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significance of perceived value, perceived risk, and innovation resilience in the acceptance of robo-advisory services among consumers. The study's findings provide valuable insights for financial institutions and policymakers in the development and positioning of robo-advisory services.

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Abstract: This research aims to have a more holistic perspective on how digital technologies are transforming business models. The study has further explored industry-based factors such as digital platforms, customer knowledge, the emergence of online entrepreneurship, and digital innovation. Furthermore, the role of digital platforms and customer knowledge have been explored in the digitalization of business models which is impacting the dynamics of an online entrepreneur. The quantitative research methodology has been used to research while using questionnaires as a data collection instrument and convenience sampling have been used as a sampling technique. The data (n=200) has been collected from various individuals including entrepreneurs and freelancers from different companies, startups, and online marketplaces for freelance services. Through the statistical analysis, results have been obtained and all four hypotheses proposed in the research have been accepted. It has been found that digital platforms and customer knowledge provide entrepreneurs with a perfect fit for conducting their business in an online space. The research is of great significance as it provides the guiding platform for online entrepreneurs who want to start a successful venture through the most relevant customer knowledge and appropriate digital platforms. Furthermore, the disparity in research conducted on online entrepreneurship has contributed to further advances in academia as it has examined the relationship of online entrepreneurship with multiple variables.

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Abstract: The Metaverse is a virtual universe that combines the physical world and the digital world. People can socialize, play games, and even shop with avatars created in this virtual environment. Metaverse, growing very fast regarding virtual goods, is both a profitable and risky area for investors. To enter the Metaverse for investment purposes, it is necessary to conduct comprehensive research and gather information. In this direction, this study aims to investigate the effects of source credibility, quality of argument, and the perceived risk on the purchase intention obtained by the investors about the Metaverse world from the point of view information adoption model. For this research, data were collected online from 495 consumers interested in Metaverse investment. The structural equation model was used to test the proposed model. The findings obtained in this study showed that source credibility and quality of argument affect the purchase intention positively, while the perceived risk affects the purchase intention negatively.

Bruno Azinheira, Mário Antunes, Marisa Maximiano, Ricardo Gomes	INFORMATION SECURITY AND CYBERSECURITY ASSESSMENT IN SME – AN IMPLEMENTATION METHODOLOGY 78
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Abstract: Digitalisation and Industry 4.0 are emerging and challenging topics for Small and Medium-sized Enterprises (SME). The overall benefits for these companies are evident as their business processes become more streamlined with significant improvements in internationalisation, penetration in global markets, and confidence in new business partners. However, there are increasing concerns regarding information security and cybersecurity in SME, namely those related to adopting international best practices and compliance regulations. This study describes a comprehensive framework and a methodology for mapping the roadmap of minimum cybersecurity capabilities produced by the Portuguese Center for Cybersecurity. The proposed mapping methodology aims to bridge the gap between information security and business processes in SME, resulting in a management tool to assess the cybersecurity risk and competitiveness in global markets. The methodology is geared toward the specific characteristics of SME and how these organisations may assess their cybersecurity and information security risks. The proposed mapping methodology may accommodate other information security and cybersecurity standards, namely NIST cybersecurity framework or ISO 27009 standards, but still, a case study was conducted on the ISO 27001:2013 standard. The resulting correlations between the actions identified in the roadmap and the controls of ISO 27001:2013 standard gave rise to a questionnaire for surveying cybersecurity risks in SME. The rationale of this study is two-fold: from one side, the intrinsic SME's characteristics, namely the size, and the regional and familiar scope, which rise their exposure to cyber threats; on the other side, the lack of expertise and resources to adopt and implement international cybersecurity and information security standards, as they are primarily designed to be applied in larger enterprises rather than SME. The main contribution of this paper is a methodology to combine cybersecurity governance guidelines with formal standards to produce a set of convergence points to be used by SME as a mechanism to facilitate information security and cybersecurity risk assessment.

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Abstract: Foreign Direct Investment (FDI) and remittances remain one of the most important sources of socioeconomic development in the Republic of Kosovo. The purpose of this research is to examine the policy and trends of FDI, remittances, and exports in the Republic of Kosovo, as well as the impact of FDI and remittances on export growth. The results show that Kosovo has an unsatisfactory level of FDI as well as exports, whereas remittances have shown signs of improvement over the years, and the effect of remittances on the growth of exports is acceptable. The ordinary least squares method was used to calculate the effect of the independent variable on the dependent variable, and the level of significance of the hypotheses was determined using the t-test and ANOVA. The highest FDI was in 2011, 384.4 million euros, the highest remittance income was in 2020, 940.4 million euros, and the highest value of exports was in 2020, 474 million euros. Based on the regression analysis of the effects of FDI and remittances on export, the coefficient for FDI is 0.139, and the coefficient for remittances is 0.347, indicating that both coefficients are positive. Kosovo's FDI and export performance are a result of poor economic development and ineffective policies for the promotion of FDI and exports. It is recommended that state policymakers develop more sustainable and effective policies that lead to increased FDI, remittances, and exports. Such policies will assist organizations, businesses, and employees in increasing the level of investment,

remittances, and exports by creating long-term stability for these indicators. Furthermore, a critical evaluation is required in order to increase FDI, remittances, and exports, to create economic stability in terms of FDI, remittances, export, and regional economic development, among other things.

<i>Mohammed Khojah</i>	INFLUENCE OF SOCIAL AND PERSONAL NORMS ON INDIVIDUALS’ PARTICIPATION IN THE SHARING ECONOMY OF A CONSERVATIVE SOCIO-MARKET 117
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Abstract: Sharing economy applications are becoming more popular with the advancements being made in communication tools and means. This study aims to discover the perceptions of people living in a conservative socio-market of ridesharing. Ridesharing is one of the common applications of a sharing economy. In addition, the study used constructs from social exchange theory and the theory of reasoned action. This study employed a questionnaire designed and deployed to collect data from a convenient sample using social media channels. The empirical results show that, except for attitudes and conventions, the constructs had results other than the ones predicted by the theories. The study shows that four constructs, namely conventions, morals, mores and rules, had positive impacts on the intention to work for rideshare companies. Laws, however, were not found to have an impact on intention. The study also found that norms can be viewed as a second-order variable where rules and laws create an impact on conventions, morals and mores. This finding could help practitioners and researchers to decide if there is a need to develop a different version of these theories. Additionally, it could mean that there is a need to further explore the applicability of the norm construct in various contexts.

<i>Phokwane Legodi Cedric, Makhitha Khathutshelo Mercy</i>	THE EFFECTS OF MARKETING COMMUNICATION STRATEGIES ON THE PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES (SMES) IN POLOKWANE 131
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Abstract: Marketing communication is seen as a vital activity for the survival and success of SMEs. The aim of the study was to investigate the impact of marketing communication on the performance of small and medium enterprises (SMEs) in Polokwane, South Africa. SMEs are regarded worldwide as the cornerstone for economic development since they are established to foster any country's economic growth and development. However, SMEs are faced with business marketing problems that lead to their downfall, which should be seriously considered because it adversely affects the positive impacts of the SMEs. The study adopted the survey method, distributing 412 questionnaires to SMEs operating in Polokwane. Sales promotion was found to be the most used form of marketing communication. It was found that there is a positive correlation between marketing communication strategies and the SMEs' performance, and that some marketing communication elements affect sales increase, customer relationships, customer loyalty and profitability.

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EDITORIAL

The **first study by Nguyễn Gia Ninh** examines the critical factors affecting customers' resistance to change from internal combustion engine vehicles (ICEVs) to electric vehicles (EVs), which in turn impacts the purchase intention of customers toward EVs. In doing so, this study emphasizes two antecedents of resistance to change, namely, face consciousness and customer knowledge, which are two essential elements in the Asian context. More importantly, face consciousness is regarded as an important personal characteristic of customers in countries affected by Confucian culture.

Data were collected from 185 respondents in Ho Chi Minh City, Vietnam. An online survey was conducted from May to August 2021 and online questionnaires were sent to respondents from car communities, universities, and companies in Ho Chi Minh City, Vietnam. Ho Chi Minh City is the most populous city in Vietnam, and is also one of the most polluted cities in Vietnam. Participants from car communities are expected to be more interested in new car models and thus tend to purchase electric vehicles in the foreseeable future. SmartPLS, SPSS Macro PROCESS, and AMOS 20.0 were utilized to analyze the models. Specifically, SmartPLS was used to analyze the measurement models and structural model, SPSS Macro Process was used to analyze the mediating effects in the model and AMOS was used to increase the robustness of the analyses.

This study makes contributions to the literature by examining the complex relationships among face consciousness, customer knowledge, resistance to change, willingness to pay, and the purchase intention of consumers for EVs. In doing so, this study seeks to enrich the understanding of the underlying mechanisms through which face consciousness and customer knowledge impact the purchase decisions of customers toward EVs. Also, limited research on these relationships has been conducted in Vietnam, a neighboring country of China that is also affected by Confucian culture.

Face consciousness and customer knowledge were found to be related to purchase intention toward EVs both directly and indirectly through resistance to change and willingness to pay. The study provides firms with valuable solutions that can help increase the purchase rates of EVs. Manufacturing firms are encouraged to highlight the symbolic values of EVs instead of reducing prices. Advertising campaigns should also be conducted to communicate the necessary knowledge of EVs to potential customers. This study could also help promote the use of EVs in Vietnam, thereby alleviating environmental issues in this developing country. Vietnam is considered the third most polluted country in Southeast Asia and the 36th most polluted country in the world. Vietnam is also facing numerous environmental challenges due to the increase in manufacturing activities, thus leading to the increased use of coal-fired power plants, accompanied by the growing consumption of fossil fuels for power generation and increasing exhaust fumes from vehicles and factories.

Limitations and future research directions are also discussed. Future research may examine the actual purchase behavior of consumers because the actual purchase behavior could also be useful for firms to promote EV adoption. Second, future studies could employ a probability sampling method to enhance the generalizability of this study. Finally, future studies could also be performed in other Southeast Asian countries to reexamine the effect of face consciousness on the purchase intention toward EVs.

In the fintech industry, the adoption of financial robo-advisory services has received significant attention. The **second paper by Dewan Mehrab Ashrafi & Mohammad Rokibul Kabir** employed a deductive approach and purposive sampling in order to better understand the factors influencing users' intentions to adopt robo-advisory services. The purpose of this study was to investigate the factors

influencing user adoption patterns and to provide financial institutions and policymakers with insights for the development and positioning of robo-advisory services. Using a quantitative methodology, the study obtained data from a sample of 272 participants. PLS-SEM (Partial Least Squares Structural Equation Modelling) was used to analyze the collected data. The focus of the analysis was on investigating the relationships between a number of factors, including perceived value, perceived risk, perceived enjoyment, anthropomorphism, perceived performance, complexity, trust, perceived security, behavioral intentions, and innovation resilience.

The study found that perceived value, which was influenced by perceived enjoyment, anthropomorphism, and perceived performance, had a significant influence on users' behavioral intentions to use robo-advisory services. The findings also revealed that perceived risk, which is influenced by complexity, trust, and perceived security, played an important role in users' behavioral intentions. In this study, it was revealed that both perceived value and perceived risk have a significant influence on users' behavioral intentions to use robo-advisory services. In addition, the study emphasized the moderating role of innovation resilience in the relationship between perceived value and users' behavioral intention to use robo-advisory services. This study found that individuals with greater innovation resilience may be more likely to employ these services, even if they initially perceive a lower value.

The study contributes to the existing body of knowledge by highlighting the importance of perceived value, perceived risk, and innovation resilience in consumers' acceptance of robo-advisory services. The findings offer financial institutions and policymakers involved in the development and positioning of robo-advisory services with valuable insights. Financial institutions can attract potential users by emphasizing the enjoyment, anthropomorphism, and performance aspects of robo-advisory services to increase their perceived value. On the other hand, institutions should address the concerns of users regarding complexity, trust, and perceived security, as these factors influence the perception of risk. Transparent practices and clear communication can help mitigate user concerns. In addition, by recognizing the importance of innovation resilience, financial institutions can target more resilient individuals by highlighting the long-term benefits and adaptability of robo-advisory services. Therefore, when devising regulations for robo-advisory services, policymakers should consider the study's findings, ensuring a balance between consumer protection and innovation. In addition, policymakers can support initiatives to educate consumers about robo-advisory services, highlighting their benefits and addressing concerns related to complexity, trust, and security. In addition, they may consider offering incentives or support programs to encourage financial institutions to develop and provide robo-advisory services, which can improve financial inclusion and accessibility.

One of this study's limitations is that it does not address regulatory considerations. Future research would benefit from incorporating regulatory challenges and investigating the antecedents of robo-advisory service adoption. In terms of methodology, this study applied a quantitative approach to reach its conclusions. Combining quantitative and qualitative methodologies to determine if similar conclusions are reached is a potential avenue for future research. Future studies could consider incorporating both extrinsic and intrinsic motivators to improve the predictive accuracy of the proposed model. This would provide a deeper understanding of the factors that influence user preferences for robo-advisory services. In the future, it would be beneficial for researchers to conduct a comprehensive study in order to obtain a deeper understanding of consumers' intentions to use AI-powered financial robo-advisory services. This might involve examining variables that serve as mediators to elucidate the underlying mechanisms that drive user preferences for robo-advisory services. Overall, this study provides valuable insights into the determinants impacting users' adoption patterns of financial robo-advisory services. By highlighting the importance of perceived value, perceived risk, and innovation resilience, the findings contribute to the existing body of literature and offer practical implications for financial institutions and policymakers.

In the **third study by Abdul Wahab, Tanzeela Aqif, Jerome Mario Sigamony, Muhammad Sheheryar Arshad, Soban Rao, & Ubaid Ullah Khan**, dynamics of online entrepreneurship have been examined while studying the changing aspects of the innovation ecosystem and how it is shaped through customer knowledge and digital platforms. The emphasis of their study is on the use of online entrepreneurs' user knowledge that determines decisions about the creation or delivery of a product/service to satisfy the needs of the target audience along with the use of digital channels to digitally evolve the online entrepreneurship industry. The theoretical framework of their research helps to examine how online entrepreneurship is influenced by the implementation of digital platforms, increased customer knowledge, and the role of digital innovation. The authors based on the opportunity-based entrepreneurship theory debated that entrepreneur would be much more competitive if they are better able to capitalize on the opportunities and possibilities presented to them by technological, cultural, and social changes.

For this quantitative research data has been collected by using convenience sampling. The data (n=200) has been collected from various individuals including entrepreneurs and freelancers from different companies, startups, and online marketplaces for freelance services. To compute statistical results, structural equation modeling has been used and the whole model was run in Smart PLS 3 software. Bootstrapping technique has been used to analyze the data and perform path analysis. All four-hypotheses proposed have been accepted. It has been found that digital platforms and customer knowledge provide entrepreneurs with a perfect fit for conducting their business in an online space.

The findings of this research have proved to be highly significant for online entrepreneurs and entrepreneurs (people who already have traditional business operations but plan on capitalizing on digital platforms in conjunction with customer knowledge to innovate) aiming to go online and provide services. Entrepreneurs who are currently operating their businesses online, substantially benefit from multiple platforms. As it provides online entrepreneurs with the additional capability to reach far greater audiences and also collect customer knowledge that could assist further business decisions. Moreover, customer knowledge and digital platforms further improve digital innovation. This research provides the guidance for online entrepreneurs who want to start a successful venture through the most relevant customer knowledge and appropriate digital platforms. Furthermore, the disparity in research conducted on online entrepreneurship has contributed to further advances in academia as it has examined the relationship of online entrepreneurship with multiple variables.

The Metaverse is a virtual world where users can interact with each other and digital objects in a fully immersive way. It has the potential to revolutionize entertainment, education, and even work, creating new opportunities for social interaction and commerce. The Metaverse offers exciting opportunities for investments in virtual real estate, gaming, and digital assets. As the virtual world grows in popularity, savvy investors can capitalize on the market by buying and selling valuable virtual assets or creating unique experiences that users are willing to pay for. To enter the Metaverse for investment purposes, it is necessary to conduct comprehensive research and gather information. In this direction, **the fourth paper by İbrahim Halil Efendioğlu** investigates the effects of source credibility, argument quality, and the perceived risk on the purchase intention obtained by the investors about the Metaverse world from the point of view information adoption model. The Information Adoption Model is a framework that helps organizations understand how individuals adopt new information technologies. To collect empirical data, a questionnaire was developed by adopting the measurement scale items from previous literature. For this research, data were collected online from 495 consumers interested in Metaverse investment. The structural equation model was used to test the proposed model. It consisted of 495 people, 129 of whom were women, and 366 were men. Among the participants, 294 were single, and 201 were married. In this case, the majority of the participants were single and male.

The results of the structural model test showed that the standardization path coefficients were statistically significant. According to these results, the source credibility and the quality of the argument had a positive effect on purchase intention; perceived risk had a negative impact on purchase intention. This research offers significant conceptual advancements to the Information Adoption Model field. Firstly, conducting such an analysis is among the few instances where the dependence on information, the quality of arguments, and the connection with buying intent are examined empirically within the realm of Metaverse investment. Secondly, the sensed danger negatively impacts the desire to embrace and utilize the Metaverse for purchasing. This observation indicates that the inclination of consumers to adopt Metaverse investing is susceptible to the degree of risk awareness exhibited by investors. In other words, investors are generally more apprehensive about risk perception factors when promoting their buying intent to adopt Metaverse investment.

Efendioglu's research enriches the academic domain by supplying ample empirical evidence that Metaverse investors are focused on cultivating trust for buying intent. It will be crucial to perform suitable due diligence before buying in the Metaverse setting. If feasible, acquiring assistance from advisory companies, or if not viable, it would be advantageous to gather data from dependable and seasoned Metaverse investors. The knowledge acquired from reputable sources will have a favorable impact on investors' purchasing intentions. Additionally, marketing professionals should convey Metaverse investment details from competent and trustworthy communicators to customers via the appropriate pathways. As a result, consumers equipped with capable information can broaden their Metaverse investments. Conversely, Metaverse enterprises disseminating valuable and trustworthy data for customers on social media and offering regular education on the topic will directly influence their purchases positively.

Small and Medium-sized Enterprises (SME) play a key-role in the global economy, as they represent a large band of the wealth produced worldwide. These companies have been continuously challenged to keeping up with the Industry 4.0 revolution and the digitization of their business processes, to increase their competitiveness and survival in global markets. However, information security and cybersecurity best practices adoption in SME have often been neglected, due to their intrinsic characteristics, namely the small dimension, the fact that they are grounded on traditional and familiar structures, and by their restricted financial and human resources.

There are two main types of resources a business can use to improve their information security and cybersecurity posture: standards and guidelines. Standards tend to be descriptive, as they describe the world as it should be, and a company tests its reality against it to see where it matches. Guidelines tend to be prescriptive, as they lay out a plan to reach an intended goal. Although there is a fair few of these resources available, they tend to target larger and well-established companies who also tend to have larger resource pools and a more mature IT infrastructure.

The fifth paper by Bruno Azinheira, Mário Antunes, Marisa Maximiano, & Ricardo Gomes proposes an innovative methodology that aims to bridge the gap between information security and the business processes, focused on the reality of SME. The authors take as input a Roadmap of Minimum Cybersecurity Capabilities produced by the Portuguese Center for Cybersecurity and maps it to the widely used ISO 27001:2013 information security standard. The roadmap is directed towards SME, as it defines the minimum cybersecurity competencies that should be attained by the companies, in particular SME. Regarding information security standards, ISO 27001:2013 has a broad range of applications, including SME and their business models.

The paper proposes a methodology to accommodate the roadmap defined by the Portuguese Cybersecurity Center and to map it in an information security standard. The case study used in this paper was the ISO 27001:2013, but other related information security and cybersecurity standards can also be

applied in the proposed framework. The proposed methodology is a mapping between the two documents, namely the roadmap and the standard, but strictly oriented to the reality of the SME. The resulting mapping shows the correlation between the documents using a set of heuristics that allowed the identification of the semantical differences that tend to exist in documents of this nature.

To validate the methodology, a self-assessment questionnaire was derived from the correlation mapping and used in the case study with 17 SME in the central region of Portugal. The assessment and validation were made by a technical view of the cybersecurity posture of the surveyed enterprises. The results presented in this paper allow the authors to say that this methodology is not only valid but also a welcomed tool for businesses that might not have the resources or maturity to fully apply an international standard to improve their cybersecurity posture. In a world where technology never stops evolving, a set of tools is required to help the more fragile and not so well-prepared businesses navigate the turbulent sea of digital treats. The paper presents one such tool that can be self-deployed and help business leaders make better decisions.

The **sixth paper by Bashkim Bellaqa, Xhavit Shala, & Jona Bellaqa** examines macroeconomic policy analysis, as well as the impacts of Foreign Direct Investment (FDI) and export remittances on the Republic of Kosovo. The issue in Kosovo, where FDI still performs poorly and there is a negative trade balance, is more the product of slow economic growth and ineffective macroeconomic policies. This research relied on recent literature and academic work in the fields of FDI, remittances, and exports. Patterns in FDI, remittances, and exports in Kosovo between 2010 and 2020 were examined, and the impacts of FDI and remittances on exports were also measured. Regression analyses using the OLS and Excel methods were performed to determine the functional relationships between the export-dependent variable and the independent variables of FDI and remittances.

The study's findings suggest that Kosovo does not have acceptable levels of FDI and exports. However, there are indications of improvement in remittances over time, and the impact of remittances on the expansion of exports in Kosovo is acceptable. The greatest FDI values were in 2011, the highest remittance values were in 2020, and the highest export values were in 2020. This study's regression analyses on the impacts of FDI and remittances on exports in Kosovo for the years 2010–2020 show a favourable correlation between the two.

Bellaqa, Shala, & Bellaqa conclude that Kosovo should do more to attract FDI and improve the trade balance. Therefore, creating and maintaining economic and political stability is an essential factor in increasing exports and FDI. Economic and political stability will also increase remittances, channelling them into investments. Stability will also help establish competitive advantages to improve Kosovo's appeal to international investors. According to this study's findings, Kosovo must develop more effective and long-lasting policies to improve performance, particularly in the areas of FDI and trade balance. The correlation of the dependent measure and the independent variables of FDI and export, according to a linear regression study, the relationship between FDI and export growth is weak, whereas the relationship between remittances and export growth is acceptable.

The authors suggest that the government should develop effective and sustainable FDI, export, and remittance policies. To improve the trade balance, the government should make more investments to improve infrastructure, legislation, and institutional capacities. Furthermore, more emphasis should be placed on the development of product quality infrastructure in accordance with the requirements of European Union standards and standards at the global level. It has also been suggested that more studies be done on these indicators, as well as other pertinent indicators, and that more studies measuring the effects of FDI and remittances on export growth be conducted in Kosovo.

The **seventh paper by Mohammed Khojah** aims to discover the perceptions of people living in a conservative socio-market of ridesharing. Ridesharing is one of the common applications of a sharing economy, a phenomenon that is becoming more popular with the advancements being made in communication tools and means. Businesses such as Uber, Lyft, Careem and other providers offer phone apps which serve as a market to bring service providers and users together.

The extant literature has discussed several factors to indicate why individuals participate in the sharing economy. In an effort to elucidate the role of norms in the consumption of the sharing economy in a conservative socio-market, this study unveiled the nature of norms as being a construct with several dimensions. The study employed a questionnaire designed and deployed to collect data from a convenient sample using social media channels. A valid 293 responses were analyzed via PLS-SEM method using SmartPLS 3.3 software. The empirical results show that four constructs, namely conventions, morals, mores and rules, had positive impacts on the intention to work for rideshare companies. Laws, however, were not found to have an impact on intention. The study also found that norms can be viewed as a second-order variable where rules and laws create an impact on conventions, morals and mores. Thus, norms with five distinct aspects can be used to determine the intentions and actual participation of individuals in sharing economy applications.

The findings of this study could help in terms of theoretical and managerial impacts. In the theoretical aspect, this study shows significant empirical evidence that norms have a positive impact on behavioural intention to participate in sharing economy. While the extant literature has measured norms as a single variable, this study was able to provide deeper insight by explaining different five dimensions within norms. Thus, variations in behavioural intention to participate in activities can be explained by several subcategories of what is used to be conceived as a single variable.

In the managerial aspect, this study can help decision-makers understand the behaviours of individuals when it comes to participating in sharing economy activities. For instance, in socio-markets where job opportunities are limited, individuals frequently seek other jobs to diversify their income. Authorities might have initiatives to encourage participation in such activities. However, resistance may occur due to the lack of understanding of the effect of the five dimensions of norms.

Small and medium sized businesses (SMEs) are recognised as the backbone of economic growth in both developed and developing countries due to their positive effects on job creation, sustainable economic growth, and GDP. It is accepted globally that SMEs have contributed meaningfully to the social and economic development of their nations, and governments worldwide have shifted their focus to the development of the SME sector to promote economic growth. However, SMEs face a high failure rate, and the current COVID-19 pandemic has had a negative impact on SMEs. Developing an active marketing communication strategy is necessary to achieve sustainable business growth. Marketing communication is an important activity for the success of SMEs, as they are affected by market changes and need to develop and implement effective strategies to compete. Marketing communication is an important part of strategic business management for success and sustainable development. It provides the ability to listen, suggest the movements and demands of consumers, and respond accordingly. Marketing communication is crucial to the success of SMEs, as it fosters business growth by giving consumers a cause to buy a company's products. Previous studies have revealed that SMEs lack marketing knowledge and expertise.

SMEs in Polokwane, South Africa need to identify appropriate marketing communication tools for effective business performance. The **eighth paper by Phokwane C. & Makhitha K.M.** examined the influence of marketing communication strategies adopted by SMEs operating in Polokwane on their performance. It also determined which marketing communication strategy is important for SMEs in Polokwane. A non-probability judgment sample of 412 SMEs was selected, and a questionnaire was used

to collect data. ANOVA statistical analysis tests were also conducted to test the hypotheses. The ANOVA and Mann-Whitney U tests were used to investigate which marketing communication strategies had a significant relationship with individual performance aspect variables. The Mann-Whitney U test found that sales promotion led to increased sales, while digital marketing, telemarketing and personal selling lead to increased profitability. It also found that SMEs considered sales promotion the most important marketing communication strategy, while digital marketing and business branding were also found to be of importance. The study further found that SMEs use sales promotion, digital marketing, telemarketing and public relations to influence their performance through increased sales, improved customer relationships, and increased profitability and customer loyalty. The main limitation of the study was that it focused only on SMEs operating within the parameters of Polokwane and not in South Africa as a whole. Further studies could investigate the marketing communication of SMEs and the effect thereof in all provinces of South Africa and determine which strategies would be most effective for different SMEs.

