers in Human Behavior	5	6	0.385	682	6	2013
International Journal of Bank Marketing	5	6	0.278	714	6	2008
International Journal of Information Management	4	4	0.211	879	4	2007
Journal of Product Innovation Management	4	5	0.333	645	5	2014
Asia Pacific Journal of Marketing and Logistics	3	3	0.75	37	3	2022
Frontiers in Psychology	3	6	0.75	144	6	2022

Note: NP: Number of publications, TC: Total citations, PY_start: Publication year. Source: Author's compilation using Bibliometrix R package

Table 6. Top 12 keywords used in field of innovation resistance theory.

Keywords	Occurrences	Total Link Strength
Innovation Resistance	84	63
Innovation Resistance Theory	82	57
Resistance	24	37
Consumer Resistance	22	27
Innovation	16	15
Barriers	14	21
Artificial Intelligence	13	18
Passive Innovation Resistance	13	11
Innovation Resistance Theory(IRT)	13	10
Adoption	11	20
Technology Acceptance Model	11	12
Innovation Adoption	11	11

Table 7. Intellectual configuration via bibliographic coupling

Cluster No.	Name	Title of article	Authors	Citation	TLC
1	Barriers to Innovation and Technology Adoption	"Investigating consumer acceptance of autonomous technologies: the case of self-driving automobiles"	Baccarella et al. (2019)	37	185
		"Fitness Apps's purchase behaviour: Amalgamation of Stimulus-Organism-Behaviour-Consequence framework (S–O–B–C) and the IRT"	Chakraborty et al. (2022)	37	121
		"Advances in consumer innovation resistance research: A review and research agenda"	Huang et al. (2021)	78	404
		"Active innovation resistance: An empirical study on functional and psychological barriers to innovation adoption in different contexts"	Joachim et al. (2018)	168	298
		"A meta-analysis of consumer innovation resistance: is there a cultural invariance?"	Leong et al. (2021)	35	167
		"Consumer resistance to innovation in services: Challenges and barriers in the internet of things era"	Mani & Chouk (2018)	243	262
		"Social influence on innovation resistance in internet banking services"	Matsuo et al. (2018)	43	179
		"Antecedents to the adoption of mobile payment in China and Italy: An integration of UTAUT2 and IRT"	Migliore et al. (2022)	121	195
		"Consumer resistance to service robots at the hotel front desk: A mixed-methods research"	Wang et al. (2023)	29	193
2	Breaking Barriers in Digital Finance Adoption	"The effect of innovation and consumer related factors on consumer resistance to innovation"	Abbas et al. (2017)	35	182
		"Consumer resistance to internet banking: postponers, opponents and rejectors"	Laukkanen et al. (2008)	196	178
		"The role of information in mobile banking resistance"	Laukkanen & Kiviniemi, (2010)	209	199
		"Consumer adoption versus rejection decisions in seemingly similar service innovations: The case of the internet and mobile banking"	Laukkanen (2016)	481	243
		"Overcoming consumer resistance to innovations – an analysis of adoption triggers"	Reinhardt et al. (2019)	28	175
		"Adoption of digital payment systems in the era of demonetization in India: An empirical study"	Sivathanu (2018)	221	233
		"Consumers' resistance to using mobile banking: Evidence from Thailand and Taiwan"	Yu & Chantatub, (2016)	81	186
3	The Paradox of Innovation Resistance	"Why innovations fail - The case of passive and active innovation resistance"	Heidenreich & Spieth (2013)	141	318
		"Passive innovation resistance: The curse of innovation? Investigating consequences for innovative consumer behavior"	Heidenreich (2015)	71	290
		"Satisfied and unwilling: Exploring cognitive and situational resistance to innovations"	Heidenreich et al. (2016)	159	292
		"How to overcome pro-change bias: Incorporating passive and active innovation resistance in innovation decision models"	Talke & Heidenreich, (2014)	223	244