N. Delener, Ph.D.
Editor-in-Chief

NOTE FROM THE EDITORS

As an interdisciplinary indexed journal, *The Journal of Global Business and Technology (JGBAT)* serves academicians and practitioners in the fields of global business and technology management and their related areas. JGBAT is also an appropriate outlet for manuscripts designed to be of interest, concern, and applied value to its audience of professionals and scholars.

Readers will note that our attempt to bridge the gap between theory and practice has been successful. We cannot thank our reviewers enough for having been so professional and effective in reiterating to contributors the need to provide managerial applications of their research. As is now obvious, the majority of the articles include a section on managerial implications of research. We wish to reiterate once again our sincere thanks to JGBAT reviewers for having induced contributors to answer the “so what?” question that every *Journal of Global Business and Technology* article is required to address.

Thank you for your interest in the journal and we are looking forward to receiving your submissions. For submissions guidelines and requirements, please refer to the Manuscript Guidelines at the end of this publication.

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MEDIATING ROLES OF THE RESISTANCE TO CHANGE AND WILLINGNESS TO PAY ON THE IMPACT OF FACE CONSCIOUSNESS ON PURCHASE INTENTION OF EVS IN VIETNAM

Gia Ninh Nguyen

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ABSTRACT

This study aims to examine the critical factors affecting customers' resistance to change from internal combustion engine vehicles (ICEVs) to electric vehicles (EVs), which in turn impacts the purchase intention of customers toward EVs. In doing so, this study emphasizes two antecedents of resistance to change, namely, face consciousness and customer knowledge, which are two essential elements in the Asian context. More importantly, face consciousness is regarded as an important personal characteristic of customers in countries affected by Confucian culture. Data were collected from 185 respondents in Ho Chi Minh City, Vietnam. SmartPLS, SPSS Macro PROCESS, and AMOS 20.0 were utilized to analyze the models. Face consciousness and customer knowledge were found to be related to purchase intention toward EVs both directly and indirectly through resistance to change and willingness to pay. This study provides firms with valuable solutions that can help increase the purchase rates of EVs. Manufacturing firms are encouraged to highlight the symbolic values of EVs instead of reducing prices. Advertising campaigns should also be conducted to communicate the necessary knowledge of EVs to potential customers. This study could also help promote the use of EVs in Vietnam, thereby alleviating environmental issues in this developing country. Limitations and future research directions are also discussed.

Keywords: Face consciousness, Electric vehicles, Resistance to change, Confucian culture, Asia.

INTRODUCTION

Internal combustion engine vehicles (ICEVs) can lead to serious environmental problems (Qiao et al., 2019). This is especially the case for developing countries where ICEVs, together with an increasing number of factories and the vast expansion of urban areas, have given rise to burning air pollution issues (Hamidi and Ramavandi, 2020). In Vietnam, a multitude of ICEVs such as motorcycles and cars have caused severe air contamination issues in large cities, for example, in Ho Chi Minh City and Hanoi (Minh, 2020). As a result, Vietnam is considered the third most polluted country in Southeast Asia and the 36th most polluted country in the world. Hanoi, the capital city of Vietnam, is the second most polluted city in Southeast Asia and the 15th most polluted city in the world (IQAIR, 2021). Vietnam is also facing numerous environmental challenges due to the increase in manufacturing activities (IQAIR, 2021), thus leading to the increased use of coal-fired power plants, accompanied by the growing

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consumption of fossil fuels for power generation and increasing exhaust fumes from vehicles and factories (Reardon, 2022).

The use of electric vehicles (EVs) can be an effective solution for addressing excessive oil consumption and massive air contamination (Hu and Yuan, 2018). Accordingly, the use of renewable energy can effectively reduce air quality problems (Hamidi and Ramavandi, 2020). Nevertheless, the sales of EVs in the Vietnam market have been extremely low (Thuy, 2021), and research into the purchase behavior of Vietnamese consumers toward four-wheel EVs has been quite limited. As most research into the adoption of four-wheel EVs has been conducted in other countries neighboring Vietnam, such as China, Malaysia, Indonesia, and Thailand (e.g., Adu-Gyamfi et al., 2022; Veza et al., 2022; Asadi et al., 2021; Thananusak et al., 2017), and studies seeking to examine the adoption of four-wheel EVs in Vietnam are still scarce, this study aims to fill this void by examining the factors affecting the purchase intention of Vietnamese consumers toward four-wheel EVs. In doing so, this study may help increase EV adoption in Vietnam, which in turn may help alleviate the environmental problems in this country. To this end, this study is one of the first studies shedding light on the decisive factors impacting the purchase intention of Vietnamese consumers toward EVs.

Face consciousness is considered a critical factor affecting consumer behavior in countries affected by Confucian culture (Redding and Ng, 1983; Wong and Ahuvia, 1998). Face consciousness denotes the demands of individuals to gain face and prevent losing face (Bao, Zhou, and Su, 2003). Studies on face consciousness have been generally conducted in China, a salient country affected by Confucian culture (e.g., Zhang and Wang, 2019; Zhang and Dong, 2021). Face consciousness has been increasingly utilized lately in explaining consumer behavior, for example, consumer buying behavior for luxury products (Zhang and Wang, 2019). This construct has also been found to be a moderator on the relationship between symbolic meanings and purchase intention toward EVs (Liu et al., 2021). A direct effect of face consciousness on status consumption has also been confirmed (Sun, Chen, and Li, 2021). Face consciousness has also been used to further explain the effects of individual characteristics (e.g., pro-social or pro-self-behaviors) on green product consumption (Shi, Wu, and Kuang, 2018). Nevertheless, the complex relationships among face consciousness, customer knowledge, resistance to change, willingness to pay, and purchase intention are still underexplored. This study, therefore, seeks to deepen our understanding of the interplay among these factors, thereby enriching the understanding of the underlying mechanisms through which face consciousness and customer knowledge impact the purchase decisions of customers toward EVs. Furthermore, limited research on these relationships has been conducted in Vietnam, a neighboring country of China that is also affected by Confucian culture. This research, therefore, aims to fill these gaps by examining the interplay among these factors in Vietnam. In doing so, this study also answers the call of Ng, Law, and Zhang (2018) to examine the effects of consumer knowledge on the purchase intention of customers toward electrical vehicles.

LITERATURE REVIEW AND RESEARCH HYPOTHESES

Face Consciousness

This study draws on the assumptions of the face-negotiation theory which posits that ‘face’ tends to characterize individuals’ behavior (Ting-Toomey, 1988; Crockford and Ting-Toomey, 1994); for example, the “cultural variability dimension of individualism-collectivism influences members’ selection of self-oriented facework behaviors and/or other-oriented facework behaviors” (Ting-Toomey and Kurogi, 1998, p. 190). Based on the face-negotiation theory and considering face consciousness as an important cultural characteristic, a study by Bao, Zhou, and Su (2003) also indicated that face consciousness is likely to impact consumer decision-making styles. For example, the authors found that face-conscious customers might highly value novel and fashionable products as these products could bring customers face. In addition, customers are willing to pay more for expensive brand names that have

their friends' approval. This work also draws on the suggestions of past studies on the significant role of face consciousness in explaining customer behavior in Asian countries (Tse, 1996) and in those countries affected by Confucian culture (Redding and Ng, 1983; Wong and Ahuvia, 1998). Face consciousness has also been widely used to explain organizational behavior and customer behavior in both Asian and Western countries (Oetzel and Ting-Toomey, 2003; Kim and Nam, 1998; Ninh, 2021; Shi et al., 2018; Liu et al., 2021).

The rationale for an investigation of the effects of face consciousness on the consumption behavior of consumers toward EVs in Vietnam is justified as follows. First, while the social-psychological concept of face consciousness has been widely applied in both Asian and Western countries (Oetzel and Ting-Toomey, 2003; Kim and Nam, 1998), the impact of face consciousness on EV adoption and the mechanisms through which face consciousness impacts EV adoption are still need to be elucidated. Second, as Vietnam is a neighboring country affected by Confucian culture from China (Hieu, 2018), face consciousness is likely to be a critical factor affecting EV adoption in this country.

Face consciousness denotes individuals' "desire to enhance, to maintain, and to avoid losing face" in connection with other meaningful people (Bao, Zhou, and Su, 2003, p. 736). Individuals from countries affected by Confucian culture are more likely to be influenced by face consciousness and they are more worried about whether they could gain or lose face from their specific behaviors (Lee, 1991). Besides the functional values that EVs can bring to consumers (Qian and Yin, 2017), consumers can also gain substantial psychological benefits in which they can show other significant people that they possess a pro-social attitude and they can afford such expensive EVs (Griskevicius, Tybur, and Van den Bergh, 2010). In doing so, individuals with high levels of face consciousness can gain social status and a pro-social image (Graham-Rowe et al., 2012). In addition, EVs normally have fancy designs (Linh, 2020) and are more expensive than traditional products (Essoussi and Zahaf, 2008) which can persuade individuals to purchase them. This is similar to the situation in which people with a high degree of face consciousness usually lay heavy emphasis on external values and are prone to purchase luxury products (Bao, Zhou, and Su, 2003). As such, they can show up their wealth and social status by purchasing EVs. It is worth mentioning that willingness to pay and purchase intention are two different concepts. While willingness to pay denotes the maximum amount of money a customer is willing to pay for a product or service (Homburg et al., 2005), purchase intention denotes the tendency of a customer to purchase a product routinely in the future without switching to other products (Diallo, 2012). We argue that as face consciousness increases, both the willingness to pay for EVs and the purchase intention toward EVs increase. Thus, two hypotheses are proposed:

H1a. As face consciousness increases, the willingness to pay of consumers for EVs increases.

H1b. As face consciousness increases, the intention to purchase of consumers for EVs increases.

In addition, other important factors such as resistance to change and customer knowledge were also incorporated into the theoretical model to better explain the endogenous constructs. Resistance to change was suggested by a recent study that it could impact the purchase intention of EVs (Ninh, 2021). Indeed, the adoption of EVs can be considered a new change with new ways to operate and maintain EVs, the difficulties in finding charging stations, longer time to charge EVs (Rezvani et al., 2015), higher costs of batteries, and low reselling prices (Bohnsack et al., 2014) that can trigger resistance to change from customers (Ninh, 2021). What is more, the role of customer knowledge of EVs (i.e., the prior knowledge of customers about EVs (e.g., how to use EVs, battery problems, usage costs, etc.)) in the purchase intention of EVs was also examined in response to the call of Ng et al. (2018) regarding examining the role of customer knowledge in EV adoption. Indeed, EVs are seen as a new type of vehicle in Vietnam and therefore customers may lack knowledge of EVs which can influence their attitude and purchase intention toward EVs (Egbue and Long, 2012; Huang, 2019). The conceptual framework is illustrated in Figure 1.

Customer Knowledge (KNOW)

Customer knowledge refers to the knowledge of customers toward a product or a brand (Huang and Ge, 2019). Sufficient customer knowledge of EVs can lead to increased purchase intention (Lane and Potter, 2007). Customer knowledge of EVs is generally seen as finite (Ng et al., 2018) and this customer knowledge could be a determining factor that needs to be taken into account. Indeed, prior customer knowledge was considered as a crucial factor affecting purchasing and usage behaviors of customers at large (Lyons and Breakwell, 1994; Cheron and Hayashi, 2001). Customer knowledge was also found to be an essential component associated with the willingness to pay more for a new transportation technology (Mourato, Saynor, and Hart, 2004). This customer knowledge is also related to the attitude toward EVs (Egbue and Long, 2012). Customer knowledge is therefore regarded as a significant element influencing the decision-making process of customers (Saaksjarvi, 2003). The knowledge of customers about EVs (e.g., how to use EVs, battery problems, usage costs, etc.) might be achieved through a multitude of channels ranging from television, newspapers, magazines to conventional conversations with other people (Le Hebel, Montpied, and Fontanieu, 2014). Empirical evidence also supported a positive relationship between customer knowledge and the purchase intention of customers for EVs (Sang and Bekhet, 2015; Huang and Ge, 2019). Thus, these hypotheses are proposed:

H2a. As customer knowledge increases, the willingness to pay of customers for EVs increases.

H2b. As customer knowledge increases, the intention of consumers to purchase EVs increases.

Mediating Role of Resistance to Change (RTC)

Resistance to change denotes the tendency of customers to avoid making changes and undervalue changes in diverse contexts (Oreg, 2003). According to the status quo bias theory, individuals prefer to maintain past decisions or current situations (Samuelson and Zeckhauser, 1988). The concept of resistance to change has been frequently adopted in the technology adoption context (Quinn and Mueller, 1982). Accordingly, a newly launched technology must satisfy customers' needs in order to persuade them to adopt that technology (Wallis Report, 1997). This resistance to change concept has also been used in the adoption of online banking (Al-Somali et al., 2009; Daniel, 1999). As people generally resist change (Dent and Goldberg, 1999), resistance to change can be a large barrier to EV adoption. Since consumers tend to maintain the existing conditions and situations (Samuelson and Zeckhauser, 1988), they may hesitate to change from conventional ICEVs to EVs. Nonetheless, because people with a high level of face consciousness are more likely to adopt novel and fashionable offerings to gain face (Bao, Zhou, and Su, 2003), we argue that consumers with high levels of face consciousness are prone to explore state-of-the-art technologies and models on the market, such as EVs, and adopt them to show a pro-environmental image and social status (Griskevicius et al., 2010; Graham-Rowe et al., 2012). Thus, they are more willing to make changes. Indeed, there are several reasons explaining why people resist the adoption of EVs such as learning new ways to operate and maintain EVs, looking for charging stations, spending more time charging EVs (Rezvani et al., 2015), spending more money to change batteries, and owning a vehicle with a low resale price (Bohnsack et al., 2014). Thus, when customers possess high levels of face consciousness, they are more willing to make changes and adopt EVs.

In addition, while customer knowledge may affect both the willingness to pay and purchase intention as discussed, we contend that these impacts can occur through the resistance to change. Accordingly, when customers have sufficient knowledge of EVs, such as the ability of EVs to protect the environment (Bang et al., 2000) and other functional values (Schuitema et al., 2013), customers are less likely to resist new changes and they tend to adopt EVs. For example, as customer knowledge results in the willingness of customers to pay more for new technology (Mourato, Saynor, and Hart, 2004), customers are more likely to pay more for changing EV batteries (Bohnsack et al., 2014). By

understanding the environmental and functional values of EVs, customers are more likely to learn new ways to operate and maintain EVs and look for charging stations (Rezvani et al., 2015). As a result, customers are more willing to pay the emerging costs as well as switch from the current ICEV vendors to new EV vendors (Bendapudi and Berry, 1997), which in turn leads to the purchase intention for EVs. Thus, two hypotheses are proposed:

H3a. Resistance to change mediates the relationship between face consciousness and the purchase intention of consumers for EVs.

H3b. Resistance to change mediates the relationship between customer knowledge and the purchase intention of consumers for EVs.

Mediating Role of Willingness to Pay (WTP)

Price per se might be seen as a major barrier to green product adoption (Paul and Rana, 2012). To that end, customers might refuse to purchase EVs if they are afraid of the expensive price of EVs. In contrast, if they are willing to pay extra for the environmental value of EVs, they are inclined to purchase them (Olson, 2013). We argue that a customer with a high level of face consciousness might have a low level of resistance to change, and in turn, they are more willing to pay a premium for an EV in exchange for a positive image and social status (Graham-Rowe et al., 2012). Indeed, Kim and Gupta (2012) have established a relationship between resistance to change and the willingness to pay. From the relationship marketing view, the pre-established relationships between customers and existing vendors (i.e., ICEV vendors) can also make customers be willing to pay more for existing vendors and resist changing to new EV vendors (Bendapudi and Berry, 1997). As such, a customer with low levels of resistance to change is likely to be more willing to pay for the emerging costs and accept the inconvenience resulting from new changes. Subsequently, this willingness to pay is able to lead to purchase intention for that EV. Similarly, the knowledge that customers possess toward EVs might lay a solid foundation on which customers would be more willing to pay for an EV and subsequently, to purchase an EV. Hence, two hypotheses are proposed:

H4a. The effect of face consciousness on the purchase intention for EVs is serially (and positively) mediated by resistance to change and willingness to pay, correspondingly.

H4b. The effect of customer knowledge on the purchase intention for EVs is serially (and positively) mediated by resistance to change and willingness to pay, correspondingly.

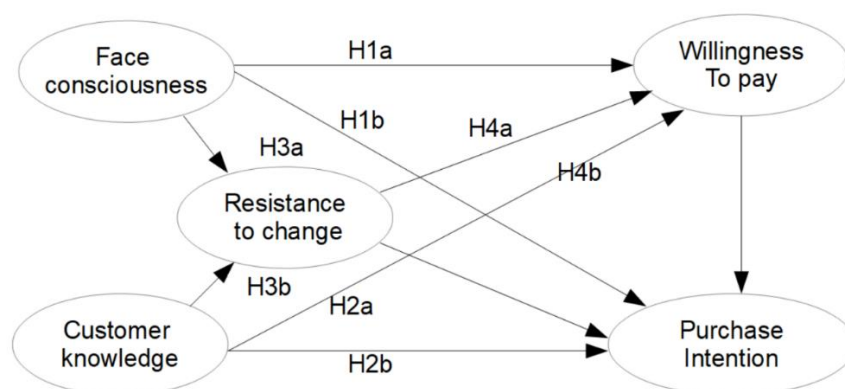


Figure 1: Conceptual framework

Figure 1 illustrates the conceptual framework used in this study that highlights the mediating roles of resistance to change and willingness to pay in the relationship between face consciousness and customer knowledge and the purchase intention of consumers for EVs.

RESEARCH METHOD

Participants

An online survey was conducted from May to August 2021 and online questionnaires were sent to respondents from car communities, universities, and companies in Ho Chi Minh City, Vietnam. Ho Chi Minh City is the most populous city in Vietnam and is also one of the most polluted cities in Vietnam (IQAIR, 2021). Participants from car communities are expected to be more interested in new car models and thus tend to purchase electric vehicles in the foreseeable future. Specifically, the link to the questionnaire was sent to the two most popular online car communities in Vietnam, otosaigon and otofun, where users can receive credible information and advice about cars (Reviewxehoi360, 2019). The link to the questionnaire was also sent to participants from companies and universities who are interested in the survey and/or are likely to use EVs in the future through personal connections. After the survey, 192 responses were collected. After removing questionnaires with incomplete responses and with inappropriate responses such as those with all “7” values, 185 completed responses were achieved. The results showed that 50.8 percent of respondents were males and 48.6 percent were females. In addition, 61.6 percent of respondents were from 18 to 24 years old, 18.9 percent were from 25 to 34 years old, 14.1 percent were from 35 to 44 years old, 4.9 percent were from 45 to 54, and 0.5 percent were above 55 years old (Table 1). Though 61.6 percent of respondents are from 18 to 24 years old, this young group of customers is more likely to accept new changes when purchasing new cars (Thong tin dich vu, 2023). There is also a growing tendency that young people are purchasing cars, especially EVs in Vietnam (Dao Phuong and Phuong Thao, 2022) and several inexpensive car models are suitable for young Vietnamese (Tu van, 2022).

Table 1: Profile of the respondents.

Characteristic	Rank	Frequency	Percentage
Gender	Male	94	50.80%
	Female	90	48.60%
	Not specified	1	0.5%
	Secondary school or below	1	0.5%
Education level	College	6	3.20%
	University	146	78.9%
	Postgraduate degree	32	17.30%
	18–24	114	61.60%
Age	25–34	35	18.9%
	35–44	26	14.10%
	45–54	9	4.9%
	55 or above	1	0.5%
Purchasing	Yes	43	23.24%
Experience	No	142	76.76%

Instruments and Measures

The instruments and measures of the independent and dependent variables were adopted from previous research (Table 2). Seven-point Likert scales were employed with two extreme points: strongly disagree (1) and strongly agree (7).

Common-Method Variance

Common-method variance is also a potential issue that could significantly change the proposed relationships in the model. To minimize common method bias, we first ensure the full anonymity of the responses of participants. In doing so, participants are less likely to hide their true feelings and information (Podsakoff et al., 2003b). The items were also carefully selected from the literature and reevaluated by five participants in a pilot study to avoid item ambiguity (Tourangeau, Rips, and Rasinski, 2000). Respondents were also able to choose venues and times convenient to them to fill out the survey. We also tried to limit the survey length and the complexity of the questionnaire and tried to motivate respondents by promising to provide them with a summary of the results of the study. Next, independent variables and dependent variables were put in different sections by which participants cannot retrieve the relationships between them (Podsakoff et al., 2003b).

Two other *post hoc* approaches were employed to address common-method bias in this study following Podsakoff et al. (2003a) and Lindell and Whitney (2001). Harman's single-factor test was performed first in which the first factor explained 42.2 percent out of the total 75.4 percent variance explained. Next, a marker-variable method (Malhotra et al., 2006) was used and gender (male, female, and not specified) was chosen as a marker variable. This gender variable was not significantly correlated to other constructs and when added into the model, the correlations between the main constructs insignificantly changed with an average of 0.003, indicating no common-method bias in this study.

What is more, the variance inflation factor (VIF) was also gauged for the constructs, giving a reasonable range from 1.112 to 1.727, lower than the proposed range of below 5 (Hair, Ringle, and Sarstedt, 2011), providing no evidence of multicollinearity.

Data Analysis

PLS-SEM using SmartPLS 3.0 (Ringle, Wende, and Becker, 2015) was utilized to evaluate the measurement model and the structural model in this study (Sarstedt, Ringle, and Hair, 2017). The predictive relevance of the model was assessed using such criteria as path coefficients and R^2 (Chin, 1998). In addition, 1000-sample Bootstrapping was also conducted to generate appropriate parameters used to evaluate the structural models (Urbach and Ahlemann, 2010). AMOS 20.0 was also used to reevaluate the models. Finally, SPSS Macro PROCESS (Preacher and Hayes, 2008) was also used to calculate mediating effects aiming to increase the robustness of the analyses.

FINDINGS

The reliability and validity of measures were examined. First, measurement models were evaluated using the appropriate criteria.

Measurement Model

Composite reliabilities and Cronbach's alphas were used to evaluate the reliability of the measures (Nunnally, 1978) (Table 2). All of the values were above 0.7, thus indicating good reliability of the measures. In addition, all of the AVEs were greater than 0.5, thus indicating satisfactory convergent validity of all of the constructs (Hair, Ringle, and Sarstedt, 2011) (Table 2).

For testing the discriminant validity of all constructs, we employed up to four criteria. First, the Fornell-Larcker criterion was used as an effective tool to examine discriminant validity (Fornell and Larcker, 1981). Accordingly, square roots of AVEs of all constructs were higher than the correlations between the constructs and remaining constructs (Table 3), confirming the discriminant validity of all constructs. Next, cross-loadings between constructs were examined and all cross-loadings were lower than the focal factor loadings (Gefen and Straub, 2005; Lowry and Gaskin, 2014). In addition, as suggested by Gaski and Nevin (1985) and O'Cass (2002), the composite reliabilities of specific constructs were higher than the correlations between these constructs and the remaining constructs, providing

evidence for satisfactory discriminant validity. What is more, heterotraitmonotrait ratio of correlations (HTMT) was used as a more useful tool to examine discriminant validity (Henseler, Ringle, and Sarstedt, 2015). Accordingly, all HTMT ratios were from 0.387 to 0.658 (Table 4) and significantly lower than the criterion of 0.85, providing evidence for good discriminant validity for HTMT85 (Garson, 2016).

Table 2: Evaluation of measures.

Constructs and items (source) quality criteria	Item mean	SD	Standardized factor loadings
<i>Customer Knowledge</i> (Huang and Ge, 2019) $CA = 0.704$, $CR = 0.826$, $AVE = 0.612$.			
I have a certain understanding of the brand and product attributes of electric vehicles	4.481	1.624	0.814
I have a certain understanding of the relevant preferential policies for electric vehicles	4.135	1.692	0.77
I know that electric vehicles achieve energy conservation and environmental protection through fuel substitution.	5.411	1.400	0.762
<i>Face consciousness</i> (Bao, Zhou, and Su, 2003) $CA = 0.846$, $CR = 0.893$, $AVE = 0.677$.			
It is important that others like the products and brands I buy.	4.724	1.649	0.861
Sometimes I buy a product because my friends do so.	4.373	1.873	0.79
Name-brand purchase is a good way to distinguish people from others.	3.962	1.993	0.795
Name products and brands purchase can bring me a sense of prestige.	4.33	1.89	0.844
<i>Purchase Intention</i> (Yang et al., 2016; Pavlou, 2003; Wang et al., 2016) $CA = 0.925$, $CR = 0.944$, $AVE = 0.770$			
Given the chance, I intend to buy an EV	5.141	1.475	0.892
I recommend that others buy an EV	4.957	1.495	0.892
If I replace my vehicle, I will consider an EV first	4.778	1.542	0.896
Given the chance, I predict that I should buy an EV in the future.	5.324	1.349	0.863
It is likely that I will buy an EV in the near future.	4.919	1.488	0.843
<i>Willingness to pay</i> (Ng et al., 2018; Moser, 2015) $CA = 0.884$, $CR = 0.928$, $AVE = 0.812$.			
I am willing to pay more for environmentally friendly products	5.476	1.445	0.878
I am willing to pay more to ride an electric vehicle	4.93	1.485	0.894
I am willing to pay more to purchase an environmentally friendly EV	5.184	1.459	0.93
<i>Resistance to Change</i> (Al-Somali et al., 2009) $CA = 0.719$, $CR = 0.831$, $AVE = 0.622$			
I am interested to hear about new technological developments	6.022	1.239	0.791
Technological developments have enhanced our lives	6.232	1.117	0.73
I feel comfortable in changing and using EVs for my transportation activities	5.249	1.337	0.841

Table 3: Fornell–Larcker criterion assessment

	FACE	KNOW	PUR	RTC	WTP
FACE	0.823				
KNOW	0.443(0.515)	0.782			
PUR	0.453(0.491)	0.53(0.626)	0.877		
RTC	0.363(0.387)	0.516(0.634)	0.597(0.658)	0.789	
WTP	0.394(0.432)	0.467(0.574)	0.596(0.655)	0.543(0.641)	0.901

Note: Values in parentheses are HTMT ratios

Table 4: Results for conceptual model

Independent variables	Model 1		Model 2
	WTP	PUR	PUR

				Indirect	Direct
				RTC and WTP ^b	
				RTC ^a	WTP ^b
FACE	0.231***	0.178**	0.048*	0.05*	0.154*
KNOW	0.368***	0.264***	0.13***	0.065*	0.17*
RTC				0.113**	0.30***
R^2	0.263	0.46		0.511	
Q^2	0.2	0.345		0.384	

* Significant at 0.05 level

** Significant at 0.01 level

*** Significant at 0.001 level

^a Indirect effect through RTC; ^b Indirect effect through both RTC and WTP

Robustness Check

AMOS 20.0 was first utilized to analyze the structural model. The structural model fits the data well (CMIN = 213.75 with 81 degrees of freedom, $p < 0.01$, normed Chi square (CMIN/df) = 2.639, goodness-of-fit index (GFI) = 0.88, Tucker–Lewis index (TLI) = 0.903, CFI = 0.926, and root mean square error of approximation (RMSEA) = 0.09 (Hu and Bentler 1999; Steiger, 2007). In line with the PLS results, face consciousness has positive effects on willingness to pay ($b = 0.291, p < 0.001$) and purchase intention ($b = 0.17, p = 0.013$). Customer knowledge is also positively related to willingness to pay ($b = 0.166, p = 0.01$) and purchase intention ($b = 0.103, p = 0.02$).

Structural Model

This study assessed the structural models by evaluating the significance of the relationships, effect sizes, R^2 , and the predictability of the models (Hair et al., 2014). There were two models established to test hypotheses: (1) Model 1 without ‘resistance to change’ was used to test the direct effects of face consciousness and customer knowledge on the willingness to pay (H1a and H2a) and purchase attention (H1b and H2b), and (2) Model 2 with ‘resistance to change’ was used to test the mediating effects of resistance to change on the relationships between face consciousness and customer knowledge and the purchase intention (H3a and H3b). Then H4a and H4b will be tested using SPSS Macro PROCESS (Preacher and Hayes, 2008).

Accordingly, R^2 values of willingness to pay and of purchase intention in Model 1 were 0.263 and 0.46 (Table 5), respectively, and in Model 2 were 0.365 and 0.511, respectively, thus indicating significant predictive power of the dependent variables (Cohen, 1988). In addition, the effect sizes of all of the direct effects were between 0.05 and 0.15, thus signaling small-to-medium direct effects in the structural model. Next, the Q^2 values were gauged to evaluate the predictive accuracy of the structural models (Wold, 1982). All of the Q^2 values were higher than zero (Table 5), signaling satisfactory predictive accuracy (Hair et al., 2014).

Bootstrapping with 1,000 samples was used to evaluate the significance of the proposed relationships. Consequently, all of the hypotheses were supported (Table 6). First, for Model 1, face consciousness had a positive effect on willingness to pay ($b = 0.231, p = 0.001$), supporting H1a. Similarly, face consciousness had a positive effect on purchase intention ($b = 0.178, p = 0.008$), thereby supporting H1b. Likewise, customer knowledge significantly affected willingness to pay ($b = 0.37, p = 0.000$) and purchase intention ($b = 0.264, p = 0.000$), supporting H2a and H2b.

Regarding H3a and H3b, a procedure suggested by Hair et al. (2017) was used to evaluate the mediating effects. The indirect effect of face consciousness on purchase intention was significant ($b = 0.048, p = 0.04$) (Table 5). The direct effect was also significantly positive ($b = 0.154, p = 0.017$). The value of $p1*p2*p3$ (i.e., $p3$: the direct effect; $p1*p2$: the indirect effect) (i.e., $0.154*0.048=0.0073$)” was positive, indicating a complementary partial mediation of resistance to change on the relationship between face consciousness and purchase intention. H3a was therefore supported. Similarly for H3b, the indirect effect of customer knowledge on purchase intention was significant ($b = 0.13, p = 0.001$). The direct effect of customer knowledge on purchase intention was significant ($b = 0.17, p = 0.018$). In addition, the value of $p1*p2*p3$ (i.e., 0.0221) was positive, signaling a complementary partial mediation, in support of H3b.

In order to increase the rigor of the analyses, SPSS Macro PROCESS (Preacher and Hayes, 2008) was used to re-examine the mediating effects in the model. In doing so, we specified Model 4 to test H3a and H3b. Accordingly, the mediating effect of resistance to change on the relationship between face consciousness and purchase intention was confirmed ($b = 0.14; p = 0.03, p < 0.05; 95\% \text{ CI } [0.08, 0.21]$), in support of H3a. Similarly, Model 4 was also specified to test H3b. The indirect effect was also significant ($b = 0.18; p = 0.04, p < 0.05; 95\% \text{ CI } [0.11, 0.26]$), thereby supporting H3b.

Particularly, the serial mediation (*Face consciousness -> resistance to change -> willingness to pay -> purchase intention*) was evaluated by specifying SPSS Macro PROCESS using Model 6 (Preacher and Hayes, 2008). The results illustrated that a significant serial mediation exists ($b = 0.05; p < 0.05; 95\% \text{ CI } [0.021, 0.08]$), in support of H4a. Likewise, another serial mediation (*Customer knowledge -> resistance to change -> willingness to pay -> purchase intention*) was also evaluated using Model 6 and there was also a significant serial mediation ($b = 0.065; p < 0.05; 95\% \text{ CI } [0.03, 0.11]$), in support of H4b.

DISCUSSIONS

Although much research on green products and EVs has been conducted lately, scant attention has been devoted to examining the link between face consciousness, a common phenomenon in countries affected by Confucian culture (Redding and Ng, 1983; Wong and Ahuvia, 1998), and the purchase intention for EVs. This study therefore was conducted in Vietnam, a country affected by Confucian culture, to provide valuable insights into this effect. Vietnam is also regarded as one of the most polluted countries in Southeast Asia, thereby making this context an appropriate choice for the study on the adoption of EVs. In addition, this study also answers the call of Ng et al. (2018) for the examination of the effect of customer knowledge on the purchase intention for EVs, which is an issue that has been little mentioned in past research.

The results show that face consciousness significantly and positively affects the willingness to pay and the purchase intention of customers for EVs. This finding is mostly in line with the findings of past research (Bao, Zhou, and Su, 2003), which have revealed that customers tend to purchase luxury products to gain face. Accordingly, this study points out that customers are prone to consider EVs as luxury goods and that in doing so, high levels of face consciousness are positively associated with the willingness to pay and the purchase intention of customers for EVs. Additionally, this study shows that consumers with a high degree of face consciousness are more likely to favor pro-social behaviors and that these pro-social behaviors are positively related to the purchase of EVs, which has been demonstrated by past studies (e.g., Griskevicius et al., 2010).

This study also sheds light on the mechanisms by which face consciousness affects the purchase intention of customers for EVs. Therefore, the little-explored mediating relationships of *face consciousness -> resistance to change -> purchase intention* and *face consciousness -> resistance to change -> willingness to pay -> purchase intention* were identified and confirmed. Hence, the Asian countries customers with high levels of face consciousness are more likely to adopt new technologies and

new changes to gain face. To this end, they are also more willing to pay a premium for EVs and are likely to purchase EVs in the near future. Marketing efforts, therefore, are encouraged to underline the glamour of EVs as luxury products. As such, although EVs are usually more expensive than conventional ICEVs (Essoussi and Zahaf, 2008), firms need not reduce their prices. Alternatively, firms need to underscore EVs' sophisticated design and conduct special promotions to communicate the EVs' superior values. Further, consumers also tend to gain face by significantly demonstrating their pro-social behaviors. Thus, firms should also use appropriate advertising campaigns to highlight and convey this vital message to customers.

In response to the call of Ng et al. (2018), this study gives a sharp focus on the role of customer knowledge on the purchase intention of customers for EVs. It is clear that customer knowledge has a crucial role to play in the purchase decisions of customers. The question of how customer knowledge impacts the purchase intention of customers for EVs was also answered. Accordingly, similar to face consciousness, customer knowledge affects purchase intention for EVs directly and indirectly through resistance to change and willingness to pay. The proposed mediating roles of resistance to change and the willingness to pay in *customer knowledge -> resistance to change -> purchase intention* and *customer knowledge -> resistance to change -> willingness to pay -> purchase intention* links were also justified and confirmed. Hence, customer knowledge is likely to make customers adopt new changes more easily and more willing to pay a premium for EVs. To this end, firms should also shift the focus toward advertising and communicating relevant knowledge pertaining to EVs to their potential customers, given that customer knowledge of EVs is usually limited (Ng et al., 2018). This will in turn facilitate EV adoption and the purchase intention of customers for EVs.

MANAGERIAL IMPLICATIONS

This study provides managers with several practical implications. First, the findings indicate that face consciousness is an indispensable part of Vietnamese customers. Therefore, manufacturers of EVs should highlight the glamour of EVs and command premium prices (Essoussi and Zahaf, 2008). Firms should also invest in innovative activities to increase the quality of EVs and create state-of-the-art designs. Also, firms are advised to invest in marketing campaigns to enhance the emotional values of customers towards EVs. The message conveyed should be the pro-social values of EVs, superior quality, and innovative models.

Second, as customer knowledge has an important role to play in the purchase intention of customers toward EVs, it is advised that firms should place emphasis on marketing campaigns to educate customers on the environmental and social values of EVs. Such messages and slogans as “Glamorous EVs bring you convenience and are better for the environment” would be appropriate. In addition, once customers are educated about such information as the convenience and comfort of EVs, together with the provision of a wide range of additional services (Smith and Brynjolfsson, 2001), they will be more willing to change and adopt EVs. Besides, the government should also formulate clear policies to persuade customers to use EVs. Such government policies as subsidies for EVs, tax exemption (Kumar and Alok, 2020), free parking, and highway lane excess (Bjerkan et al., 2016) are important to increase the adoption rate of EVs.

CONCLUSION

Although EVs have become increasingly popular worldwide because of a growing environmental awareness (e.g., CAAM, 2018, Peters et al., 2008), the understanding of how to facilitate the use of EVs is still little explored, especially in developing countries where resources are more limited (Kale and Little, 2007), people have a low personal income (Statista, 2021), and a wide range of customers cannot afford EVs. Paradoxically, these countries are facing severe environmental issues, such as air pollution, thus providing an appropriate context in which to conduct this study. Importantly, in countries affected by

Confucian culture in Asia, and in which the people demonstrate unique personal characteristics, such as face consciousness, the decisive factors that could impact the purchase intention of EVs have been little explored. Indeed, people in these areas may devote their whole lives just to gaining face (Kim and Nam, 1998). In addition, customer knowledge is also of utmost importance to increase the EV adoption rate. Taken together, this study suggests that individuals affected by Confucian values in Asia normally display a marked tendency to gain face. In doing so, they tend to choose an EV to show their social status and a pro-environmental image. Furthermore, customer knowledge is critical to persuade them to change, to be willing to pay more, and to finally purchase an EV. Thus, EVs should be portrayed as luxurious cars and as vehicles offering invaluable environmental value. In turn, EVs could be an appealing offering to customers. Furthermore, firms should also utilize advertising campaigns, television programs, and social media to spread detailed knowledge of EVs to customers. Marketing and communication are therefore of utmost importance to deliver these vital messages to customers.

LIMITATIONS AND FURTHER STUDIES

This study also has some limitations that future studies can overcome. First, future studies might take a step further by examining the actual purchase behavior of consumers. Although the purchase intention is widely known as a strong predictor of purchase behavior (Ajzen, 1991), research on the actual purchase behavior could also be useful for firms to promote EV adoption. Second, future studies could employ a probability sampling method to enhance the generalizability of this study (Malhotra, 2006). Finally, future studies could also be performed in other Southeast Asian countries to reexamine the effect of face consciousness on the purchase intention toward EVs.

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HUMAN OR AI? UNDERSTANDING THE KEY DRIVERS OF CUSTOMERS' ADOPTION OF FINANCIAL ROBO-ADVISORY SERVICES: THE ROLE OF INNOVATION RESILIENCE

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ABSTRACT

The extant literature on fintech indicates a requirement for additional investigation into the adoption patterns of financial robo-advisory services. Our study aims to investigate the determinants that impact users' propensity to adopt financial robo-advisory services. The study employed a deductive approach, utilizing a quantitative method and purposive sampling to obtain a sample size of 272. PLS-SEM was used to evaluate the data. The findings indicated that perceived value is influenced by perceived enjoyment, anthropomorphism, and perceived performance, whereas perceived risk is affected by complexity, trust, and perceived security. Perceived value and perceived risk revealed a significant impact on users' behavioral intentions. The findings indicate that innovation resilience played a significant role in moderating the association between perceived value and users' behavioral intention to adopt robo-advisory services. The present study adds to the extant body of literature by emphasizing the significance of perceived value, perceived risk, and innovation resilience in the acceptance of robo-advisory services among consumers. The study's findings provide valuable insights for financial institutions and policymakers in the development and positioning of robo-advisory services.

Keywords: Robo-advisors, innovation resilience, perceived value, perceived risk, Fintech

INTRODUCTION

A financial robo-advisor is an artificially intelligent system that utilizes automated and artificial intelligence-driven algorithms to provide investment management services with minimal or negligible human involvement (Northey et al., 2022). The growing demand for inexpensive portfolio management systems in the financial sector has led to a significant interest among scholars in financial robo-advisors. These types of automated systems that incorporate robots and artificial intelligence (AI) are transforming industries ranging from manufacturing and retail to service sectors (Agarwal et al., 2022). However, such

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technological advancements may pose a threat to traditional economic and labor practices. According to a report by the International Federation of Robotics (2022), the implementation of automated technologies is growing at a rate of 31% annually. According to Acemoglu and Restrepo (2017), the current growth rate has the potential to displace up to 50% of existing occupations within the next 20 years. The emergence of financial technology (FinTech) has significantly transformed the landscape for both financial start-ups and established banks, as it has become a crucial component of their strategic planning (Ashrafi et al., 2022).

The realm of FinTech extends beyond the domains of digital banking or enhancing the customer experience (Omarini, 2022). The focus is on utilizing technological advancements to create novel financial instruments that align with the preferences and requirements of the clientele (Gan et al., 2021). The field of FinTech offers vast opportunities for developing novel solutions that cater to the constantly changing financial needs of consumers (Northey et al., 2022). Thus, given the context, the application of artificial intelligence presents a distinct opportunity to expedite the financial sector's growth by providing improved value to users' and enhanced profits for firms. Bank of America has recently introduced a chatbot called Erica to provide assistance to its extensive customer base of more than one million individuals with basic financial inquiries, as reported by Rosman (2018). Furthermore, the Bank of Tokyo has implemented the utilization of a diminutive anthropomorphic robot named Nao. Nao operates along with human bank personnel and functions as a customer service agent across multiple branch sites, contributing an intriguing element to their customer service approach (Sabir et al., 2023). The use of artificial intelligence (AI) to facilitate or fully automate investment management, commonly known as "robo-advisors, has been the most disruptive innovation in the field of FinTech (Sabir et al., 2023; Northey et al., 2022). According to Tiberius et al. (2022), robo-advisory services offer a notable advantage over traditional human advisors due to their ability to provide continuous access to financial information and lower fees. Aw et al. (2023) posit that the integration of autonomous technologies is expected to enhance the accessibility of financial advisory services, thereby catering to a more diverse range of consumers. Therefore, financial institutions have initiated the launch of automated investment advisors as a means of maintaining their competitive advantage.

According to Chou et al. (2023), the adoption of financial robo-advisory services has been constrained, and the commercialization of these services may encounter obstacles if users maintain a negative view of innovative services. Gan et al. (2021) have pointed out that the adoption of this innovative system, which replaces conventional financial management practices, has been limited to a small number of early adopters. Digmayer (2022) posits that firms should aim to broaden the reach of their services beyond the initial group of early adopters and instead target a wider audience that may exhibit reluctance towards adopting new technologies. Therefore, with proper guidance on the effective implementation of robo-advisory services, managers can attract and retain both current and potential users.

The emergence of FinTech and AI-based applications has brought about new opportunities. However, there remains a significant gap in research on the implementation of robo-advisors. Most studies in this field have focused on technical or legal aspects, neglecting the crucial consumer perspective (Tiberius et al., 2022; Sanz Bayón and Vega, 2018; Bhatia et al., 2021; Glaser et al., 2019; Jung et al., 2018). Examining consumers' points of view could potentially enhance the adoption of robo-advisory services and attract more customers. On the other hand, the existing studies on robo-advisory service designs are scarce, and it has been suggested that these systems need to be more user-friendly to ensure effective interaction with users. Nonetheless, considering the vast potential for development, a comprehensive and holistic model is required to gain meaningful insights into the diverse customer base's key enablers and inhibitors for adopting financial robo-advisory services. The research questions of this study are the following: 1) What factors motivate and inhibit users' acceptance of financial robo-advisory

services? And 2) Does innovation resilience moderate the relationship between perceived value and users' propensity to use financial robo-advisory services?

The present study aims to examine the impact of driving factors, such as perceived enjoyment (PENJ), perceived performance (PPRF), and anthropomorphism (ANTPSM), on perceived value (PVLU) using the well-established dual factor theory. Furthermore, the study intends to investigate the influence of resisting factors, namely trust, complexity, and perceived security, on perceived risk and how it affects consumers' behavioral intention (BITN) towards adopting robo-advisory services. The study takes a holistic approach by considering both driving and resisting factors to provide a comprehensive understanding of the intricate interplay of factors that influence consumers' intentions to use robo-advisory services. The research seeks to determine how financial robo-advisory services can be more widely accepted by users by exploring the direct impact of perceived performance, complexity, perceived value, and perceived risk. The study seeks to investigate the role of innovation resilience (INVR) by examining its moderating effect on the relationship between perceived value and adoption behavior. Overall, the study's proposed research model seeks to determine the factors that drive and resist customers' adoption of AI-based robo-advisory services.

Our study makes the following contributions. Firstly, the study enhances the theoretical depth by proposing that value and risk have direct effects on consumers' decisions in the context of robo-advisory service adoption. Secondly, the study makes a contribution to the current literature on AI-based financial robo-advisory service acceptance through the integration of innovation resilience as a moderating component. Since consumers' innovation resilience may vary, the study's framework suggests that innovation resilience plays a moderating role in their decisions with regard to using such novel technology. Thirdly, this study integrates perceived performance into the model. Previous studies have established that perceived usefulness and ease of use are significant determinants of users' intentions to use robo-advisory services. However, there is a notable gap in the literature when it comes to examining the impact of perceived performance on users' adoption behavior. Despite its potential relevance, studies on this aspect remain scarce. Since perceived performance refers to users' perception of the extent to which a robo-advisory service meets their expectations and delivers its promised benefits, investigating the influence of perceived performance on users' adoption behavior would provide a more comprehensive understanding of the factors that motivate users to adopt robo-advisory services. Therefore, this study contributes by highlighting the effect of perceived performance on perceived value and intention in shaping users' adoption behavior towards robo-advisory services. Furthermore, businesses must better understand their customers' requirements and desires for the purpose of successfully introducing robo-advisory services in response to the financial industry's transformation. Due to a lack of sufficient empirical evidence to support the use of robo-advisors, this study enhances the existing body of literature by evaluating the significance of major drivers of consumers' choice to use robo-advisory services and analyzing how the adoption process and their behavioral intention are affected by consumers' perceptions of risk and value. Lastly, this study contributes by improving existing knowledge by adding anthropomorphism into the model to explain perceived value, leading to effective AI-driven innovation implementation that benefits companies and both existing and potential users.

THEORETICAL BACKGROUND

Dual Factor Theory

The current study employs the dual-factor model to examine the phenomenon of robo-advisory service adoption. Herzberg's dual-factor theory, which was introduced in 1966, posits that there are two distinct categories of needs that individuals possess. These needs can be fulfilled or unfulfilled by various factors present in the work environment. According to the theory, distinct sets of factors are responsible for determining both satisfaction and dissatisfaction. Job dissatisfaction can be influenced by hygiene

factors that are not directly linked to job performance. These factors may include the quality of supervision, organizational policies, job security, compensation, and the physical work environment. Motivation factors, such as recognition, reward, responsibilities, and job advancement, have a direct impact on job performance and satisfaction, as opposed to other factors that may have a different effect. The dual-factor theory posits that dissatisfaction and satisfaction are distinct constructs rather than opposite ends of a single continuum.

The present study draws on the dual-factor theory, a widely used framework in various studies that examine the adoption behavior of technology and information systems across different contexts. Previous studies by Bhattacharjee and Hikmet (2007), DeShields et al. (2005), Hsieh (2015), Hsieh and Lin (2018), and Zhang et al. (2017) have also employed this theoretical framework. The aforementioned studies examine the variables that influence individuals' inclination to accept or use technology, as well as the factors that impede their willingness to adopt robo-advisory services. The present study posits that the adoption behavior of robo-advisory services is subject to the influence of two contrasting perceptions, namely enabling and resisting perceptions. The study utilizes the concept of perceived value to determine the inclination of users towards adopting robo-advisory services, while perceived risk is employed to assess the resistance behavior of users towards the adoption of such services.

Previous studies have investigated how individuals use and resist new technology (Bhattacharjee and Hikmet, 2007; Hsieh, 2015; Hsieh and Lin, 2018; Norzaidi et al., 2008). Norzaidi et al. (2008) focused on users' behavior towards adopting healthcare IT and identified two opposing forces: resistance and intention to adopt. Similarly, Bhattacharjee and Hikmet (2007) examined the relationship between resistance and the intention to use new technology, finding a negative association between these two forces. Hsieh (2015) found a negative relationship between intention and resistance to use PharmaCloud, while Hsieh and Lin (2018) investigated the negative impact of "resistance to use" on "intention to use" in the case of PharmaCloud. In the field of AI, prior studies have not shed light on how the enablers and resisting factors impact users' intentions to adopt financial robo-advisory services. Hence, the dual factor theory was employed and incorporated into our study.

Therefore, we aim to investigate the effect of perceived enjoyment, perceived performance, and anthropomorphism on influencing users' willingness to adopt robo-advisory services. On the other hand, to examine resistance perception towards robo-advisory service adoption, perceived risk, complexity, trust, and perceived security have been employed as inhibitors. In other words, perceived value has been identified as a factor that encourages people to adopt robo-advisory services, while perceived risk is considered a factor that inhibits their willingness to adopt such services.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Perceived Enjoyment

Perceived enjoyment refers to the subjective assessment or evaluation of how much pleasure or enjoyment an individual experiences when engaging in a particular activity or using a certain product or service (Lowry et al., 2013). According to Venkatesh and Brown (2001), individuals may be inclined to engage in enjoyable activities due to a range of pleasurable and relaxing experiences. According to Roth and Strüber (2023), an individual's inclination to engage in an activity is primarily motivated by their perceived enjoyment, which is shaped by their pleasure and pain receptors. According to Chiengkul et al. (2023), individuals tend to view activities that are associated with perceived enjoyment as being personally motivated by pleasure and delight. Participating in stimulating activities has been found to be an inherent source of motivation for individuals, leading to increased involvement with mobile technology and subsequently influencing their behavior towards adopting it (Xie et al., 2021). According

to Skjuve et al. (2021), incentives provided for participation in activities that are perceived as enjoyable are typically perceived as pleasurable and satisfying. According to Singh et al. (2021), empirical research has demonstrated that perceived enjoyment is a crucial determinant of systems that drive value. Consequently, heightened levels of perceived motivation towards enjoyment may result in an augmented perception of value. Therefore, the following hypotheses are postulated:

H1a: Robo-advisory services are perceived to have a higher value when individuals exhibit a greater degree of perceived enjoyment.

H1b: The behavioral intention of customers to use robo-advisory services is positively influenced by increased levels of perceived enjoyment.

Anthropomorphism

Anthropomorphism refers to the attribution of human-like characteristics, traits, and behaviors to non-human entities such as animals, objects, or natural phenomena (Airenti, 2015). Anthropomorphism has received much interest among scholars in the past decade (Tian and Wang, 2022; Salles et al., 2020; Waytz et al., 2010). The investigation of anthropomorphism has become crucial in contemporary research, as it holds significant potential as a determining factor in the widespread acceptance of artificial intelligence (Li and Suh, 2022). The attribution of human-like qualities to non-human entities, known as anthropomorphism, has the effect of modifying individuals' connections with these entities as well as altering their emotional and cognitive reactions towards them (Wan and Chen, 2021). According to de Kloet and Yang (2022), the utilization of anthropomorphism can serve as an effective approach to augmenting the perceived value of products or services among consumers while also fostering a sense of trust. Previous research on AI-enabled devices has indicated that anthropomorphism has a positive influence on individuals' perceptions of technology (Jörling et al., 2020; Cheng et al., 2022). Given that robo-advisory services are AI-driven, users may be inclined to place greater trust in the functionality when robo-advisors exhibit human-like characteristics (Troshani et al., 2021). Individuals may possess a tendency to hold the belief that robo-advisors are capable of imitating human behavior and exhibiting rational decision-making abilities in response to real-time situations. Therefore, individuals hold the belief that robo-advisors have the potential to provide increased value and are motivated to accept such innovative technology. In light of the backdrop, the following hypothesis is postulated:

H2: Anthropomorphism positively influences users' perceived value in using robo-advisory services.

Perceived Performance

Perceived performance refers to the positive belief that an individual holds regarding the technology (Roca et al., 2006). This construct is represented by five distinct models: performance expectation (UTAUT/2), perceived usefulness in TAM/2 and combined TAM/TPB, extrinsic motivation in the Motivational Model (MM), job-fit in the Model of PC Utilization (MPCU), and relative advantage in the Diffusion of Innovations Theory (Iskender et al., 2022). The construct based on performance has demonstrated the highest level of predictability in every model with regards to the amount of variance explained in user intentions. Thus, an additional construct was incorporated and labeled "perceived performance. The "perceived performance" variable in our model is designed with reference to the perceived usefulness from the Technology Acceptance Model (TAM), performance expectancy from the Unified Theory of Acceptance and Use of Technology (UTAUT) and UTAUT2, and the relative advantage construct from the Diffusion of Innovations as perceived performance of a technology, which was proposed as a key component based on these theories (Venkatesh et al., 2003; Davis, 1989; Rogers and Shoemaker, 1971). The variable names in TAM, UTAUT, and UTAUT2 align with the corresponding construct of "perceived performance." However, the terminology used to label the "relative advantage"

construct in the Diffusion of Innovations theory was not congruent with the underlying concept. The variable of relative advantage assesses the perceived effectiveness of the technology, despite the potential incongruity between its terminology and the items used to measure performance. Henceforth, by reflecting on this, we have labeled the term "perceived performance." In our study, we propose that perceived performance will enhance users' perception of value and their intention to use robo-advisory services. Thus, we postulate the following hypotheses:

H3a: Perceived performance positively influences perceived value.

H3b: Perceived performance enhances users' behavioral intention to use robo-advisory services.

Perceived Value

The concept of value perception pertains to the customers' comprehensive evaluation of the effectiveness of products or services, grounded on their perceived exchange of benefits and costs (Zeithaml, 1988). Theories of behavioral decision-making posit that consumers' behavioral choices are primarily shaped by their comprehension of the trade-offs between the value of the outcome and the effort necessary to attain it (Ran et al., 2022; Payne, 1982). The concept of perceived value suggests that individuals may hold varying degrees of value perceptions for identical products or services (Cakici et al., 2019). The perceived value of a FinTech platform is subject to variation among consumers owing to individual differences in perception (Xie et al., 2021). The pricing value of new technology is influenced by a consumer's perception of the balance between perceived benefits and associated monetary costs during adoption (Shaw and Sergueeva, 2019). The aspect of perceived value's multidimensionality is frequently disregarded in its examination from the vantage point of benefits and costs. According to Jünger and Mietzner's (2020) research, the perception of price does not appear to influence the adoption behavior of FinTech. Thus, in order to attain a more comprehensive comprehension of the influences of value on the adoption behavior of individuals in diverse contexts, it is imperative (Sweeney and Soutar, 2011). According to Zeithaml's (1988) research, the concept of perceived value can manifest in either monetary or non-monetary forms. According to Zeithaml (1988), the monetary dimension pertains to the economic cost, whereas the non-monetary component primarily pertains to the non-monetary characteristics of the offerings, such as the efforts and time that are expended during the consumption process. Perceived value, as defined in this study, is the evaluation of FinTech platforms' overall utility by users based on the "given" and "received" aspects, in accordance with Zeithaml's (1988) concept. Behavioral decision theory posits that an individual's decision-making behavior is influenced by the interplay between the decision's utility and the cognitive effort required to make the decision, which is analogous to perceived value (Johnson and Payne, 1985). The present concept pertains to the evaluation made by users regarding the efficacy of FinTech-based platforms, which is primarily determined by two key factors, namely, "received" and "provided". The perception of value by a user is contingent upon their selection method, which in turn has an impact on their decision-making tendencies (Mishra et al., 2021).

In recent times, scholars have exhibited a growing inclination towards assessing the manner in which consumers perceive value and the consequential influence it has on their behavior. Perceived value has been identified as a significant factor in influencing customers' attitudes and behaviors towards products and services, as evidenced by various empirical studies (Woo and Kim, 2019; Ashrafi and Easmin, 2022; Ahmed et al., 2023). Ashrafi et al. (2021) and Ashrafi and Easmin (2023) found that the perceived value of a product or service has a significant effect on a customer's intention to utilize novel services. Kim et al. (2007) formulated the VAM (Value-Based Adoption Model) by integrating two theoretical frameworks, namely, consumer choice theory and decision-making theory. The authors showed that the perceived value construct describes the extent to which customers are inclined to accept M-internet. Purohit et al. (2022) have posited that value can be perceived by consumers during the transaction, utilization, or advancement of a product or service, and that it has a significant impact on

consumer behavior. The literature suggests that perceived value has been posited as a predictor of behavioral outcomes in the domain of social marketing (Gordon et al., 2018). However, other scholars have contended that utilitarian and hedonic values play a significant role in shaping individuals' online purchasing intentions (Fülöp et al., 2023; Joo and Yang, 2023; Ashrafi et al., 2021). Moreover, the adoption of an internet-based wealth management platform is perceived as a form of consumer behavior in the realm of financial services. Previous research has demonstrated a correlation between consumers' perceptions of value and their intentions to make purchases.

Therefore, it is hypothesized that the perceived value of FinTech platforms will influence individuals' intentions to adopt such platforms.

H4: An increase in perceived value is likely to positively influence customers' behavioral intentions to use robo-advisory services.

Complexity

The concept of "complexity" pertains to the degree of challenge that individuals encounter when interacting with technology (Barrot and Fernando, 2023). Previous studies have indicated that the higher the level of complexity associated with a given task, the lower the likelihood of its adoption by individuals (Al-Qudah et al., 2022; Pizam et al., 2022). While prior research has often used the terms "complexity" and "ease of use" interchangeably, it is important to note that there exists a conceptual distinction between an individual's evaluation of a task's complexity and their estimation of the level of exertion necessary to accomplish it (Reynolds and Ruiz de Maya, 2013). The present argument posits that complexity and perceived ease of use are two separate concepts. The rationale behind this claim is that perceived ease of use is a subjective assessment that is more intricate than an objective assessment of complexity. The latter is primarily a matter of task or interface design. According to Nowlis et al. (2010), the level of ease with which a task is perceived to be accomplished is contingent upon a multitude of factors, such as the constituent elements of the task, its mode of presentation, and the individual's pre-existing knowledge and familiarity with analogous tasks. Reynolds and Ruiz de Maya (2013) conducted a study on website revisit intention and found that complexity and perceived ease of use are distinct constructs. A number of scholarly investigations have been conducted in the field of robo-advisory services, examining the impact of perceived ease of use on individuals' inclination to adopt such services (Aw et al., 2023; Yeh et al., 2023; Belanche et al., 2019). As of the present, there has been a dearth of scholarly inquiry into the impact of complexity on the perceived risk that ultimately shapes the inclination to use robo-advisory services. Consequently, the present study integrated complexity into its model. Prior studies have indicated that the degree of complexity associated with the use of technological tools is a pivotal determinant in the acceptance of novel technologies (de Oliveira et al., 2022). According to Lavidas et al. (2022), the level of complexity of a technology is inversely proportional to its acceptance and adoption rate. The present investigation pertains to the concept of complexity, which denotes the degree of challenge that people encounter while employing service-oriented frameworks. According to Gan et al. (2021), novel technologies rely on computational algorithms to generate, execute, and oversee investment strategies. The Technology Acceptance Theory has incorporated constructs pertaining to technology complexity to add to the influence of perceived ease of use on intention. As far as current literature indicates, there has been no prior investigation that has integrated the influence of complexity in relation to perceived risk as a means of predicting users' inclinations towards adopting robo-advisory services.

Thus, we contend that this research will address the theoretical gap in robo-advisory service adoption and contribute to the perceived risk factors of adopting such services by incorporating technological complexity. Moreover, the greater complexity associated with using this technology may hinder users from making sound financial and investment decisions, leading to an increased perception of

risk and a negative impact on their decision to adopt robo-advisory services (Lavidas et al., 2022; de Oliveira et al., 2022).

H5a: The perceived risk associated with using robo-advisory services will increase with an increase in the level of complexity.

H5b: The complexity of robo-advisory services will have a negative effect on their adoption intentions.

Trust

The significance of trust in relation to the acceptance of financial technology-based services by users has been recognized as a critical factor (Falwadiya and Dhingra, 2022; Chan et al., 2022). According to recent research conducted by Tian et al. (2022), there is evidence to suggest that users tend to perceive lower levels of risk when they have established a sense of trust in the novel technologies they use. In the context of financial robo-advisory services, trust is particularly important since users are entrusting their financial investments to a technology-based system (Ashrafi et al., 2022). Research has shown that trust in the technology and the service provider is negatively related to perceived risk and positively related to adoption intention (Widyanto et al., 2022). The reason for this is that trust possesses the capability to diminish ambiguity and perceived risks in the implementation of such novel technologies (Faqih, 2022). Widyanto et al. (2022) have demonstrated that an absence of trust can lead to an escalation in perceived risk and a reduction in the probability of adoption. Therefore, when users lack trust, they may perceive the technology or service as unreliable, leading to a higher perceived risk. Hence, it is vital for financial institutions to establish credibility with their customer base through the provision of clear information and superior services. We argue that if users' have trust in technology, it will negatively impact their risk perception with regard to using financial robo-advisory services. Thus, we hypothesize the following:

H6: A greater degree of trust will negatively influence users' perceived risk to use robo-advisory services.

Perceived Security

Perceived security has been found to have a negative impact on users' perceived risk when it comes to the adoption of fintech services (Jangir et al., 2022). Research by Belanche et al. (2019) shows that perceived security concerns are one of the fundamental reasons why users may hesitate to adopt robo-advisory services. Ashrafi et al. (2022) highlighted that privacy and security concerns associated with mobile-based financial transactions may exacerbate perceived risk, thus hindering users' adoption intentions. Therefore, by contextualizing the prior findings, we posit that perceived security is an important factor to consider when developing and promoting financial robo-advisory services, as addressing security concerns may help reduce users' perceived risk and increase their willingness to adopt such services. The lack of trust in the security measures implemented by these services leads to an increase in perceived risk (Ashrafi et al., 2022). Users' personal and financial information is sensitive, and they require assurance that it will not be compromised by the service provider (Ashrafi et al., 2021). The fear of data breaches or cyber-attacks that may lead to financial losses, identity theft, or privacy invasion can lead to users avoiding these services altogether (Wylde et al., 2022). Therefore, financial robo-advisory services need to implement adequate security measures and communicate them effectively to users to increase their perceived security and reduce their perceived risk, ultimately increasing their intention to use these services.

H7: An increased level of perceived security will negatively impact users' perceived risk in using robo-advisory services.

Perceived Risk

According to Ashrafi et al. (2020), the acceptance of novel technology can be hindered by users' risk perceptions, potentially resulting in resistance towards engaging in online transactions. According to Kim et al. (2008), a decision-making model was developed to demonstrate that the inclination of customers to engage in online purchases is influenced by their perception of risk. According to Ashrafi et al. (2021), the ongoing retention of personal data on mobile devices exacerbates the privacy and security concerns associated with mobile-based financial transactions. The perception of risk is a crucial factor in research related to the adoption of FinTech due to the inherent risks associated with financial products (Chan et al., 2022). Wu and Liu (2023) found that the users' perception of risk had a negative impact on their likelihood to use mobile payments. Ashrafi et al. (2022) provided corroborating evidence for this finding in their investigation of ride-sharing services. Xu et al. (2023) conducted a study to examine the determinants of e-payment portal adoption and found that customers' perceived security significantly influenced their decision to use m-payment platforms. The presence of inherent uncertainty and financial risks in e-commerce may lead to a sense of reluctance among individuals towards the adoption of FinTech platforms. Perceived risk is regarded as a precursor that has an adverse impact on the inclination of consumers to use fintech-driven platforms.

H8: The perceived risk associated with robo-advisory services has a negative impact on adoption intention.

Moderating Role of Innovation Resilience

The concept of innovation resilience in the context of robo-advisory services pertains to the capacity of service providers to adjust and introduce novel approaches in reaction to shifts in the financial sector and users' interests and preferences while maintaining their commitment to delivering reliable and superior investment advice (Chiu, 2019; Lv et al., 2018; Gupta and Tham, 2018). It is the ability of firms to overcome challenges and disruptions and maintain their capacity for innovation and service improvement over an extended period (Mishra et al., 2022). The demonstration of innovation resilience can be attributed to several factors, including the consistent improvement and refinement of robo-advisory algorithms, the incorporation of additional financial services, and the adaptability to evolving market conditions and customer feedback (Huang et al., 2022; Akartuna et al., 2022).

We posit that the users' evaluation of the advantages they derive from using robo-advisory services and their intention to use robo-advisory services may be potentially influenced by innovation resilience. Specifically, we propose that innovation resilience may serve as a moderating variable in the association between perceived value and the intention to use robo-advisory services. Innovation resilience can moderate this relationship by influencing how users' perceive the platform's ability to maintain its value proposition over time. A platform that demonstrates innovation resilience by regularly updating its algorithms and features, integrating with other financial services, and responding to changing market conditions is more likely to be perceived as reliable and adaptable, and therefore more likely to foster value and trust in its users.

Contrarily, a platform that does not demonstrate innovation resilience may be perceived as outdated, unreliable, or unable to keep up with changing market conditions, which could negatively impact users' perceptions of its value propositions and their intention to use the services. Based on the backdrop of this discussion, the following hypothesis is formulated:

H9: Innovation resilience positively moderates the relationship between users’ perceived value and their intention to use robo-advisory services.

RESEARCH METHODOLOGY

Data Collection and Sampling

In order to collect the responses for this study, a Google form was utilized, and the participants were informed that their responses would remain confidential. The electronic questionnaire was distributed through social media platforms, investment-related associations, and discussion websites. The use of digital dissemination allowed for responses to be received from various locations throughout the eight divisions of Bangladesh between March and April 2023. A non-probability sampling technique known as purposive sampling was used to distribute the questionnaires, with only respondents meeting specific criteria being considered. The purposive sampling was carried out using the following method: 1. To be included, respondents had to be at least 18 years old, and 2. They were required to possess prior experience with internet banking, as this is a prerequisite for using robo-advisory services. According to Gan et al. (2021), robo-advisory services are more frequently used by those with e-banking experience and investment portfolios. Therefore, participants were intentionally selected based on specific criteria, making purposive sampling a more appropriate sampling technique for this study (Etikan et al., 2016).

The survey questionnaire comprised three distinct sections. In the first section, participants were provided with a brief written and visual explanation to clarify the study objectives as well as describe the user interface and operational features of robo-advisory platforms. Once the participants had viewed the video clip, they were directed to complete a questionnaire that assessed the variables of interest. Both exogenous and endogenous variables were evaluated using the questionnaire. Additionally, demographic information was gathered from the participants through a series of inquiries included in the survey. The study involved the distribution of 336 questionnaires to participants on a voluntary basis. After excluding incomplete questionnaires with missing responses, 272 valid responses were obtained.

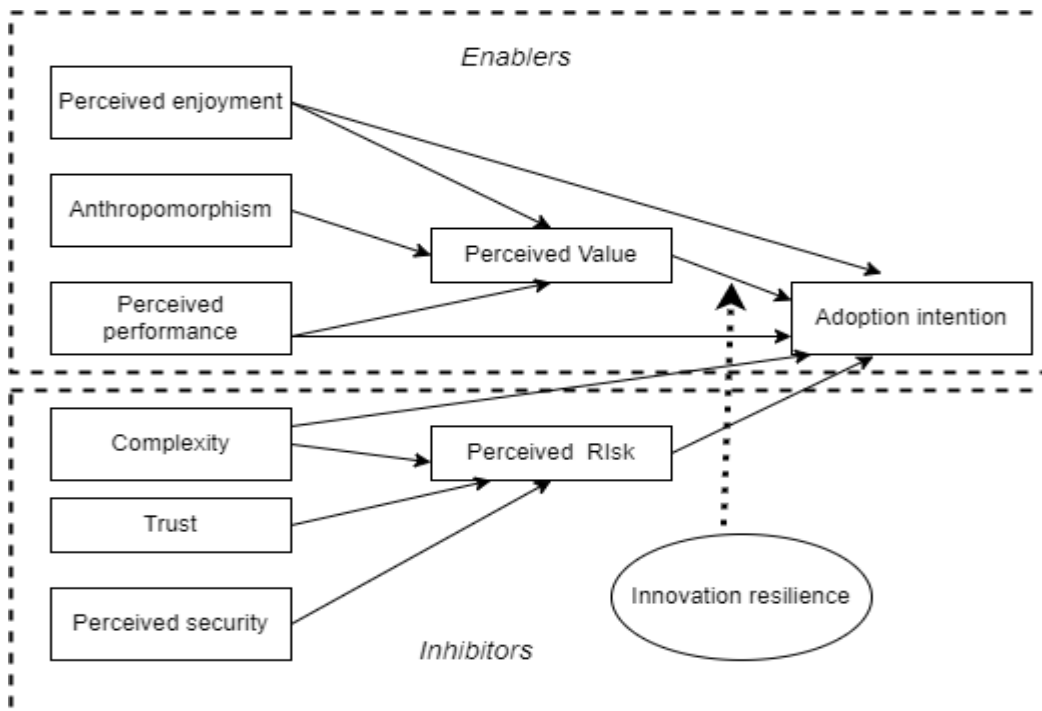


Figure 1: Framework of the study

Measures

The variables were measured using previously validated scales sourced from pertinent literature. The measurement of robo-advisory service adoption intention items was conducted by incorporating three items from Jaiswal and Kant's (2018) research. The present study utilized four measures to assess perceived performance and complexity, which were adapted from previous research conducted by Iskender et al. (2022) and Venkatesh et al. (2012). Furthermore, three items related to anthropomorphism were derived from the work of Nowak and Rauh (2008) and Powers and Kiesler (2006). The measurement of perceived enjoyment was conducted through the utilization of three items derived from the study conducted by Yi and Hwang (2003).

Four items were adapted from the study of Sweeney and Soutar (2001) to assess the users' perception of value. Four items were selected from the research of Yi et al. (2020) to assess the perception of risk. While trust was measured using three items from the studies of Singh and Sinha (2020), perceived security was measured with four items derived from the study of Salisbury et al. (2001). Furthermore, innovation resilience was measured by adapting four items from Fey and Kock's (2022) study. All the aforementioned items were customized to align with the framework of the robo-advisory service. The measuring scale utilized in this study was the five-point Likert scale, which consisted of two anchors denoting strong disagreement and strong agreement, respectively (1 = strongly disagree, 5 = strongly agree).

Questionnaire Distribution

The questionnaire was divided into three distinct sections. The introductory section of the study presented a succinct overview of robo-advisory services and the research objectives. The subsequent segment comprised a questionnaire designed to assess exogenous and endogenous variables. The subsequent section was incorporated to collect the demographic data of the participants. The demographic data of the respondents was analyzed using the Statistical Package for Social Sciences (SPSS). The survey results indicate that the majority of respondents (31%) fell within the age range of 25 to 29. Additionally, the sample population was comprised of 57% male and 43% female participants. The survey results indicate that 56% of the participants held a bachelor's degree, while 38% had completed a postgraduate degree.

ANALYSIS OF DATA

The study utilized PLS-SEM (partial least squares structural equation modeling) to investigate the proposed hypotheses. The utilization of PLS-SEM was driven by the limited sample size and reduced residual distribution, as reported by Wang et al. (2019). Moreover, the employment of the PLS-SEM methodology confers several benefits in the context of intricate and complex models, as stated by Hair et al. (2011). The utilization of SMART PLS 3.3.4 for data analysis has been justified on the basis of its superior precision and ability to ensure the reliability of the analysis, as noted by Risher and Hair Jr. (2017). The evaluation of composite reliability, a metric that assesses the internal consistency of data, was conducted as per the study by Hair et al. (2014). Subsequently, an assessment of the validity of the measurement model was conducted through the evaluation of convergent and discriminant validity. In addition, the assessment of the structural model was conducted through the utilization of the coefficient of determination and path coefficients.

Evaluation of the Measurement Model

To ensure a high level of internal consistency, the study evaluated composite reliability and assessed convergent validity using AVE and outer loadings. The composite reliability results, presented in Table 1, indicate that all variables met the minimum threshold of 0.70, in accordance with the recommendation of Hair et al. (2014). Retention of items with outer loadings exceeding 0.70 was advised, while removal of items with outer loadings between 0.40 and 0.60 resulted in an improvement in CR and AVE values. However, one item's outer loading concerning perceived security did not meet the required benchmark and was eliminated. Therefore, based on these findings, it is evident that all variables exceeded the recommended thresholds of 0.50 and 0.70 for AVE and composite reliability, respectively. Hence, the measurement model exhibited satisfactory levels of both reliability and validity. Discriminant validity was assessed to verify the distinctiveness of the variables in the proposed model. The HTMT ratio (heterotrait-monotrait ratio) was utilized for assessment. Table 2 displays HTMT values for all variables, which were found to be less than 0.90. According to the research conducted by Henseler et al. (2015), an HTMT value below 0.90 indicates the presence of discriminant validity. The Harman's single factor test was employed in our research to determine the existence of common method bias (Podsakoff and Organ, 1986). The aforementioned assessment is frequently employed in social science investigations to evaluate the probability of encountering common method bias, which pertains to the potential for bias to arise when relying on self-reported data from a singular source. The findings derived from the examination revealed that there was no singular component that accounted for a majority of the fluctuation, implying that the presence of common method bias was not a noteworthy concern in our investigation. In addition to Harman's single factor test, we also checked the inner VIF values to address the potential for common method bias in our study. The VIF values were calculated to assess the extent of multicollinearity among the variables included in our model. The results indicated that the VIF values were below the threshold of 5, indicating that there was no significant issue with multicollinearity or common method bias. This finding is consistent with previous studies that have also used VIF to examine the presence of common method bias in survey research (Podsakoff et al., 2003). Therefore, we can conclude that common method bias was not a significant issue in our study.

Table 1: Construct validity and reliability

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
BITN	0.812	0.841	0.684
PENJ	0.733	0.746	0.812
PPRF	0.814	0.824	0.762
ANTPSM	0.901	0.923	0.783
PRSK	0.846	0.857	0.804
PVLU	0.722	0.755	0.841
TRS	0.773	0.825	0.710
PSCR	0.875	0.892	0.806
CMP	0.733	0.762	0.783
INVR	0.822	0.852	0.717

Note. BITN, Behavioral intention; PENJ, Perceived enjoyment; PPRF, Perceived performance; ANTPSM, Anthropomorphism; PVLU, Perceived value; PRSK, Perceived risk; TRS, Trust; PSCR, Perceived security; CMP, Complexity; INVR, Innovation resilience

Table 2: Discriminant Validity (HTMT ratio)

	BITN	PENJ	PPRF	ANTPSM	PRSK	PVLU	TRS	PSCR	CMP	INVR
BITN										
PENJ	0.748									
PPRF	0.673	0.504								

ANTPSM	0.710	0.505	0.651						
PRSK	0.839	0.761	0.646	0.635					
PVLU	0.558	0.592	0.667	0.624	0.614				
TRS	0.813	0.607	0.614	0.656	0.695	0.412			
PSCR	0.713	0.680	0.572	0.763	0.720	0.532	0.670		
CMP	0.702	0.711	0.672	0.591	0.638	0.587	0.712	0.791	
INVR	0.681	0.546	0.716	0.628	0.752	0.581	0.752	0.674	0.714

Note. BITN, Behavioral intention; PENJ, Perceived enjoyment; PPRF, Perceived performance; ANTPSM, Anthropomorphism; PVLU, Perceived value; PRSK, Perceived risk; TRS, Trust; PSCR, Perceived security; CMP, Complexity; INVR, Innovation resilience

Evaluation of the Structural Model

The path coefficient values were used to evaluate the proposed hypotheses. Table 3 summarizes the findings. The findings indicate a positive association between perceived enjoyment and perceived value, thereby providing support for hypothesis H1a ($\beta_{1a} = 0.353, t = 5.410, p = 0.001$). However, perceived enjoyment did not have any significant impact on intention to use financial robo-advisors ($\beta_{1b} = 0.201, t = 1.851, p = 0.202$). Therefore, H1b was not supported. Similarly, the results showed that anthropomorphism had a statistically significant positive impact on perceived value ($\beta_2 = 0.316, t = 5.230, p = 0.002$), supporting H2. Perceived performance showed a positive association with both perceived value ($\beta_{3a} = 0.319, t = 3.42, p = 0.008$) and adoption intention ($\beta_{3b} = 0.268, t = 5.63, p = 0.003$), supporting H3a and H3b. Findings highlighted that perceived value had a significant positive impact on intention to use robo-advisory services, supporting H4 ($\beta_4 = 0.304, t = 5.056, p = 0.001$). While, complexity of using robo-advisory services had a significant negative influence on perceived risk ($\beta_{5a} = -0.268, t = 6.780, p = 0.001$), it demonstrated no significant impact on adoption intention ($\beta_{5b} = -0.139, t = 1.423, p = 0.231$). Henceforth, H5a was supported and H5b was not. Additionally, trust revealed a negative association with consumers' perceived risk of using robo-advisory services. ($\beta_6 = -0.158, t = 4.12, p = 0.001$). Thus, H6 was supported. Perceived security risk was revealed as a significant factor influencing perceived risk ($\beta_7 = -0.334, t = 5.62, p = 0.001$), supporting H7. Finally, our findings showed that adoption intention was negatively impacted by perceived risk ($\beta_8 = -0.292, t = 8.55, p = 0.001$), validating H8. Figure 2 displays the empirical model alongside the path coefficients and their corresponding levels of significance.

Table 3: Path analysis results

Hypothesis	Path(s)	Coefficients (Beta)	t value	p value	Decision
H1a	PENJ -> PVLU	0.353	5.41	0.001	Supported
H1b	PENJ -> BITN	0.201	1.851	0.202	Not Supported
H2	ANTPSM -> PVLU	0.316	5.23	0.002	Supported
H3a	PPRF -> PVLU	0.319	3.42	0.008	Supported
H3b	PPRF -> BITN	0.268	5.63	0.003	Supported
H4	PVLU -> BITN	0.304	5.056	0.001	Supported
H5a	CMP -> PRSK	0.268	6.78	0.001	Supported
H5b	CMP -> BITN	-0.139	1.423	0.231	Not Supported
H6	TRS -> PRSK	-0.158	4.12	0.001	Supported
H7	PSCR -> PRSK	-0.334	5.62	0.001	Supported
H8	PRSK -> BITN	-0.292	8.55	0.001	Supported

Note. BITN, Behavioral intention; PENJ, Perceived enjoyment; PPRF, Perceived performance; ANTPSM, Anthropomorphism; PVLU, Perceived value; PRSK, Perceived risk; TRS, Trust; PSCR, Perceived security; CMP, Complexity; INVR, Innovation resilience

The study tested whether innovation resilience moderated the relationship between perceived value and intention to use robo-advisory services. Findings revealed that an individual’s innovation resilience significantly moderated the association between consumers' perceived value and their adoption intention. Therefore, H9 was supported ($\beta_9 = 0.08, t=3.91, p=0.023$). In other words, the positive impact of consumers' perceived value on their intentions for adopting robo-advisory services was significantly increased by their innovation resilience. The concept of innovation resilience pertains to an individual's capacity to effectively manage the uncertainties that are inherent in innovation and to flexibly adjust to the changes that accompany it. Consequently, possessing a heightened degree of innovation resilience may prove advantageous for those seeking to use financial robo-advisory services. The ability to adapt to changes associated with the utilization of such novel services may enhance users' adaptability, potentially increasing their likelihood of sustained usage.

Table 4: Moderating impact of innovation resilience

Hypothesized path	Beta Coefficient	T-statistics	P value	Decision
PVLU * INVR -> BITN	0.08	3.91	0.023	Supported

Note. PVLU, Perceived value; INVR, Innovation resilience; BITN, Behavioral intention

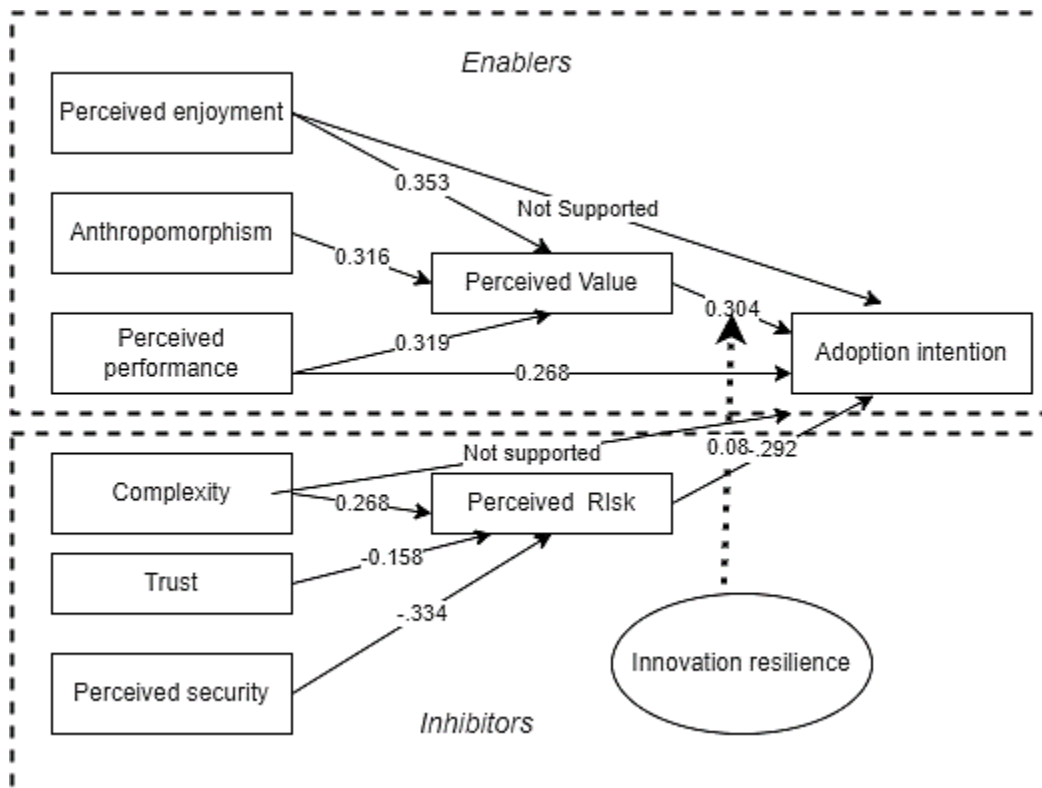


Figure 2: Results of path analysis

DISCUSSION

The present study indicates that an individual's intention to adopt financial robo-advisory services is significantly influenced by perceived performance, perceived value, and perceived risk. The potential reason for this outcome could be attributed to the absence of human intervention in the automated robo-advisory process, resulting in users' perception of higher performance in comparison to conventional financial advisors. Thus, users' perceptions of the performance of robo-advisory services may increase by making them more effective and reliable. The purported lack of emotional biases in the financial decision-making process of robo-advisors is thought to have influenced customers' inclination towards utilizing this form of advisory platform. As a result, there has been an increase in the acceptance of robo-advisory services. Previous research on novel technologies, such as Ashrafi and Easmin's (2023) and Iskender et al.'s (2022) studies, also found a strong correlation between perceived performance, perceived value, and willingness to adopt new technologies, which is consistent with the current findings. Adoption intentions for robo-advisory services were found to be inversely related to levels of perceived risk and complexity. As a result, lowering people's risk perception and usage intention can be accomplished by making robo-advisory services more accessible, intuitive, and simple to use. On the other hand, if customers view the service as overly complicated or hard to use, they may be less inclined to adopt such novel technology. The results are consistent with those of other studies, including those by de Oliveira et al. (2022) and Wu and Liu (2023).

The study found that although there was a positive correlation between perceived enjoyment and consumers' value perception, there was no significant impact on their intention to adopt. These findings are in line with those found by Punnoose (2012) and Singh et al. (2021). Individuals' pleasure and engagement with a service, according to Hohenberger et al. (2019), may not necessarily indicate a higher likelihood of adopting robo-advisory services, despite their assessment of their value. Given the financial risks connected with robo-advisory services, users' may regard perceived enjoyment as critical only when it adds value to using such innovative technologies. In other words, while people may consider a service to be more valuable if it gives them pleasure, engagement, and excitement, this does not always translate into a higher likelihood of adopting robo-advisory services. This could be due to the fact that consumers only value perceived enjoyment when it aids in the adoption of novel technology such as robo-advisory services.

Consistent with the findings of de Kloet and Yang (2022), our findings revealed that anthropomorphism positively influenced perceived value. One of the reasons behind the outcome might be that people are more inclined to respect their services and save more money when money and financial advisors are anthropomorphized. This is due to the fact that anthropomorphism can foster a relationship of trust and connection between the customer and the service provider, increasing the service provider's perceived warmth and intelligence. By fostering trust and rapport, raising perceived intellect, and evoking warmth, anthropomorphism may affect the perceived value of using financial robo-advisory services (Troshani et al., 2021). In other words, people are more inclined to follow investment advice from a robo-advisor that appears more human-like.

According to the study's findings, perceived security and trust showed a negative influence on perceived risk. Lower levels of perceived risk may result from stronger perceptions of security and trust. Customers are less likely to perceive the risk associated with using a payment system or online transaction if they sense a high level of security and trust in it. One explanation for the relationship is that consumers' reliance on a system's ability to safeguard their private information and conduct successful transactions can rise as a result of perceived security and trust. This enhanced trust may result in a reduced sense of transactional risk. This finding is consistent with the prior findings of Jangir et al. (2022) and Widyanto et al. (2022). Robo-advisors have surfaced as a substitute for traditional human advisors in the realm of financial and asset management. Consumers might, however, view their use as risky, which may be due to the fact that robo-advisory firms use computer algorithms to offer investment advice. This could lead to a rise in people's perceptions of risk. As a result, customers' desire to employ financial robo-

advisors may decline due to the perceived risk associated with these services. This finding contrasts with previous findings, from a theoretical standpoint, that suggest customers' perception of risk towards automated financial advisory services negatively affects their adoption intention (Wu and Liu, 2023; Xu et al., 2023). Furthermore, the findings corroborate the claim made by Gan et al. (2021) that customers exhibit a reduced tendency to adopt robo-advisory services when they perceive a greater degree of risk associated with making use of such innovative technology. Finally, the study's results indicate that the moderation effect of innovation resilience was observed in the relationship between perceived value and adoption intention. This effect was observed as a result of the influence of innovation resilience on users' perceptions of the platform's ability to sustain its value proposition over time. The aforementioned outcome may be explained by the fact that a platform exhibiting innovation resilience through frequent algorithm and feature updates, integration with other financial services, and responsiveness to evolving market conditions is more likely to be regarded as dependable and flexible. Consequently, such a platform is more likely to instill confidence and allegiance among its user base.

IMPLICATIONS

Implications for Theory

In order to determine how to predict customer perceptions of value and use of robo-advisory services, this study investigated anthropomorphism, perceived performance, and perceived enjoyment function. The study showed how customers' perceptions of value and risk influence how likely they are to adopt new technologies. The research findings indicate that anthropomorphism, perceived performance, and perceived enjoyment have a positive influence on perceived value. The focus of the research was also on how factors like robo-advisory service complexity, trust, and perceived security affect consumers' perceptions of risk and their propensity to use the technology. Previous research has indicated that the factors of perceived value and risk play a crucial role in determining the behavioral decision-making of consumers. Thus, the present research has facilitated the acquisition of a comprehensive and insightful understanding of the significance of value and risk in forecasting consumers' inclination to adopt such novel services. The research findings also shed light on the influence of risk, which leads to the hesitancy of consumers to adopt robo-advisory services.

Moreover, there is a dearth of literature that has concentrated on the role of innovation resilience as a moderating factor in the realm of robo-advisory services. Hence, our study contributes to the current body of literature by emphasizing the moderating influence of innovation resilience on the relationship between consumers' perceived value and their inclination to adopt robo-advisory services. This study aimed to investigate individuals' attitudes towards the adoption of robo-advisory services. The results of this study could provide valuable insights for service providers, legislators, and marketers in effectively and efficiently managing the associated value and risk.

Implications for Practice

The findings of this research have significant and broad impacts for providers of robo-advisory services, regulatory bodies, customers, and established financial advisory companies. Based on the results, it can be inferred that the perceived performance of financial robo-advisors has a noteworthy influence on their adoption. Furthermore, the advantages linked to robo-advisory services are becoming increasingly apparent due to the digital platform's capacity to provide automated financial and investment planning with minimal or no human intervention, all at a reasonable cost. The study's results emphasized the importance of customers' perceived enjoyment and complexity in relation to their perceived value and risk when adopting robo-advisory services. As a result, this offers marketers and policymakers useful information for improving the process so that it is more intriguing, engaging, user-friendly, and transparent. Robo-advisory services offer a simple and convenient way to manage financial wealth

without the need for human interaction. This ease of use could positively impact consumer perceptions and encourage more people to adopt robo-advisors for their financial management requirements. Moreover, in accordance with research results, anthropomorphism has the potential to promote the adoption of robo-advisory services. Studies have demonstrated that the application of mind-based anthropomorphism can augment individuals' social affiliation with AI-based entities (Moussawi and Koufaris, 2019). Despite users' anthropomorphic perceptions of robo-advisors, it is recommended for them to conduct a thorough investigation and evaluation of firms offering AI-based robo-advisory services prior to using such automated services. Organizations that possess robust reputations have the potential to promote higher degrees of assurance and minimize users' risk perceptions. This, in turn, may act as a precursor to the emergence of a greater reliance on robo-advisory services. The findings of the research will provide valuable insights for service providers in Bangladesh regarding the pivotal determinants that impact the acceptance of robo-advisory services.

This study indicates that perceived performance holds significant importance, and it is possible to motivate patrons of such services to disseminate their feedback on social media channels by means of ratings and reviews. (Gan et al., 2021). The aforementioned exposure possesses the capacity to stimulate a surge of consumers who accept such services. Robo-advisory service providers should undertake measures to safeguard the security and confidentiality of customer information through the implementation of awareness campaigns and advertisements. This would result in a reduction of risk and provide customers with a sense of security. In addition, firms can potentially improve consumers' perceived value by modifying their offerings according to risk profiling, thereby stimulating the adoption of AI-driven financial advisory services by individuals. Furthermore, the robo-advisory service industry can aid in raising prospective users' financial literacy and familiarity with robo-advisors as a category of automated financial advisors.

Moreover, it is possible for service providers to prioritize the needs of investors by highlighting the benefits of robo-advisors in comparison to traditional human advisors with regards to transparency, affordability, impartiality, and objectivity. Moreover, by focusing on the aforementioned factors, service providers can potentially broaden their base of customers. However, businesses can choose certain niches based on their customers' needs, risk tolerance, and other factors and then deliver services accordingly. The emergence of robo-advisors is disrupting the financial advisory sector, prompting traditional firms to consider offering comparable services in order to remain competitive. To enhance consumers' awareness and confidence in robo-advisory services, it may be necessary for regulators to launch educational initiatives aimed at informing customers about the benefits of transitioning to robo-advisory services. The emergence of robo-advisors has the potential to impact the effectiveness of conventional financial advisors, necessitating their adoption of automated online financial advisory technologies to sustain their relevance. In order to enhance customers' understanding and ease with robo-advisory services, it may be necessary for regulators to launch educational campaigns aimed at increasing awareness.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

One of the limitations of the study is its sole focus on the nation of Bangladesh. Future research on the adoption of robo-advisors may consider multiple nations. An additional limitation of this study is the omission of regulatory considerations within its scope. Conversely, the present study employed a quantitative methodology to arrive at its findings. An intriguing avenue of inquiry would be to examine whether the integration of quantitative and qualitative methodologies yields similar findings, thereby enhancing the overall reliability of conclusions pertaining to the adoption of financial robo-advisory services. Further studies could also incorporate regulatory challenges and the antecedents of the study. In order to improve the predictive efficacy of the proposed model, it is possible to integrate both extrinsic and intrinsic motivators. In order to gain a deeper understanding of the usage intentions of AI-powered

financial robo-advisory services by consumers, it may be beneficial for researchers to conduct a comprehensive investigation in the future. This study could incorporate mediating variables to explain the mechanisms underlying the mediating variables in predicting consumers' preferences to use robo-advisory services.

CONCLUSION

This research examines the various factors that impact the perceptions of customers regarding the value and risk associated with the adoption of financial robo-advisory services. The study reveals that anthropomorphism, perceived performance, and perceived enjoyment have a positive impact on perceived value. On the other hand, the complexity of robo-advisory services, trust, and perceived security influence consumers' perceptions of risk and their inclination to adopt the technology. The research underscores the significance of perceived value and risk as key determinants of consumer decision-making. It underscores the imperative for service providers, legislators, and marketers to successfully manage these factors to facilitate the utilization of innovative services. The research additionally highlights shortcomings in the existing body of knowledge concerning the function of innovation resilience in moderating the acceptance of robo-advisory services. The results indicate that the ability to withstand and recover from innovation-related challenges is a significant factor in the connection between customers' perceived value and their willingness to accept robo-advisory services. In general, the research offers noteworthy perspectives for service providers, policymakers, and advertisers to effectively address the value and risk associated with the acceptance of robo-advisory services.

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IMPACT OF CUSTOMER KNOWLEDGE AND DIGITAL PLATFORMS ON ONLINE ENTREPRENEURSHIP WITH THE MEDIATION OF DIGITAL INNOVATION

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ABSTRACT

This research aims to have a more holistic perspective on how digital technologies are transforming business models. The study has further explored industry-based factors such as digital platforms, customer knowledge, the emergence of online entrepreneurship, and digital innovation. Furthermore, the role of digital platforms and customer knowledge have been explored in the digitalization of business models which is impacting the dynamics of an online entrepreneur. The quantitative research methodology has been used to research while using questionnaires as a data collection instrument and convenience sampling have been used as a sampling technique. The data (n=200) has been collected from various individuals including entrepreneurs and freelancers from different companies, startups, and online marketplaces for freelance services. Through the statistical analysis, results have been obtained and all four hypotheses proposed in the research have been accepted. It has been found that digital platforms and customer knowledge provide entrepreneurs with a perfect fit for conducting their business in an online space. The research is of great significance as it provides the guiding platform for online entrepreneurs who want to start a successful venture through the most relevant customer knowledge and appropriate digital platforms. Furthermore, the disparity in research conducted on online entrepreneurship has contributed to further advances in academia as it has examined the relationship of online entrepreneurship with multiple variables.

Keywords: Online entrepreneurship, customer knowledge, digital platforms, digital innovation

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INTRODUCTION

The phenomenon of online entrepreneurship has been researched thoroughly in the light of various contexts, examining their influence factors, development, growth, maturity, and decline (Kraus et al., 2018). Online entrepreneurship has led individuals to recognize and pursue opportunities to find novel ways of conducting business which has indeed made an extensive outcome on the whole world (Nambisan, 2017; Qermane & Mancha, 2020). The development of online entrepreneurship is fueled by innovations in technology, communications, and smart gadgets (Wang et al, 2016). In addition to this, customer knowledge is now more widely accessible, and businesses can directly communicate with their consumers around the world without any hassle of being present physically. The existing literature has identified different dimensions of digital entrepreneurship and its contribution to economic growth (Beliaeva et al, 2019; Hull et al., 2007; Ulhøi, 2005).

In recent years, the world of entrepreneurship has greatly evolved as there is a large number of people indulging in conducting their businesses online (Wang et al., 2019). This is mainly due to the fact that digital platforms present numerous opportunities to entrepreneurs such as lower startup costs, global reach, and most importantly to communicate directly with potential consumers (Christensen, 2013; Satalkina & Steiner, 2020). The Schumpeterian viewpoint on entrepreneurship posits that entrepreneurs make some markets antiquated when developing new ones. This insight seems particularly useful for analyzing online entrepreneurship, as digital platforms and IT have provided new communication environments as well as new or significantly improved prospects, while simultaneously jeopardizing existing industries (Davidson & Vaast, 2010). At present time, technology has advanced enormously, where artificial intelligence and computer software can be used in parallel with human decision-making to enhance the quality of decisions and increase accuracy (Hull et al., 2007). The constant advancements and innovation in technology currently, have replaced the customary business models, as an unparalleled revolution of economic and social activities has emerged (Sussan & Acs, 2017). The rising interest from researchers in online entrepreneurship and innovation in digitalization is visible from the increasing numbers of articles being published in various academic articles, mainly over the past 6 to 7 years. Online entrepreneurship is closely linked with the economic growth of a country (Audretsch, 2007). Many countries have realized the significance of online entrepreneurship for the growth of the economy and have therefore invested resources for development in these areas (Wang et al, 2016). By looking at past studies, researchers have provided information on entrepreneurship that is dissimilar from this. On the other hand, online entrepreneurship uses a different platform as it integrates with the internet to offer its unique value proposition (Satalkina & Steiner, 2020). As per Oppong, Singh and Kujur (2020), customers use digital platforms and interact with these online entrepreneurs to find a solution without going through the hassle of visiting stores, therefore they need to have appropriate skills and knowledge to meet these needs. Furthermore, the trend over the years shows innovation in digital technology is playing a vital role in the emergence of online entrepreneurship (Beliaeva et al, 2019). Berger et al., (2019) have found that an increase in online entrepreneurship is a consequence that happens through the support of digital innovation. The success of online entrepreneurs is greatly influenced by digital innovation, as each day new technologies are being introduced that shorten the time to conduct business and increase profits (Lee & Kim, 2007). Moreover, the increased participation of individuals in online entrepreneurship is also influenced by the ability to gather customer knowledge through numerous methods which helps in conducting business more efficiently while minimizing risks and providing immense opportunities (Illus, 2018). In this study dynamics of online entrepreneurship have been examined while studying the dynamics of the innovation ecosystem and how it is shaped through customer knowledge and digital platforms.

The emphasis of this study is on the use of online entrepreneurs' user knowledge that determines decisions about the creation or delivery of a product/service to satisfy the needs of their target audience

along with the use of digital channels to digitally evolve the online entrepreneurship industry. Currently, customers and online entrepreneurs can communicate instantly and effectively without the need of being physically present (Kraus et al, 2019). With enhancements in communication systems, online entrepreneurs are efficiently able to communicate with their potential customers through the use of the internet. Through this effective communication, they can provide products and services the way consumers demand and hence maintain an inflow of profitability. Furthermore, online entrepreneurs are successfully able to gather data regarding their consumers and use this information to further enhance their product offerings to increase the level of satisfaction that consumers drive from their products or services (Qermane & Mancha, 2020). Customer knowledge is considered very crucial for every business which is an insight of consumers regarding what you are offering and how you can further improve it (Falasca et al, 2017). Traditional businesses spend an amount of money depending on their organization size to gather consumer insights whereas online entrepreneurs can obtain customer knowledge without making high investments.

In the last decade, digital platforms have proven to be quite a burgeoning source of business innovations and carry out various decision-making processes using customer knowledge and insights (Satalkina & Steiner, 2020). However, not a significant amount of research has been conducted over the previous decade to determine the overall impact of digital platforms in association with knowledge about the customers, and on entrepreneurial business opportunities created through the internet (Nambisan et al., 2019). Secondly, previous literature has not investigated much that how digital platforms and customer knowledge are shaping/influencing the digital innovation process of online entrepreneurs. The theoretical framework of this research helps to examine how online entrepreneurship is influenced by the implementation of digital platforms, increased customer knowledge, and the role of digital innovation. The purpose of this study is to analyze how online entrepreneurs have benefitted from innovation in digitalization and are playing a significant role in progressing economic growth and benefitting society.

LITERATURE REVIEW

Online Entrepreneurship

Online entrepreneurship is a term used in literature, and several researchers have proposed multiple interpretations to describe it. According to Wang et al., (2016) online entrepreneurship refers to starting a business using information technologies and then making similar business transactions exclusively over digital platforms. While some researchers propose that, online entrepreneurship is a sub-category of entrepreneurship in which any or more of what might be tangible has now been digitized in a typical business (Hull et al, 2007). It is generally accepted that online entrepreneurship encompasses the web as a key component of its business model (Devsaran, 2017). Online entrepreneurship is identified in a recent study as the careful consideration of technological innovations and their distinctive features in shaping entrepreneurial pursuits (Nambisan, 2017). Online entrepreneurship has also been explained as selling digital products or services over online mediums (Guthrie, 2014). In general, online entrepreneurship applies to the development of new enterprises and the transformation of traditional businesses by the adoption of new digital technologies and/or the innovative use of those technologies (European Commission, 2015; Ferreira, Fernandes & Ferreira, 2019; Shen et al., 2018).

Customer Knowledge

Customers' knowledge and insights regarding their behavior; buying pattern, response to innovation, motivation to buy different products/services, how their needs are generated, etc. are imperative to a business's success (Taherparvar et al., 2014). In addition to that it is a crucial element of

organizational knowledge management as well (Liao et al., 2012). The concept of customer knowledge is of utmost importance to organizations because of the sizeable knowledge bank of its customers a business has. It is more likely that they will be capable enough to respond faster to the varying and continuously changing needs and demands of consumers (Jayachandran et al., 2004). Customer knowledge is mainly defined as organization-wide learning skills of obtaining and generating relevant customer information, analyzing and evaluating datasets of these customers to further use it for innovation and product/services development purposes (Najat, 2017). For an organization to succeed and have a competitive edge over its competitors in its current industry, retaining a substantial amount of knowledge is vital in the digital age where there are numerous mediums and digital platforms to obtain large amounts of unstructured customer analytics (Hossain et al., 2020).

Digital platform

Digital platforms are rising and a keen source of interest in various business industries and among new online entrepreneurs and as well managing major economic and political activities (Asadullah et al., 2018). Recently, digital platforms have become the main source of carrying out activities such as economic, political, social, etc. A business landscape transformation is witnessed in this particular decade with the emergence of different categories of a digital platform that has altered the conventional methods and ways of conducting business to a more digital specified scene. Namely, service-oriented (Uber, Careem, Airbnb) media sharing (YouTube, etc.), social media (Facebook, Instagram, LinkedIn, etc.), and communications applications (WhatsApp, Slack, Skype, etc.) (Watts, 2020). Gradually as information and communications technology is evolving it is coming up with new digital platforms which in exchange are facilitating entrepreneurs and are also creating new avenues for businesses such as mobile commerce (Elia et al., 2018). At the very core, digital platforms are internet-based web 2.0 applications that facilitate two major groups i.e., businesses and customers to interact with each other online through mediums such as social media platforms, electronic and mobile commerce, etc. (Reuver et al, 2018). As digital platforms provide a broad range of possibilities it also aids governments in alleviating poverty in society (Jha et al., 2016; Holtgrewe, 2014).

Digital Innovation

Digital innovation is the transformation of products, services, processes, and business models using digital technology platforms within and across business components (Yoo et al., 2010). Digital innovation is bringing opportunity and empowerment for customers, industries, and governments in this new era of global connectivity. For sustainable expansion goals and addressing entrepreneurial challenges, digital technologies hold huge potential for achieving that. The services that contain digital deliverables include data trading, and critical resources with extraordinary velocity and volume (Demirkan, 2016). Digital innovation provides an opportunity for entrepreneurs to digitize their products and services. They can utilize digital technology to solve traditional problems innovatively. Innovation redefines how business can be done to achieve optimal performance (Henfridsson et al., 2014; Svahn et al., 2017). Digitization is the connectivity of business and everything is connected to everything else, now the world going through this revolution currently (Kagermann, 2015).

Underpinning theory

Entrepreneurship theory is penned by Drucker and Stevenson (1985). As the name of the theory itself, this theory lay out a wide array of frames of references to study entrepreneurial research and analysis (Fiet, 2002; Shane, 2000). In the opportunity-based entrepreneurship theory, the authors debate that entrepreneurs would be much more competitive if they are better able to capitalize on the opportunities and possibilities presented to them by technological, cultural, and social changes (Drucker,

1985). So, entrepreneurs bring about change when they leverage these factors to the best of their abilities. But they do not drive this change themselves and exploit the changing environment and factors. Drucker says that entrepreneurs are always in search of environmental changes that lead to an increasing number of opportunities rather than focusing on the problem as a result of transitions. Stevenson further refines this theory in his study carried out to compare entrepreneurial and administrative management, in which he included the element of resourcefulness. In the evaluation of his study, Stevenson identified that it is not that resources that make an entrepreneur what they are, but their pursuit of opportunity (Stevenson & Jarillo., 2007). The theory links to the framework that facilitates online entrepreneurs in providing them with technological components in the form of internet and its associated digital platforms, cultural and social components in the shape of a wide variety of customer knowledge to create digital innovation.

In the context of the current study being carried out, the purpose of the dependent variable i.e., online entrepreneurship is primarily setting up a business online for ease and maximizing productivity. According to user innovation theory, customers can play an active role in the innovation process by providing feedback, ideas and suggestions to entrepreneurs. Online entrepreneurs can then capitalize on factors including customer knowledge - changing consumer preferences, behaviors, etc. The main opportunity, in this case, is digital innovation that can be targeted at consumers using digital platforms. Digital platforms could be used for analyzing customer knowledge, and after evaluating it, online entrepreneurs can innovate their work to appeal to an even larger audience. The advent of digital platforms has made it even easier for online entrepreneurs to harness the flow of information, i.e., customer knowledge, and put it to better use for business intelligence that could assist them in digitally innovating to gain a competitive edge. Access to quality information that is gathered through interaction between actors enables innovation in systems. Dissemination of key information regarding customer needs, insights, and knowledge on the internet has led to the creation of enterprises that make use of such information and appropriate digital platforms to develop products/services according to customer needs.

HYPOTHESES DEVELOPMENT

Customer Knowledge & Online Entrepreneurship

According to recent data more than 4.57 billion of the world's population has internet access, and more than 3.6 billion make use of social media in their daily lives (Internet World Stats, 2020). This population size points out to online entrepreneurs who have vast ranges of information that they can use to create digital innovations decisions and also create unconventional new business frameworks (Flowers & Meyer, 2020).

The emergence of the internet over the last decades has materially enhanced how consumers buy products and services online (Ferreira, Fernandes & Ferreira, 2019; Grewal et al., 2009; Shen et al., 2018). As a result, notable changes have been observed that have transformed the retailing business, benefiting online entrepreneurs a great deal (Micu et al., 2019). Many entrepreneurs have already embraced the internet as their main business channel for carrying out major operations. Now online entrepreneurs are in pursuit of capitalizing on their abilities to create value for customers, that will set them apart from the traditional market, and help them increase efficiencies and gain customer loyalties by realizing customers' knowledge (Henri 2013). Subsequently, it has been noticed that competition has also increased, and a greater number of entrepreneurs go online and market their products and services. Businesses have realized the importance of customer knowledge management and how it positively contributes to their overall strategy (Hull et al., 2000). A paradigm shift and more customer-centric approach in modern businesses reflect the fact that sophisticated customer knowledge management is substantial to their business models (Lee, 2015). Similarly, in the digital business space, online entrepreneurs identify the customers with varying preferences and needs and therefore compete against

providing the best value by utilizing customer big data available across different digital platforms and coming up with highly customized experiences and services for individual users (Liao et al., 2010). Online entrepreneurship is substantially beneficial given the unprecedented opportunities it provides in close interaction and engagement with the customer in this digital economy. Further to this, online entrepreneurs have vast ranges of information that they can use to create digital innovations decisions and also create unconventional new business frameworks (Flowers & Meyer, 2020). In this context, it means that every single interaction and customer behavior pattern can be recorded and monitored which can be further used to evaluate customer analytics, which can prove to be a precious source of business intelligence (Chang-Lee, 2015). In the light of above literature, the following hypothesis has been proposed:

H1: There is a positive relationship between customer knowledge and online entrepreneurship.

Digital Platforms and Online Entrepreneurship

When it comes to online entrepreneurship, IT (information technology) and web entrepreneurship are both interrelated. Online entrepreneurs tend to use different digital platforms to operate their entrepreneurial activities which leads to digital innovation (Gregori & Holzmann, 2020). The author further suggested that companies with better levels of digital innovation are more likely to be successful online entrepreneurs. The use of digital platforms not only facilitates the transformation of existing ventures, but it helps online entrepreneurs to use different ways for executing business strategies. Balli (2020) stated that it is possible to describe digital entrepreneurship as the realization of entrepreneurship on digital platforms. Another research by Briel et al., (2018) highlighted the importance of these digital platforms in the smooth running of operations and even generating opportunities for online entrepreneurs.

Digital platforms not only offer effective production of integrative products and services but offers a range of opportunities for startups/businesses (Briel et al., 2018; Gregori & Holzmann, 2020). The value of digital media as a medium of entrepreneurship has elucidated the interrelation between technological platforms and online entrepreneurship, which is further illustrated by the potential among emerging businesses to expand their expertise while offsetting their capacity for development, distribution, and marketing (Huang et al., 2009; Zahra & Nambisan, 2011). The influence of digital platforms in online entrepreneurship has been further illustrated in other studies such as Parker et al (2016) who said that technological platforms allow multivariate requirements and fully customized services to be matched in real-time. It is often referred to as cyber-entrepreneurship due to the use of technological platforms and the internet to handle and conduct routine business operations with customers and stakeholders (Shabbir et al., 2016; Ismail et al., 2012).

The authors further added that online technological platforms also allow novice startups to create or develop products and services that supplement those operated by the platform. The advent of digital networks and related environments has brought entrepreneurship a new and potentially significant meaning. (Nambisan, 2017; Nambisan et al., 2019; Briel et al., 2018). Nambisan (2017) suggested that the use of digital media facilitates the business model and creates extra revenue and opportunities to maximize wealth. The author further added that the availability of information regarding the target market itself is one heck of a blessing that is easily accessible now to the entrepreneurs.

Digital platforms have allowed new business ventures and digital start-ups to be established, integrating novel technologies as an integral component of their business strategies and practices. That proves that digital platforms are indeed the facilitators of online entrepreneurial operations (Von et al., 2018). Digital platforms exhibit themselves in different ways, such as online services or goods (Nambisan et al., 2017). The influence of IT and emerging digital platforms on business innovation and

online entrepreneurship is multifaceted since these can be a facilitator, intermediaries, or results of entrepreneurial activities (Steininger, 2018). Technological innovations contribute to the modernization of online entrepreneurship and encourage aspiring entrepreneurs with tools such as social media, crowd-funding systems, 3D printing, and image processing to help reduce the constraints between innovation and the development of new startups (Kelly, 2016). Referring to the literature, the following hypothesis has been proposed:

H2: There is a positive relationship between digital platforms and online entrepreneurship.

Mediating Role of Digital Innovation

Understanding the nature of digital innovation is important for a business to develop and innovate effectively. Digital transformation and change are correlated as to innovate the mindset to accept change is required in a business culture. It is the dynamic capability of an entrepreneur to change and grow. Baregheh, Rowley, and Sambrook (2009) view digital innovation as a multi-level framework where businesses transform their ideas into innovative products, services, business models, and processes, to have a unique identity in the marketplace they are successfully serving (Caruso, 2018; Dery, 2017). Moreover, these businesses can transform quicker and succeed where others fall behind in understanding digital innovation solutions (Tumbas, 2018). Ylijoki (2019) suggested that digital innovation can be used to resolve problems and stimulate growth between digital platforms, customer knowledge, and online entrepreneurship. It implies business redesign and growth that are technology driven. Online entrepreneurs are always seeking new technology and data-driven innovations. Data generated in the form of customer knowledge and digital platforms is further utilized to adopt innovation that eventually improve online entrepreneurs' business models and processes (Ylijoki, 2019). Online entrepreneurs have encouraged a culture of innovation within their businesses (Abrell, 2016).

Customer knowledge plays a key role in digital innovation, which in turn leads to online entrepreneurship. Customer knowledge is understanding customers' needs, preferences, behaviors and attitudes towards products and services. It enables entrepreneurs to develop innovative products and services that meet customer needs and preferences. The more knowledge business owners have about their customers, the better they can tailor services to their needs, resulting in higher customer satisfaction and retention. Increased knowledge about the latest technologies and their usefulness also leads to digital innovation and encourages entrepreneurs to engage in entrepreneurial activities (Paul et al., 2023). According to user innovation theory, customers can play an active role in the innovation process by providing feedback, ideas and suggestions to entrepreneurs. This theory suggests that entrepreneurs who engage customers in innovation are more likely to create successful products and services because they are better suited to customers' needs and preferences. As a result, entrepreneurs who better understand customer insights can leverage it to drive digital innovation and ultimately online business success.

Digital platforms also play an important role in digital innovation and online entrepreneurship. Skilled entrepreneurs with knowledge about digital technologies consider more to carry their business processes through online mediums (Zhai et al., 2023). Digital platforms provide entrepreneurs with access to a variety of resources, including customer data, market intelligence, and technology. This access can enable entrepreneurs to create innovative products and services that meet customer needs.

Entrepreneurs have redesigned their business processes while using data to help them define innovation. Technologists design new business models that lead to creating a much more successful business with the aid of digital platforms (Kraus, 2019). Additionally, digital platforms provide a way for entrepreneurs to connect with their customers and gather feedback on their products and services. This feedback can be used to improve their services and drive innovation. For example, online marketplaces

like Amazon and Etsy allow entrepreneurs to showcase their products to large audiences and gather feedback on services they can use to iterate and improve. Furthermore, the strategy is to create a competitive advantage where digital businesses and their culture of innovation sustains (Brunswick, 2015).

Both knowledge of customers and digital platforms plays an essential role in digital innovation and, therefore, in the success of an online business. People with a better understanding of customers and access to digital platforms can be very helpful in exploiting existing business opportunities and becoming online entrepreneurs (Fernande et al, 2022). Entrepreneurs with a deep understanding of customer needs and preferences can leverage this knowledge to create innovative products and services. Digital platforms provide entrepreneurs with access to a wide range of resources, allowing them to create innovative solutions and connect with their customers. As a result, entrepreneurs who prioritize knowledge of their customers and digital platforms are more likely to succeed in the digital economy. In the organization as a whole, it should be implemented with the right people in the right places, and for a culture of innovation to perpetuate, technology and communications are highly important (Hukal & Henfridsson, 2017). In light of the above literature, the following hypotheses have been proposed.

H3: Digital Innovation mediates the relationship between customer knowledge and online entrepreneurship.

H4: Digital Innovation mediates the relationship between digital platforms and online entrepreneurship

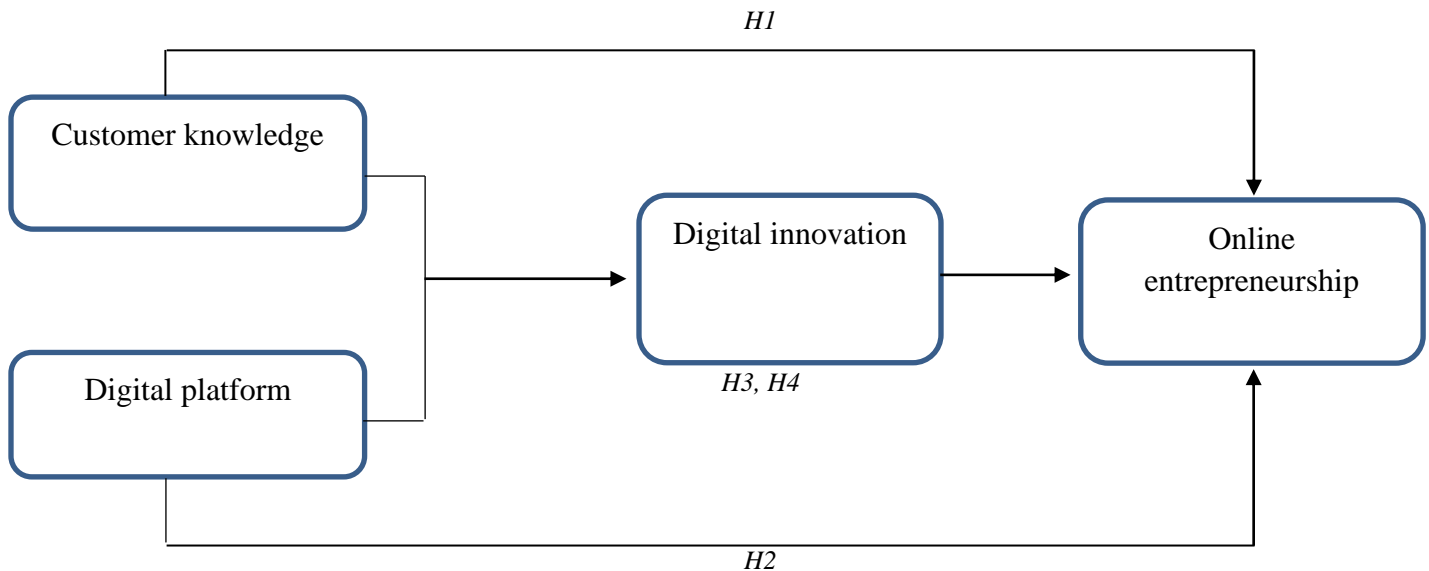


Figure 1: Theoretical framework

METHODOLOGY

Sample and Data Collection

This deductive research examines the relationship of how online entrepreneurship is influenced by the implementation of digital platforms, increased customer knowledge, and the role of digital

innovation. This is quantitative research; for which the data has been collected by using convenience sampling. Data has been gathered primarily by distributing questionnaires over the internet to online entrepreneurs operating in different areas of Pakistan. The sample size of the target group was 200. Sample includes the participants with age level of 15 to above 30. The criteria have been set and considered as ethical, as teenagers are also start to look for digital platforms and entrepreneurial opportunities to manage their financial expenses. The age level of respondents is more than 15 years while results have shown that most of the participants are 21-25 years old. Data has been gathered from the people who are working in different companies (i.e., private or public sector companies or self-employed) and belong to different income level groups and professions.

Measures

The data for this research was collected through a questionnaire that was adapted from previous research. Multi-item scales for all of the measures have been used. Responses were obtained on seven-point Likert-type scales, with anchors appropriately labeled (for example, 1= Strongly Disagree; 7= Strongly Agree).

Digital Platforms

The digital platform is measured using the Tolboom (2016) scale, which is made up of 6 items. The respondents were asked several questions assessing the role of digital platforms to evaluate business value propositions, and purchase/delivery/management/marketing and sale of goods and services.

Customer Knowledge

Customer knowledge is measured using the Miao, Fred, Wang, and Guangping (2016) scale, which is made up of 9 items measured using a 7-point numerical scale. The respondents were asked questions that help examine the relationship between customers and entrepreneurs. The items in the scale included questions that show how actively the seller/entrepreneur engages with the customers and on which level.

Digital Innovation

Digital innovation is measured using the Scoop (2020) scale, which is made up of 6 items measured using a 7-point numerical scale. The measurement scale used for Digital Innovation assesses the role of customer knowledge and digital platforms in the innovation of the digital venture/startup/enterprise.

Online Entrepreneurship

Online entrepreneurship is measured using the Chatterjee, Debabroto, Sambamurthy and Grewal (2002) scale, which is made up of 10 items measured using a 7-point numerical scale. A scale was chosen and adapted according to the theoretical framework.

RESULTS

To compute statistical results, structural equation modeling has been used and the whole model was run in Smart PLS-3 software. As suggested by Ramayah, Yeap, and Ignatius, (2013) bootstrapping technique has been used to analyze the data and perform path analysis. Anderson and Gerbing (1988) recommended a two-stage analytical procedure, the measurement model's goodness and validity were

tested after which the relationships outlined in the structural model have been examined. Also, the mediating role of corporate digital innovation was computed; these results are discussed and elaborated in the forthcoming sub-sections.

Demographics Statistics

In the study, 200 respondents were included and the findings indicated that 112 of them were males while 83 were females. This means that there was a 56% ratio of males in this sample and a 41.5% ratio was females. The other analyzed characteristics of the sample include age, education level, and personal income. Table 1 includes details of demographic details of the sample.

Table 1: Demographic of respondents

Items	Categories	Percentile (%)
Gender	Male	41.5
	Female	56
	Prefer not to say	2
	Other	0.5
Age	15-20	6.5
	21-25	36.5
	26-30	31
	Above 30	26
Education	High school	7.5
	Graduate	13.5
	Technical training	4
	Bachelor	43.5
Personal Income (Pakistani rupees)	Master's	31.5
	Less than 40,000	20
	40,000-80,000	15
	81,000-120,000	18
	121,000-200,000	18.5
	Above 200,000	12.5
	Prefer not to say	16

Source: Authors

Table 2 includes Pearson's correlation coefficient indicating the nature of the relationship among variables. The value of Pearson Correlation with two stars indicates that we are 99.9% satisfied with the value of the result. Table 2 also includes values of Cronbach alpha which shows the internal consistency of items used to measure the constructs. The value of Cronbach's alpha for all variables is above 0.9 which shows very good reliability.

Table 2: Pearson’s correlation

	1	2	3	4
Customer Knowledge	(0.970)			
Online Entrepreneurship	.813**	(0.912)		
Digital Innovation	.507**	.685**	(0.966)	
Digital Platform	.509**	.503**	.347**	(0.93)

**Correlation is significant at the 0.01 level (2-tailed)

Measurement Model Assessment

To validate the model, measurement model assessment has been performed as the first step in structural equation modeling (SEM) analysis. At this step, the reliability and validity of data are established.

Hetrotrait Monotrait (HTMT) ratio

The next step is to check discriminant validity using Hetrotrait Monotrait (HTMT) ratio. SmartPLS-3 Hetrotrait Monotrait (HTMT) ratio of correlation is considered more reliable (Henseler, Ringle, & Sarstedt, 2015). Following this, HTMT results have been analyzed, as shown in Table 3. As per Henseler et al, the value of HTMT should be less than 0.9. Table 3 includes the values of discriminant validity using the HTMT ratio for all the constructs.

Table 3: Discriminant Validity: HTMT

	1	2	3	4
Customer knowledge	-			
Digital platform	0.695	-		
Digital innovation	0.831	0.686	-	
Digital entrepreneurship	0.345	0.666	0.893	-

Structural Estimation Model

For estimating the structural model, the bootstrapping technique has been used to generate the t-values. Bootstrapping has been performed in steps and the model was run as a whole. 90 percent significance level has been decided while performing the results. As per Ringle, Wende, and Becker (2015) 90% confidence interval can be used for a smaller sample size. The findings have indicated that there is a positive relationship between customer knowledge and online entrepreneurship ($\beta=0.686$, $p=0.000$). Further, there is a positive relationship between digital platforms and online entrepreneurship ($\beta=0.195$, $p=0.09$). The results have indicated that digital innovation plays mediating role between customer knowledge and online entrepreneurship ($\beta=0.603$, $p=0.000$), and between the digital platform and online entrepreneurship ($\beta=0.171$, $p=0.091$). As per the findings, a significant direct relationship

between customer knowledge, online platforms, and online entrepreneurship, further mediation of digital innovation has been observed. Table 4 presents details of path analysis for all four relationships which have been tested. Figure 2 depicts the bootstrapping results obtained from structural equational modeling.

Table 4: Statistical results of path analysis

Sr.no	Relationship	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
1	CK -> OE	0.834	0.893	0.193	4.321	0.000
2	DP -> OE	0.587	0.539	0.180	3.262	0.001
3	CK ->DI ->OE	0.603	0.600	0.134	4.487	0.000
4	DP ->DI ->OE	0.171	0.166	0.101	1.689	0.091

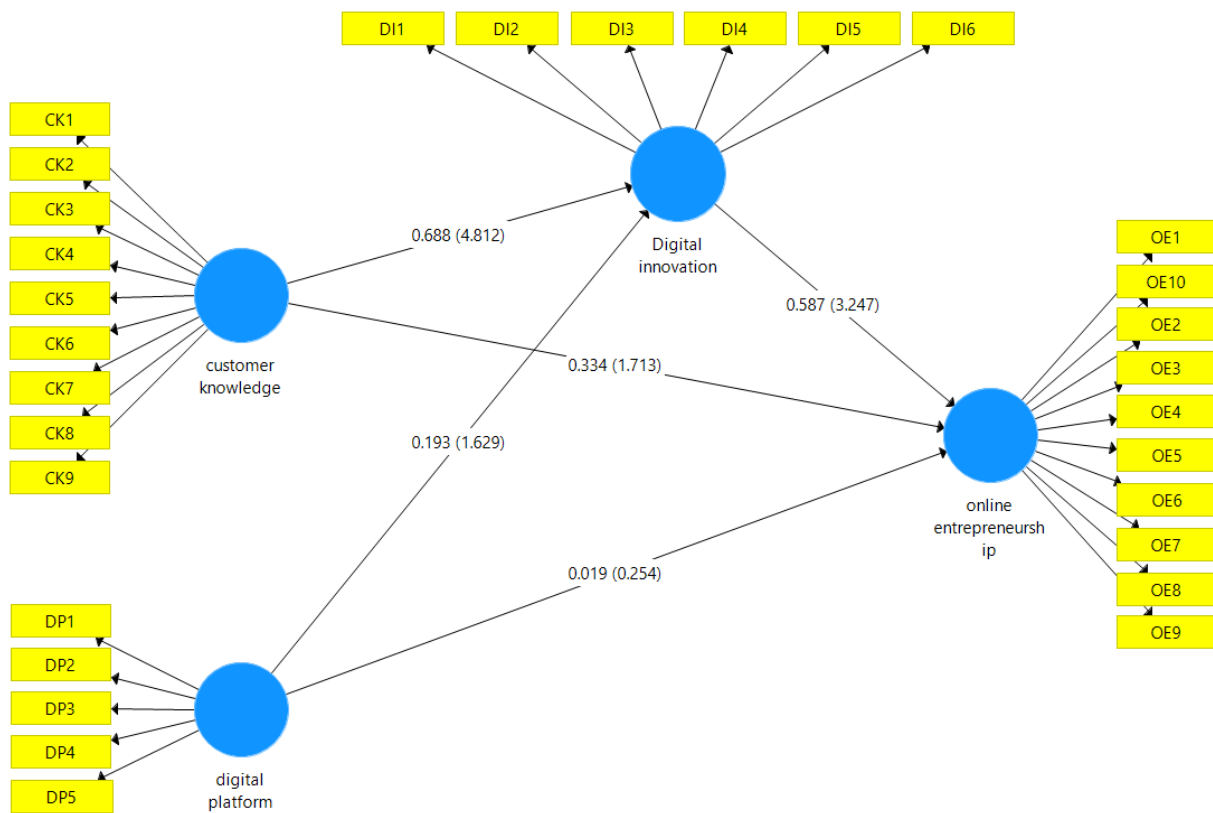


Figure 2: Bootstrapping results for CK, DP and OE and mediating effect of DI

DISCUSSIONS

Online entrepreneurship has widely become the medium for providing different business opportunities in all kinds of fields and industries. It has become a distinguished industry in itself as online

entrepreneurship gives way to conducting business operations in a digital spectrum. This in turn has made an extensive outcome on the whole world. One element that has factored into the success of online entrepreneurship globally is the advent of the internet and its applications such as a wide variety of digital platforms. Today, multiple digital platforms provide many options to online entrepreneurs. Also, each of these digital platforms serves a specialized purpose, whereas some platforms provide capabilities of all other digital software in one e.g., Office 365. Secondly, another factor that makes an online enterprise or business model so successful is its access to customer knowledge and its management. Customer knowledge is now more widely accessible, and businesses can directly communicate with their consumers around the world without any hassle of being present physically. The research in this context where digital platforms and customer knowledge are studied simultaneously in connection with online entrepreneurship is in its early stage of development.

According to figures presented by Statista, an institution that has expertise in the market and consumer data, the world of online entrepreneurship is expected to value \$6.3 trillion by end of 2023 (Forbes, 2023) and is estimated to grow over the years due to fast-paced technology. In the present time, technology has advanced enormously, where factors like artificial intelligence (AI) and digital platforms can be used in parallel with human decision-making to enhance the quality of decisions and increase accuracy. The question that arises is how online entrepreneurs have emerged taking advantage of the digital platforms (technology) and vast customer knowledge, the technological innovation has offered to these entrepreneurs, and how successfully they can form and run diverse online business stores replacing traditional businesses. Furthermore, the development of digital ride hailing platforms which has grabbed a majority of the market share is another case where entrepreneurs can provide their services. The rising interest from researchers in online entrepreneurship and innovation in digitalization is visible from the increasing number of articles being published in the last few years. Many countries have realized the significance of online entrepreneurship for the growth of the economy and have therefore invested resources for development in these areas. There is a need for research on online entrepreneurship as, if we look at past studies, researchers have provided information on entrepreneurship that is dissimilar from this.

To further understand how each variable contributes and acts as a successful business model. It is very important to understand the variables involved i.e., digital platforms, customer knowledge, online entrepreneurship, and digital innovation. Digital platforms are rising as a keen source of interest in various business industries and among new online entrepreneurs and also in managing major economic and political activities. Now, digital platforms are becoming the main source of carrying out activities such as economic, political, social, etc. A business landscape transformation is witnessed in this particular decade with the emergence of different categories of a digital platform that has altered the conventional methods and ways of conducting business to a more digital specified scene. Categories of digital platforms include service-oriented media sharing, social media, and communication applications. Secondly, another concept of customer knowledge is of utmost significance to organizations because of the sizeable knowledge bank of its customers a business has. It is more likely that they will be capable enough to respond faster to the varying and continuously changing needs and demands of consumers. Customer knowledge is defined as organization-wide learning skills of obtaining and generating the relevant customer information, analyzing and evaluating datasets of these customers to further use it for innovation and product/services development purposes. The dependent variable in this study is online entrepreneurship, referring to starting a business using information technologies and then making similar business transactions exclusively over digital platforms. It is generally accepted that online entrepreneurship encompasses the web as a key component of its business model. More than a million online entrepreneurs are registered only in Pakistan, which is still a developing country, this shows the insane craze of online or digital entrepreneurship in the modern era. Lastly, digital innovation is the transformation of products/services, processes, and business models using digital technology platforms within and across business components. Digital innovation provides an opportunity for entrepreneurs to

digitize their products and services. They can utilize digital technology to solve traditional problems innovatively.

The emphasis of this study (Impact of digital platforms and customer knowledge on online entrepreneurship with the mediation of digital innovation) is on the use of online entrepreneurs' user knowledge that determines their decisions about the creation or delivery of a product/service to satisfy the needs of their target audience along with the use of digital channels to digitally evolve the online entrepreneurship industry. Therefore, this study proposed four hypotheses. Firstly, there is a significant relationship between customer knowledge and online entrepreneurship. Secondly, there is a significant relationship between digital platforms and online entrepreneurship. Thirdly, digital innovation mediates the relationship between digital platforms and online entrepreneurship. Lastly, digital innovation mediates the relationship between customer knowledge and online entrepreneurship.

The findings of this research have proved to be highly significant for online entrepreneurs and entrepreneurs (people who already have traditional business operations but plan to capitalizing on digital platforms in conjunction with customer knowledge to innovate) aiming to go online and provide services. The results of the study are meant to make traditional and budding entrepreneurs aware of the rising potential of several digital platforms and customer knowledge for an online enterprise. The findings of the study concur with the hypotheses proposed at the beginning, as they suggest that digital platforms and customer knowledge provide entrepreneurs with a perfect fit for conducting their business in an online space. Entrepreneurs who are currently operating their businesses online, substantially benefit from multiple platforms. As it provides online entrepreneurs with the additional capability to reach far greater audiences and also collect customer knowledge that could assist further business decisions. Moreover, customer knowledge and digital platforms further improve digital innovation.

PRACTICAL IMPLICATIONS

Setting up an online business or offering online services, involves various aspects of digital platforms and customers' knowledge that could provide entrepreneurs a competitive edge. It is critical here to notice that mere online presence through different digital platforms would not help an online entrepreneur to be outstanding amongst their rivals. Similarly, businesses possessing banks of customer knowledge databases would not reward them and help entrepreneurs in any way to come up with innovations. This depends purely upon the entrepreneurs' choices and direction in which they intend to go and how they utilize the modern applications of both digital platforms and customer knowledge. Therefore, the key decision online entrepreneurs have to make is how they want to apply the digital platforms and customer knowledge to initiate digital innovation to sustain their business or services.

RESEARCH LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Because the survey participants are all online entrepreneurs, acquiring data for this study via questionnaires from a sample size of 200 people is already a demanding challenge. The country's current circumstances acted as a constraint, making it much harder to broaden this study and questionnaire to reach out to a larger audience. Researchers created exclusively online questionnaires, thus constraining the reach of the target audience. The survey took a surprisingly long time to collect data from a sample size of only 200 people. As a result, the findings cannot be generalized for the very larger population. Furthermore, the study was cross-sectional. Just because of that, this research could not be a detailed

study, leaving a gap for future researchers to do a wide-spread and more extensive assessment. More rudimentary research is required to determine the extent to which digital platforms and customer knowledge influence online entrepreneurship through the mediation of digital innovation. Another barrier was the information gathered; because the data was primarily acquired via online questionnaires, there was a probability of biasness in responses given by respondents. However, a single questionnaire distribution approach was used to circumvent significant expenses and resource utilization. Within the constraints specified, researchers have endeavored to the best of their abilities to present a complete examination of the research topic.

This research has much greater potential in identifying different aspects of online business and what factors make it highly successful. Future studies can be done to examine the relationship of online entrepreneurship with multiple variables. The reason is that there may be other variables that can help online entrepreneurs innovate and produce much greater results. Though all the hypotheses concur with statistical research, in actuality there are various variables involved that can make an online enterprise successful. For example, variables like functional knowledge management, business performance, financial performance, digital orientation, digital capability, external competitive environment, and many such known variables are involved that fuel innovation for an online business. Furthermore, many such variables need to be investigated with supporting literature and statistical findings.

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APPENDIX 1

Online Entrepreneurship Questionnaire

<i>Online Entrepreneurship</i>						
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Does your Online business platform facilitate access to (Disseminating) product/service information	1	2	3	4	5
2	Does your Online business platform facilitates Receiving payments from customers	1	2	3	4	5
3	Does your Online business platform facilitates Delivering products/services to customers	1	2	3	4	5
4	Does your Online business platform facilitates Providing customer service support	1	2	3	4	5
5	Does your Online business platform facilitate Testing products/services	1	2	3	4	5
6	Does your Online business platform facilitates Conducting marketing surveys	1	2	3	4	5
7	Does your Online business platform facilitates Enhancing business/brand image	1	2	3	4	5
8	Does your Online business platform facilitate Attracting New customers	1	2	3	4	5
9	Does your Online business platform facilitates Offering value-added customer services	1	2	3	4	5
10	Does your Online business platform facilitates Creating a new advertising channel	1	2	3	4	5

Customer Knowledge Questionnaire

<i>Customer Knowledge</i>						
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I ask my customers about their specific performance requirements	1	2	3	4	5
2	I ask directed questions to determine the specific needs of my customers	1	2	3	4	5
3	In sales conversations, I actively involve my customers to determine their specific needs	1	2	3	4	5
4	I focus on functional information especially relevant to my customers	1	2	3	4	5
5	I focus on those benefits of our products and services that are of particular relevance for my customers	1	2	3	4	5

6	I always adapt my sales pitch to my customers' interests	1	2	3	4	5
7	When presenting our products and services, I respond to my customers' specific requirements	1	2	3	4	5
8	I talk with my customers about their objections in a detailed manner	1	2	3	4	5
9	I ask my customers about the reasons behind their objections	1	2	3	4	5

Digital Platforms Questionnaire

1. Which social media platforms does your business use?

Select all that apply

- Facebook
- Twitter
- Instagram
- LinkedIn
- Pinterest

Others _____).

2. Which of the following types of web presence does this business have?

Select all that apply

- Company app
- Social media account
- Third-party website, platform, app or online marketplace
- Paid online advertising.
- Free online advertising

3. Which of the following features do this business's website offer?

Select all that apply

- Online purchases of goods or service
- Links to social media or integrated with social media.
- Customized website or information provided for repeat visitors.
- Tool for customers to customize or build their own product.
- Online booking

4. Which of the following types of social media does this business currently use?

Select all that apply

- Social networking websites or apps
- Multimedia content sharing website
- Company blog or microblog

- Wiki-based knowledge sharing tools
- Other

5. Which of the following types of paid online advertising did this business use?

Select all that apply

- Pay per click
- Social media ads
- Influencer marketing
- Banner ads
- Interest-based advertising
- Search engine optimization (SEO)
- Programmatic advertising

6. Which of the following sources does this business use in conducting e-commerce sales or securing orders online?

Select all that apply

- Company website
- Company app
- Social media account
- Other-third party website, platform, app or online marketplace
- No

Digital Innovation Questionnaire

IMPACT OF CUSTOMER KNOWLEDGE AND DIGITAL PLATFORMS

<i>Digital Innovation</i>						
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Digital innovation is a strength of my organization	1	2	3	4	5
2	Online Entrepreneurs think that digital innovation is or should be a core competency of our business	1	2	3	4	5
3	Your online business is becoming more digital due to digital innovation	1	2	3	4	5
4	Investing in the right technologies and tools are the key steps towards digital innovation	1	2	3	4	5
5	My organization has already successfully implemented a number of digital initiatives that improve or adapt its products and services	1	2	3	4	5
6	My organization has the required expertise and staff to implement digital transformation effectively	1	2	3	4	5

THE EFFECT OF INFORMATION ABOUT METAVERSE ON THE CONSUMER'S PURCHASE INTENTION

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ABSTRACT

The Metaverse is a virtual universe that combines the physical world and the digital world. People can socialize, play games and even shop with avatars created in this virtual environment. Metaverse, growing very fast regarding virtual goods, is both a profitable and risky area for investors. To enter the Metaverse for investment purposes, it is necessary to conduct comprehensive research and gather information. In this direction, this study aims to investigate the effects of source credibility, quality of argument, and the perceived risk on the purchase intention obtained by the investors about the Metaverse world from the point of view information adoption model. For this research, data were collected online from 495 consumers interested in Metaverse investment. The structural equation model was used to test the proposed model. The findings obtained in this study showed that source credibility and quality of argument affect the purchase intention positively, while the perceived risk affects the purchase intention negatively.

Keywords: Metaverse, information adoption model, quality of argument, source credibility, perceived risk, purchase intention

INTRODUCTION

Metaverse's popularity has recently grown tremendously (Hollensen et al., 2022; Mystakidis, 2022; Vidal Tomás, 2022; Zhao et al., 2022). Companies such as Meta (Facebook), Microsoft, Apple, Somnium Space, Axie Infinity, Mirandus, Star Atlas, Illuvium, Decentraland, and The Sandbox, have invested much money in the development of Metaverse. These vast investments aim to spread and diversify its use of it. Metaverse will bring more wealth to the virtual goods market. Virtual goods are currently worth about \$50 billion and are expected to grow to \$190 billion by 2025 (Cui et al., 2022). On the other hand, Metaverse real estate sales in 2021 amounted to around \$500 million. Current trends are that sales could double by 2022. This situation attracts the attention of investors who are interested in Metaverse. They are doing their best to gather information on making a profitable Metaverse investment. However, some investors do not trust the information they have learned about Metaverse and find it too risky to invest (Mackenzie, 2022; Nakavachara & Saengchote, 2022). Investors who receive consultancy in the selection of investment products can make more rational choices. However, investors who do not seek investment advice are more likely to face risks (Efendioğlu, 2022).

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Consumers seek information from various sources before purchasing a product or service (Zhu et al., 2016). Therefore, information is a critical phenomenon for participating in the digital economy (Mensah et al., 2021; Vollrath & Villegas, 2022). Therefore, one of the essential challenges for Metaverse investment is source credibility. In addition, the quality of argument is another important factor for the investment to be successful. This is partly because there is limited information about the Metaverse.

Most of the research in the literature deals with the usability, opportunities, threats, advantages and disadvantages of the Metaverse (Cui et al., 2022; Hollensen et al., 2022; Mystakidis, 2022; Prieto et al., 2022; Vidal-Tomás, 2022; Zhao et al., 2022). As it is understood from the literature, consumers' purchase intention and expectations in the digital field can be met in the Metaverse environment. However, to our knowledge, there is no research seeking information on the Metaverse investment in the literature. Thus, this study aims to investigate the effects of the source credibility, quality of argument, and perceived risk on the purchase intention of the Metaverse from the point of view of the information adoption model.

The paper was structured as follows. First, we provided a literature review and conceptual background. In the following sections, the hypotheses were developed. In the following area, the methodology was explained, and the findings were analyzed. The paper concluded with a discussion and results. Then, we presented some practical and theoretical implications and limitations. Finally, we ended with some directions for future work.

LITERATURE REVIEW

Metaverse was first used in 1992 in the science fiction novel *Snow Crash* by Neal Stephenson. The Metaverse is a visual world that blends the physical and digital worlds. Metaverse, undoubtedly the most popular concept of recent times and requires user-centered advanced technologies, offers users a more realistic experience and rich activities in a Virtual World (Zhao et al., 2022). “Meta” means beyond, and “Universe” means realm. On the other hand, it consists of the combination of these words. In this virtual world, users can communicate and interact with each other with avatars. Metaverse is an immersive and shared virtual world where different activities are allowed for its users, represented by avatars (Vidal Tomás, 2022). It represents a parallel virtual reality universe created from computer graphics, where users worldwide can access and connect via glasses and headsets (Hwang, 2022; Marini et al., 2022; Mystakidis, 2022).

Metaverse will not replace social media but will offer an online social media world full of new user experiences. Users can come together through avatars that look like them and mimic their movements. Thus, they can interact in an environment replicating the physical world (Hollensen et al., 2022). Metaverses are new interfaces expected to be used to perform any human-computer interaction. Augmented reality is a new paradigm based on technologies, such as virtual worlds. However, the Metaverse in work, education, commerce, or entertainment has not yet become widespread (Prieto et al., 2022). People can participate in this virtual world to work, art, entertainment, investment, education, socialize and play games. Suppose people adapt to Metaverse technology, thanks to virtual reality devices. In that case, they will have the opportunity to do many activities, such as shopping, going to the movies, and spending time in the cafe, without making any physical effort. Thus, people can socialize, play games and even shop with their avatars created in the virtual environment.

It is predicted that the Metaverse for businesses will create a new revolution in almost every industry. New skills, occupations, and certifications will be needed in this virtual world, and new sectors, markets, and resources will be created. In addition, it will increase the functionality of their products or services for brands. For example, Facebook is changing its name to “Meta” to make a metadata warehouse, a place to do business in 3D in the future. The financial value of all these changes will be trillions of dollars (Hollensen et al., 2022).

Since the brand has an important role in the consumer's purchasing decision process, it has become the focus of marketing and advertising activities (Efendioğlu et al., 2016). In the literature, there are various studies on Metaverse and the brands in Metavers about purchase intention. Among these studies Shen et al., (2021) examined consumer behavior and purchase intention in virtual commerce environments as a conceptual framework. It is a current issue to measure the effect on the purchase intention of the companies or brands that offer in Metaverse, which acts as a bridge between the virtual world and the real world (Onurlu & Kandemir Çomoğlu, 2022). Because it has been revealed that the purchasing behavior of consumers in the real world and their behavior in the virtual world are not the same (Çelikkol, 2022). Patil vd., (2022) examined young people's shopping experiences in the metaverse. The study, conducted from the Uses and Gratifications Theory perspective, showed that retail experience and metaverse application characteristics significantly affect the components of hedonic and social satisfaction. However, the retail experience and features of metaverse applications did not affect utilitarian satisfaction. Therefore, hedonic and social satisfaction significantly influenced the intention of young people to try Metaverse during their shopping experience. Azmi et al. (2023) found that the atmosphere in the Metaverse environment positively influences satisfaction and perceived enjoyment, which positively influences purchase intention. Le Tan et al. (2023) examined the game selection factors in the Metaverse, the factors affecting the entertainment experience, trust, and purchase intention. According to the results of the research, the purchase intention of the consumers was positively affected in the game choices. Similarly, music content marketing has positively affected the satisfaction and purchase intention of users who use music content on Metaverse (Hwang & Lee, 2022). Zhang et al. (2023) examined the effect of perceived media richness in the Metaverse on building cognitive trust and emotional trust, and in this context, the effect of shopping in the Metaverse on purchase intention in their study based on the theory of media wealth. However, the experience of investments such as land offered to consumers in the Metaverse environment is still an open problem in this area. This study will contribute the purchase intention literature and will strengthen relations with Metaverse consumers more effectively.

Theoretical Background

The IAM (Information Adoption Model), which was derived from the integration of the TAM (Technology Acceptance Model) and TRA (Theory of Reasoned Action), is considered more skilled in explaining information adoption behavior checks against the use of the individual theories of TAM and TRA (Mensah et al., 2021). TAM is a thoroughly accepted theory proposed by Davis (1989), which determines any behavioral topics of consumers in the acceptance of new Technologies (Lee et al., 2011, Venkatesh et al., 2003, Yiu et al., 2007). According to TRA, people behave according to their own free will (Ajzen & Fishbein, 1975). The behavior of consumers depends on the intention of the behavior. Subjective norms and attitudes towards behavior are seen as determinants of this intention. This theory only explains the behavior of the person's own will, that is, the behaviors completely under the person's control (Fitzmaurice, 2005). On the other hand, ELM (Elaboration Likelihood Model) is beneficial for explaining how the information within the communication impacts the recipients and thus can be used to define the change of attitudes form and explain the methods underlying the influence of persuasive communication (Petty & Cacioppo, 1986). IAM combines TAM and ELM and uses the quality of argument as the primary way and the source quality as the environmental way. IAM attempts to explain users' information transfer intention by measuring the probability that a person will adopt the information conveyed. It is mainly used to explain how people are affected by information in computer-mediated communication platforms (Sussman & Siegal, 2003). The model was used for e-wom and purchase intention (Balakrishnan et al., 2014; Erkan & Evans, 2016; Gunawanand Huarng, 2015; Salehi-Esfahani et al., 2016; Zhu et al., 2016).

Hypotheses Development

Credibility purports the perception stage that the information provider has the experience, technique, and knowledge. Therefore, it provides neutral ideas and practical information. Creating

customer credibility is one of the most critical components of accomplished marketing. It positively impacts consumers' behavior and attitude when the credibility of information is advanced (Kim & Lee, 2022). When consumers access credible information, they are more willing to engage with the firms (Reichelt et al., 2014). The information in this study is the credibility of the people who produce information for Metaverse. Credible source creates an essential sense of trust for potential consumers (Xie et al., 2017). If customers perceive evidence that the information they are looking for is unreliable, they will likely be disappointed (Goode & Harris, 2007). The credibility of information is a decisive factor in consumers' decision-making process (Awad & Ragowsky, 2008). Therefore, studies also showed the impact of source credibility on purchase intention (Cheng & Ho, 2015; Prendergast et al., 2010). Source credibility is defined as the degree to which a user is perceived to be a source of valid argument and the degree of confidence in the user's intent to communicate the claims he considers most valid (Hovland et al., 1953). Credibility means the degree to which users perceive the information source as trustworthy, competent, and believable (Petty & Cacioppo, 1986). Environmental cues like source credibility can be affected by the receiver of the information. Information published by a highly credible source is perceived as valuable and reliable. Source credibility is chosen source's trustworthiness, expertise, and attractiveness are significant variables impacting users' perception (Cheung et al., 2008). So, credibility is an important cue that helps consumers to make a purchase decision (Zhu et al., 2016). Regarding Information Adoption Model, source credibility as an environmental signal plays a vital role in effective information procedure (Sussman & Siegal, 2003). Accordingly, this study evaluated the effect of source credibility on Metaverse investor's purchase intention as follows:

H1: The source credibility positively affects purchase intention.

Quality of argument is the convincing strength of opinions inserted in an informational message (Bhattacharjee & Sanford, 2006). Consumers search for information that is supported by compelling and powerful evidence (Cheung et al., 2008), which may affect information adoption attitude and behavior change (Teng et al., 2014; Watts & Zhang, 2008; Zhu et al., 2018). The quality of argument impacts the attitude on online platforms (Sia et al., 1999).

Quality of argument is defined as the relevance of information typicals for information users. It is a significant variable for the success of an information adoption model (Jiang et al., 2021). Argument quality is related to the customer's behavioral intention (Chiu et al., 2005). On the other hand, previous studies found that the quality of argument impacts the consumer's attitude in the context of online shopping (Sia et al., 1999; Teng et al., 2014). It belongs to the value of the information perceived by the recipient (Cheung et al., 2008; Negash et al., 2002).

Quality of argument can be measured in the context of relevance, comprehensiveness, and accuracy (DeLone & McLean, 2003). Information relevance is considered to be a significant point in the decision-making way. Comprehensiveness has defined as the integrity of the information, which means that the data is clear and informative (Rabjohn et al., 2008; Teng et al., 2014). Accuracy is the correctness of the efficient information (Bailey & Pearson, 1983). Therefore, it is the extent the consumers perceive the information as accurate (Wixom & Todd, 2005). Users' perception of argument quality can define their potential buying behavior (Cheung et al., 2008). From the viewpoint of the Information Adoption Model, argument quality as the primary cue plays a significant role in the informational effect (Sussman and Siegal, 2003).

The quality of outputs in this study concerning completeness, accuracy, and currency for Metaverse information. Consumers attach importance to the quality of the argument. Quality information affects consumers' shopping experience and product purchase intention (Ghasemaghahi & Hassanein, 2016). It impacts consumer satisfaction, affecting purchase intention (Park & Kim, 2006). Accessing qualified information increases the probability of purchasing (Kim et al., 2022). Therefore, it has been seen that the quality of the argument positively affects the purchase intention (Lee & Shin, 2014). Hence, the following proposition is postulated:

H2: The quality of argument positively affects purchase intention

Perceived risk describes user perceptions of the unwanted consequences of purchasing a service or product. The perceptions of risk and reliance have been generally joined in the technology adoption literature of innovations. Especially in recent years, studies have been related to online shopping (Faqih, 2022). The view of perceived risk negatively impacted behavioral intention to adopt online shopping. The perceived risk linked with the vendor is the degree to which a consumer believes about the potential losses when purchasing a service or product (Zendehdel et al., 2015). While perceived risks decrease the probability of making a risky choice, perceived benefits rise (Weber et al., 2002). The perceptions of risk negatively impact behavioral intention. Many researchers have shown that intention to adopt online shopping is negatively impacted by perceived risk (Ariffin et al., 2018; Ilhamalimy & Ali, 2021; Qalati et al., 2021).

Users' perception of the value of products and services impacts their decision-making and behavior (Liu et al., 2020). Perceived risk is the expected negative factor in purchasing the product (Lee & Tan, 2003). It is, in many ways, a barrier to customers' purchases (Van Noort et al., 2008). The higher the perceived risk for consumers online, the lower the consumer's intention to purchase products (Forsythe et al., 2006). Perceived risks in online information strongly affect consumers' behavior and towards (Hansen et al., 2018). Consumer perceived risk negatively affects attitudes toward online shopping and purchasing behaviors (Ariffin et al., 2018). Therefore, based on the findings of various studies, the following hypothesis is proposed:

H3: Perceived risk negatively affects purchase intention.

METHODOLOGY

Within the literature review framework, the effect of the quality of argument, source credibility, and risk perception about the Metaverse on purchase intention will be examined. Because this study aims to empirically examine the proposed effects in the conceptual model, quantitative analysis is suitable. The following subsections report the details of the measurement of variables, data collection, and data analysis.

Measurement Development

To collect empirical data, a questionnaire was developed by adopting the measurement scale items from previous literature. It adopted three items for source credibility and three items for quality of argument from Zhao et al. (2018). It adopted three items for perceived risk from Jiang et al. (2021). Three items were adopted for purchase intention from Yin & Qiu (2021). Since the questionnaire was administered in Turkey, a professional translator translated the instrument's English version into Turkish. The questionnaire was then reverse translated into English to confirm translation equivalence.

Data Collection and Sample

The current study focuses on the context of Turkey, where there are many popular social platforms. For this research, data were collected with Google forms from 495 consumers who were interested in Metaverse investment. In the first part of the form, demographic questions were used to determine the participants' gender, marital status, age, occupation, education, and income. In the second part, there were questions about the credibility of the information obtained, the quality of the argument, the perceived risk, and purchase intention. In this section, the present research participants were asked whether they thought of investing in the Metaverse as a filter question. If the participant had thought about investing in the Metaverse, other questions were continued. The questionnaire contained close-ended questions with a five-point Likert scale, from 1 being "strongly disagree" to 5 being "strongly agree". The detailed items are shown in Table 1.

Table 1. Constructs and Measurement Items

Construct	Items
Source Credibility	The persons generating metaverse information are trustworthy. The persons generating metaverse information are knowledgeable. The metaverse investment information is credible.
Quality of Argument	The information for metaverse is up to date. The information for metaverse is accurate.
Perceived Risk	The information for metaverse is comprehensive. I am concerned about cheating of metaverse information. I worry about problems of metaverse information. I worry that my consumption will not provide value for my money.
Purchase Intention	I will keep metaverse investments for future purchase reference. I will encourage others to purchase metaverse investments. I will consider the metaverse investments as the first choice. I will contact the metaverse investors to obtain more information about metaverse investments.

The data collection process consisted of two stages. First, before proceeding to the main research, a pilot study was conducted with 44 people to determine the applicability of the questionnaire. Its intelligibility, reliability, and validity were tested in the pilot application. As a result of the pilot application, it was evaluated that the questions were understood and the questionnaire was suitable for analysis.

RESULTS

The univariate normality was studied using skewness-kurtosis results (Hair et al., 2010; Kline, 2015). This study examined skewness and kurtosis values to test the normality distribution (Tabachnick & Fidell, 2007). As a result of the analysis, the kurtosis value was between -0.451 and 0.942, and the skewness value was between -0.822 and 1.211. In addition, the Kolmogorov-Smirnov test was suitable for normal distribution. In this case, since the skewness and kurtosis values were between -2 and +2, it was accepted that the data showed a normal distribution and conforms to the threshold limit suggested by Kline (2015). Therefore, the data were free from univariate normality issues and used the structural model. Structural equation modeling is mostly used in marketing research (Petrescu, 2013).

Descriptive Statistics

Descriptive statistical analyses were performed for the basic structure of the variables. The SPSS package program was used in the study. The sample demographics are shown in Table 2. It consisted of 495 people, 129 of whom were women, and 366 were men. 73.9% of the participants are male. Among the participants, 294 were single, and 201 were married. In this case, the majority of the participants were single. In addition, when the age distribution of the participants was examined, the majority were under the age of 24. In addition, most of the participants were students.

Table 2. Frequency Analysis of Demographic Data

Demographic Variable	Categories	N	%
Gender	Female	129	26,1
	Male	366	73,9
Marital Status	Single	294	59,4
	Married	201	40,6

Age	18-24	185	37,4
	25-34	148	29,9
	35-44	125	25,3
	45-54	29	5,9
	55-64	7	1,4
	65 and above	1	0,2
Employment Status	Student	195	39,4
	Public sector employee	94	19,0
	Private sector employee	99	20,0
	Owns a private business	68	13,7
	Housewife	1	0,2
	Retired	2	0,4
	Unemployed	36	7,3
Education Level	Above college	39	7,9
	High School	65	13,1
	Associate degree	98	19,8
	Bachelor	225	45,5
	Master or PhD	68	13,7
Monthly Income	300\$and below	112	22,6
	301\$ - 600\$	199	40,2
	601\$ - 1200\$	82	16,6
	1201\$ - 1800\$	74	14,9
	1801\$and above	28	5,7

Measurement Model

For the reliability and validity analysis of the data, Cronbach's alpha (CA), Composite Reliability (CR), and Average Variance Extracted (AVE) were examined. The mean explained variance value is expected to be above 0.50, and the construct reliability and Cronbach's alpha values are above 0.70 (Fornell & Larcker, 1981). Therefore, they are shown in Table 3.

Table 3. Overview of the Measurement Model

Construct	CA	AVE	CR
Source Credibility	0,821	0,610	0,744
Quality of Argument	0,842	0,622	0,726
Perceived Risk	0,833	0,602	0,727
Purchase Intention	0,724	0,619	0,769

Exploratory factor analysis was used to determine the construct validity of the scale. It was seen that the result of the KMO test (0.819) and Bartlett's test result (0.001) were also suitable for factor analysis. According to the exploratory factor analysis results, the statements were loaded on four factors. In total, the explanatory rate was calculated as 62.52%. In this case, it was determined that the scale used was distributed according to the purpose of preparation.

Finally, confirmatory factor analysis was applied to the data obtained from this research, and it was examined whether the validity of the factor structure was confirmed. For this, factor loads and goodness of fit values were examined. As a result of the findings obtained (CMIN/DF=2.766; CFI=0.928; AGFI=0.919; GFI=0.903; RMSEA= 0.04), it was seen that the scale items were loaded with an acceptable fit to the relevant factors.

Structural Model

Once we have assumed that the construct measures are reliable and valid, the next step is assessing the structural results. The AMOS program was used in the structural equation model analysis. When the values related to the fit indices of the model proposed in this research were examined, the data fit well with the model. This is shown in Table 4.

Table 4. Summary of Goodness-of-Fit Indices for Measurement Model

Model Fit Index	Good Fit	Acceptable Fit	Obtained Values
CMIN/DF	≤ 3	≤ 5	2,242
CFI	$\geq 0,97$	$\geq 0,90$	0,915
AGFI	$\geq 0,90$	$\geq 0,85$	0,886
GFI	$\geq 0,90$	$\geq 0,85$	0,872
RMSEA	$\leq 0,05$	$\leq 0,08$	0,04

The results of the structural model test showed that the standardization path coefficients were statistically significant. The p significance values obtained from the analysis are shown in Table 5. According to these results, the source credibility ($\beta = .334$; $p < .05$) and the quality of the argument ($\beta = .291$; $p < .05$) had a positive effect on purchase intention; perceived risk ($\beta = -.185$; $p < .05$) had a negative impact on purchase intention. Thus, hypotheses H1, H2, and H3 were accepted.

Table 5. Results of Hypotheses Testing

Hypothesis	Path	β	P value
H1	Source Credibility ->Purchase Intention	0,334	<,001
H2	Quality of Argument->Purchase Intention	0,291	<,001
H3	Perceived Risk->Purchase Intention	-0,185	0,03

DISCUSSION

The source credibility positively affects the purchase intention parallel with the IAM construct (Sussman & Siegal, 2003). This result supports the findings obtained in previous studies on different areas (Cheng & Ho, 2015; Filieri et al., 2018; Ismagilova et al., 2020; Prendergast et al., 2010). Therefore, source credibility about Metaverse is an important environmental cue for investors evaluating purchases regardless of whether they have real or virtual links with the sources.

The quality of argument defines the degree of informational influence when a person cognitively accents convincing information. It is crucial to the process of information adoption, which indicates that in the context of Metaverse. It was a significant factor in the use of information and communication Technologies technologies (Briceño-Garmendia ve Estache, 2004). In this study, the quality of argument positively affects purchase intention. This result is consistent with the findings obtained in previous studies on various subjects (Cheung et al., 2008; Kim et al., 2022; Lee & Shin, 2014; Park & Kim, 2006; Park et al., 2014; Park & Lee, 2008) where quality of argument was found as a strong predictor of purchase intention. Additionally, in the IAM construct, results indicate that quality of argument has the most substantial effect on purchase intention (Sussman & Siegal, 2003 Investors are choosing qualified information to examine the quality level of the Metaverse information they demand because high-quality

information content covers the essential parts of Metaverse investment, the more accurate the review information, the more practical the review experience, and the better its impacts (Mystakidis, 2022; Rauschnabel et al., 2022; Shen et al., 2021; Tseng et al., 2016).

According to the final analysis result from the present study, perceived risk has a negative effect on purchase intention. This finding is in the same direction as some studies in the literature (Ariffin et al., 2018; Forsythe et al., 2006). Metaverse contains both risks and promises for the future regarding investment and purchasing.

In this study, it has been revealed that it is essential to obtain credible and quality information before investment. In addition, it has been observed that investors give up buying when they take the risk factor into account in detail.

CONCLUSION

Metaverse is an immersive world that combines virtual reality and augmented reality, where users are represented by avatars and navigate virtual spaces. It is expected to have significant effects in many sectors, such as marketing, fashion, technology, and games, in the future. Since every technological innovation, opportunity, and threat are shaped together, and some factors are crucial before investing in Metaverse. Most of the respondents to the survey are students. Compared to others, students are more willing to invest in Metaverse because they are more familiar with Metaverse, are more inclined to use new technologies, and are more curious about this field. This study examined the effects of the credibility, quality, and risk perception of the information obtained by the consumers for the Metaverse investment on the purchase intention. In this direction, it has been determined that the quality of the argument and the source's credibility positively affect the purchase intention. However, the perceived risk has a negative impact.

Theoretical Contributions

As a result, what factors may affect the Metaverse investors' purchase intention is understood. It is well-acknowledged in the literature that quality of argument and credibility is an essential prerequisites. Therefore, this study provides valuable theoretical contributions to Information Adoption Model literature. First, implementing this type of analysis is one of the rare studies assessing empirically the information reliance, quality of argument, and purchase intention relationship within the context of Metaverse investing. Second, the perceived risk negatively affects purchase intention to adopt and use Metaverse for purchase. This finding suggests that consumers' purchase intention to adopt Metaverse investing is sensitive to the level of risk perceptions demonstrated by investors. This means that investors are generally more concerned about the factors of risk perceptions when advancing purchase intention to adopt Metaverse investing. This study contributes to the literature by providing sufficient empirical proof that Metaverse investors are concerned with building reliance for purchase intention.

Practical Implications

It will be essential to take appropriate due diligence before purchasing in the Metaverse environment. If possible, receiving help from consulting firms, if not possible, would be beneficial to obtain information from reliable and experienced Metaverse investors. The information obtained from trustworthy sources will positively affect the purchase intention of the investors. Furthermore, marketers should also deliver Metaverse investment information from qualified and reliable communicators to consumers through the proper channels. Thus, consumers fed with capable information can expand their Metaverse investments. On the other hand, Metaverse businesses sharing valuable and credible information for consumers on social media and providing regular training on this subject will directly affect their purchases positively.

Limitations and Future Research Directions

This study has its limitations that call for new directions for future research. First, future research could further expand the analysis by including more variables for investors to buy on the Metaverse. Second, this study was conducted using only a limited convenience sampling in Turkey, and the extant literature has not adequately investigated comparative empirical analysis between investors. Thus, the findings may not apply to other countries. This study focuses on investing in the Metaverse as a company. In future studies, a larger survey participant may be interested, and studies to be conducted from the perspectives of consumers, rather than companies, will contribute to the literature on shopping in Metaverse. Besides that further studies may replicate this study in other countries to verify the research results and consequently direct Metaverse more broadly with importance on different country environments. Third, to universalize findings, studies need to handle similar studies on respondents from another platform.

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INFORMATION SECURITY AND CYBERSECURITY ASSESSMENT IN SME – AN IMPLEMENTATION METHODOLOGY

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ABSTRACT

Digitalisation and Industry 4.0 are emerging and challenging topics for Small and Medium-sized Enterprises (SME). The overall benefits for these companies are evident as their business processes become more streamlined with significant improvements in internationalisation, penetration in global markets, and confidence in new business partners. However, there are increasing concerns regarding information security and cybersecurity in SME, namely those related to adopting international best practices and compliance regulations. This study describes a comprehensive framework and a methodology for mapping the roadmap of minimum cybersecurity capabilities produced by the Portuguese Center for Cybersecurity. The proposed mapping methodology aims to bridge the gap between information security and business processes in SME, resulting in a management tool to assess the cybersecurity risk and competitiveness in global markets. The methodology is geared toward the specific characteristics of SME and how these organisations may assess their cybersecurity and information security risks. The proposed mapping methodology may accommodate other information security and cybersecurity standards, namely NIST cybersecurity framework or ISO 27009 standards, but still, a case study was conducted on the ISO 27001:2013 standard. The resulting correlations between the actions identified in the roadmap and the controls of ISO 27001:2013 standard gave rise to a questionnaire for surveying cybersecurity risks in SME. The rationale of this study is two-fold: from one

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side, the intrinsic SME's characteristics, namely the size, and the regional and familiar scope, which rise their exposure to cyber threats; on the other side, the lack of expertise and resources to adopt and implement international cybersecurity and information security standards, as they are primarily designed to be applied in larger enterprises rather than SME. The main contribution of this paper is a methodology to combine cybersecurity governance guidelines with formal standards to produce a set of convergence points to be used by SME as a mechanism to facilitate information security and cybersecurity risk assessment.

Keywords: Cybersecurity, information security, governance, small and medium-sized enterprises, ISO 27001:2013

INTRODUCTION

The global need for investment in information security and cyber awareness have increased as attacks on business and critical infrastructure is rising worldwide; (Check Point, 2022); (Sophos, 2022). However, adopting effective measures such as compliance with international best practices and accredited standards is far from being implemented. In this context, the specific characteristics of Small and Medium-sized Enterprises (SME), namely their size, regional and family scope, and limited financial resources, make them more vulnerable to cybersecurity and information security.

In recent years, many guidelines, frameworks, standards, and best practices have been made available by reputable organisations, namely the European Union (through the European Network and Information Security Agency - ENISA), standards consortia, and frameworks (such as ISO and NIST), and national governmental institutions. In Portugal, as in many other countries worldwide, the National Center for Cybersecurity provides a comprehensive collection of advice and best practices guidelines, such as roadmaps and frameworks, namely the minimum cybersecurity capacities roadmap, which is directed towards SME and was used in this study. These guidelines are meant to be adopted and implemented in a broad set of enterprises and other entities, forcing SME to sift through them to find what applies to their reality.

In this paper, we present a methodology to assess SME cybersecurity risk. The main goal of this methodology is to identify the critical points of convergence between the roadmap proposed by the National Center for Cybersecurity and the ISO 27001:2013 standard. The methodology identifies these points by correlating the roadmap's actions and the standard's controls. The resulting correlation map is the input to produce a questionnaire, considering the context of SME, that will integrate a survey for analysing the cybersecurity status of the organisation. The resulting survey was designed to be used in two distinct ways: as a self-assessment survey in which the SME may continuously evaluate their cybersecurity risk throughout time; and as a tool for IT consultants to evaluate the cybersecurity risk of the SME.

FUNDAMENTALS AND LITERATURE REVIEW

Definition of SME

According to the European Commission (2016), the SME definition considers staff headcount, annual turnover, and annual balance sheet total. Therefore, the micro, small and medium-sized enterprises have the following characteristics: employ fewer than 250 persons and have either an annual turnover not exceeding EUR 50 million or an annual balance sheet total not exceeding EUR 43 million. Even though SME and micro companies represent about 99.9% (Statista, 2021) of the companies operating in Portugal and produce 77% of total gross sales, little work has been done to facilitate the operation and

implementation of regulations in SME to protect them from cyber-attacks and to raise their level of cybersecurity, as detailed in Antunes et al. (2021).

Cybersecurity Governance

Within the European space, the European Union Agency for Cybersecurity (ENISA) is dedicated to cooperating with the Member States, institutions, and agencies of the European Union to empower communities to be prepared for a wide range of cyber-attacks. There are strategies and European legislation applied and followed by each member to combat the increasing number of threats and cyber-attacks. Several authors have presented the implications of following European legislation and strategies in each member state; (Carvalho et al., 2020); (Dimitrova et al., 2015).

As a shared concern among the various countries within and outside the EU, this cooperation of Member States allows for information sharing knowledge and policies, which assist in strengthening the defence capabilities of partner countries (Alhassan, 2021). A study conducted in 2019 made it possible to realise that concerns about cybercrime are in line with the average of European citizens. However, the percentage of Portuguese who take a preventive attitude to combat threats is slightly above the average recorded by the other citizens of European countries (Carvalho and Victor, 2022). In Costa et al. (2019), the authors evaluate the situation of the population and entities in Portugal, both private and the public sector, concerning cybersecurity behaviours.

Regarding adopting European legislation related to cybersecurity in Portugal, Alexandre P. (2020) thoroughly analyses the European Union's influence on its member states in terms of cybersecurity, looking at the legislation and role of the National Center for Cybersecurity. European member states have their dedicated organisation at the forefront of this field. The National Center for Cybersecurity in Portugal focuses on cybersecurity regulations, implementation, and monitoring. Whether about processes, technologies, or even people in cyberspace at the national level, it acts as a coordinator of operations and a national authority on cybersecurity for governmental entities, operators of essential services and critical infrastructures, and digital service providers. National Center for Cybersecurity also acts with society by being present in social networks to elucidate and advise users on what they should or should not be aware of, even outside the collaborative environment, to prevent theft of information, frauds, and other threats.

Minimum Cybersecurity Capabilities Roadmap

National Center for Cybersecurity has defined a model of minimum cybersecurity capabilities to improve processes and technologies in SME, to help them assess their cybersecurity risk and protect from threats and cyber-attacks. The roadmap, available on the National Center for Cybersecurity website (<https://www.cncs.gov.pt/pt/roteiro-capacidades-minimas-ciberseguranaa>), is divided into five phases, each designed to be implemented gradually, either internally or through external subcontracting. It is accessed free of charge and is a valuable resource for any organisation that wants to be minimally safe and secure.



Fig. 1. Roadmap phases

Figure 1 depicts the roadmap, divided into five phases, starting with the preparation. After this phase, the organisation's security architecture is developed, and security mechanisms are implemented in

devices and applications. In the final two phases, internal security policies and procedures are created, as well as the incident detection and prevention teams, when suitable to the organisation.

ISO 27001:2013 Standard

The ISO 27001:2013 standard (2013), particularly the ISO 27002:2013 guidelines, belongs to the ISO 27000 family. It is an international standard for Information Security Management with 114 controls and has as its primary objective the organisation of a collaborative environment, adopting a set of requirements, processes, and controls to decrease cybersecurity risks in the organisation. The function of each control is to identify and mitigate failures in the SME's information system management. The controls are organised into domains according to their objectives. Table 1 shows the domains indicated in the ISO 27001 standard.

Table 1. Domains of ISO 27001:2013 Standard

Domains of ISO 27001:2013	Brief description of the domain controls
A 5 - Information security policies	Defined (and reviewed) information security policies.
A 6 - Organization of security and Information	Definition of responsibilities to be assigned. Includes controls for mobile devices and remote work.
A 7 - Security in the management of human resources	Definition of procedures before, during, and after employment with an employee.
A 8 - Asset management	Controls related to asset inventory and acceptable use of them. Controls also for classification of information and handling of removable devices.
A 9 - Control of access to systems and applications	Definition of access controls to systems, users, and applications.
A 10 – Cryptography	Procedures for using cryptography in the organization.
A 11 - Physical and environmental security	Controls for the definition of secure areas, entrance control entrances, protections against threats, equipment security safe disposal, and clean work area.
A 12 - Operations Security	Definition of controls related to the management of IT production: change management, capacity malicious software, backups, event logging, monitoring events, monitoring, installation, and vulnerabilities.
A 13 - Communication Security	Controls related to security on the network, its segregation of networks, network services, information transfer of information, and e-mails.
A 14 - Systems acquisition, development, and maintenance of systems	Controls to define security requirements in the development and support of development and support.
A 15 - Relationship with suppliers	Definition of controls on what to include in agreements with suppliers and how to monitor them.
A 16 - Information security incidents management	Controls for reporting events and vulnerabilities that are detected, the definition of responsibilities in the management of incidents, procedures for a response, and collection of evidence.

A 17 - Information security aspects in business continuity management	Definition of controls, procedures for business continuity of business, review, and redundancy of IT.
A 18 – Compliance	Controls where laws and regulations applicable to the organization, protection of intellectual property, protection of personal data, and reviews to information security.

ISO 27001:2013 standard is very comprehensive concerning an organisation, as it deals with multiple topics such as telecommunications, physical environment, human resources, application security, and licensing, among others. As it establishes the processes and procedures, and the requirements of this standard are generic, they apply to all organisations regardless of the type, size, or nature of the business.

ISO 27001:2013 standard has been adopted in this study as a case study to evaluate the methodology. Other standards are also suitable to be mapped into the minimum cybersecurity capacities roadmap, namely the NIST framework and ISO 27009, just to mention some examples.

Literature Review

The research points out that the link between cybersecurity and its adoption in SME are scarce and reinforce the research's motivation and rationale. A comprehensive list of the most relevant research works is summarised below.

Mijnhardt et al. (2016) recognise the difficulty for SME to implement and use standards and frameworks targeting information security and cybersecurity. The research work focuses on formalising mechanisms to assess the maturity model of an SME regarding cybersecurity. Heidt et al. (2019) analyse the most relevant IT security research topics and the existing gap between their implementation in large enterprises and SME. The authors note that most topics operate under misleading assumptions like the existence of IT staff or well-defined processes.

Wilson et al. (2022) selected a subset of security threats and surveyed 85 SMEs according to the roadmap of minimum capabilities produced by the UK national cybersecurity centre. The authors aimed to evaluate the levels of impact and risks to which SMEs are exposed and to understand the division observed between perceived impact (considered high) and risk (considered low). The authors delineated a list of recommendations to provide tailored cybersecurity advice that means SMEs require guidance that considers their reality and constraints. In Candiwan (2014), the author conducted a study on implementing the ISO 27001 standard in Indonesia and concluded that SMEs are not well suited as a target of that standard. In Alexei (2021), the author conducted a research study in the Republic of Moldova, comparable to the one we present in this paper. In the research, the authors use the roadmap and the ISO 27001, as no mapping methodology was adopted as the one we propose in this paper.

METHODOLOGY

The methodology is intrinsically open and agnostic. That is, the mapping with the roadmap can be made with different existing and widely used standards rather than ISO 27001. The advantage of being open is that it not only allows cross-referencing one standard with the roadmap but is also prepared so that any standard can be applied. The developed methodology allows, as Figure 2 depicts, the use of other standards, such as ISO 27009:2020 (2020), NIST (2018), and even CIS Controls (2022).

In phase 1 of the proposed methodology, a study of the documents is carried out. One of them is fixed, in this case, the minimum cybersecurity capacities roadmap provided by the National Cybersecurity Center and the chosen information security and cybersecurity standard. After studying the actions of the

roadmap and controls (or other mechanisms) of the chosen standard, the correlation between them needs to be identified. These correlations are based on the description of the actions in the roadmap and the controls in the standard under study. To assert these correlations, a set of heuristics was defined to achieve a consistent result:

- **Action** - (ACT): Both the roadmap and the standard suggest the same or very similar actions.
- **Target** - (TRG): Both the roadmap and the standard have the same end goal even if the suggested actions are different.
- **Scope** - (SCP): Both the roadmap and the standard have the same scope, but the actions or even the explicit end goal are different.

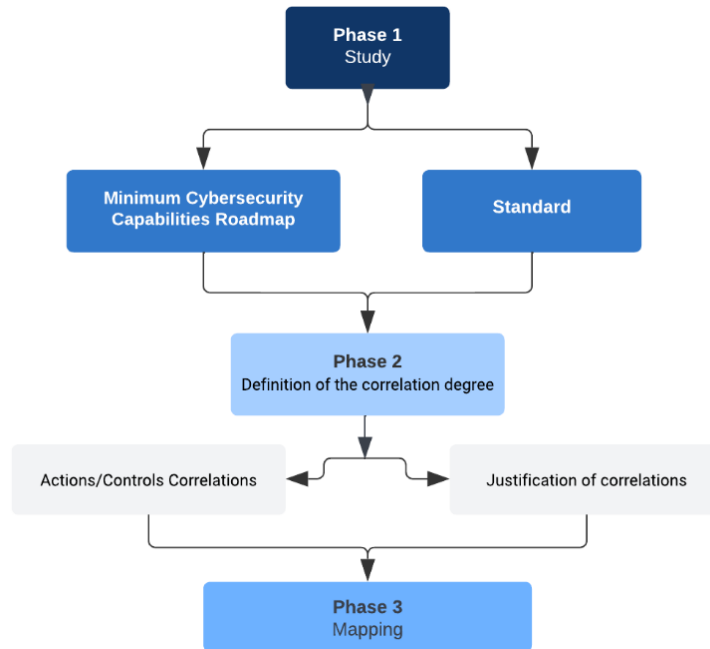


Fig. 2. Global description of the proposed methodology

To develop a more solid methodology, allying the roadmap to a complete standard with controls related to information security was necessary. In the case of the present methodology implementation, ISO 27001:2013 was chosen because it is a complete standard for developing an Information Security Management System. The controls were analysed to identify the possible correlations with the actions described in the roadmap, as shown in Figure 3.

After defining the degrees of correlation between the controls and the actions, a list of correlations and controls is created. Next, in phase 3, a mapping of the correlations is generated, with a graphical mapping of the classification of the relations with the heuristic that defined the correlation. The correlations obtained are then used to create a questionnaire for measuring the status of a company.

We analysed the phases of the minimum cybersecurity capabilities roadmap in the context of an SME. These phases are subdivided into actions concerning SMEs cybersecurity posture, which are suggestions for further implementation. In the initial phase, an independent study of the subjects was carried out. In the initial stage ISO 27001:2013 standard was systematically analysed, namely the study of the domains, control objectives, and controls associated with this standard that, when implemented in a company, the goal is to have security in the storage of an organisation's information, either by using mechanisms or even procedures recommended by the standard. After studying the minimum

cybersecurity capacities roadmap and the ISO 27001:2013 standard, the correlations between the standard controls and the roadmap's actions were analysed, thus trying to define the degree of existing correlations and justifying the reason for the relationship between them. As depicted in Figure 4, each action with a correlation to a control will trigger a question in the survey. The next Section will explain in more detail the mapping phase, which present the correlations between the minimum cybersecurity capacity roadmap actions and the ISO 27001:2013 standard.

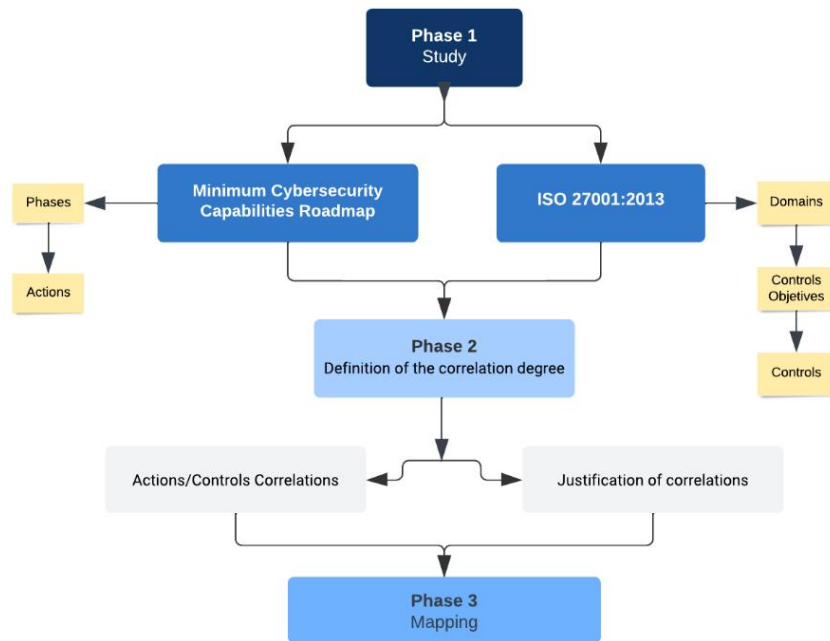


Fig. 3. Diagram of implemented methodology

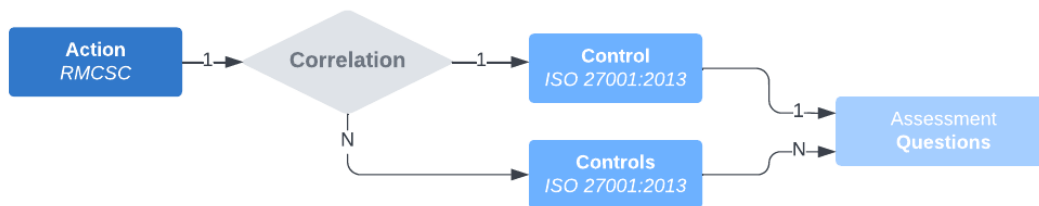


Fig. 4. Correlation Results – Question identification

MAPPING

The mapping methodology analyses correlations between each action reported in the minimum cybersecurity capacities roadmap with ISO 27001:2013 standards. A theoretical analysis and a summary

of each action and how it relates to one or more of the controls of the standard were made, as well as the identification of the connections between the actions (roadmap) and the controls (standard). The methodology comprises the phases of the roadmap, where each action will be related to one or more standard controls. An example of a correlation classified as Action (ACT) is described below:

Action A 2.10 of the roadmap (Backup/restore infrastructure maintenance) is related to ISO 27001:2013 standard to the control 12.3.1 - Backup copies, defining that it is essential to have mechanisms to safeguard the information considered a priority for the organisation, enabling its respective replacement in case of need. This classification (ACT) defines that the action description of the roadmap and the control suggest the same or similar actions. In addition to the backup data storage hardware that must be scaled up according to the organisation's needs, a set of procedures must be defined for backup and data replacement. In most cases, it is essential to provide off-site storage (off-premises) or even on a Cloud server due to the high importance of the information stored. In addition to performing backups, it is equally important to test their integrity, performing tests on them periodically.

Graphic Mapping of Actions – Controls

The relationships are illustrated in a two-axis table. The horizontal axis indicates the minimum cybersecurity capacities roadmap actions, as for the vertical axis, the ISO 27001:2013 controls. Figures 5 and 6 depict the correlation mapping obtained by applying the heuristics explained previously to the roadmap and the standard controls. The correlations are represented by acronyms and distinguished by colours. The red cells vertically demarcated are controls of the standard without fitting the actions of the roadmap (example - A 5.1.2; A 6.1.2), as well as the red cells on the vertical showing activities.

AC	A1.1	A1.2	A1.3	A1.4	A1.5	A1.6	A1.7	A1.8	A1.9	A2.1	A2.2	A2.3	A2.4	A2.5	A2.6	A2.7	A2.8	A2.9	A2.10	A2.11	A2.12	A2.13	A3.1	A3.2	A3.3	
CTR																										
A 5.1.1																										
A 6.1.1																										
A 6.1.3																										
A 6.1.4																										
A 6.2.1																										
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Fig. 5 and Fig. 6. Chart mapping actions/controls correlations - Part 1 and 2.

Case Study - SME Application

The case study aims to test the implemented methodology through the questionnaire generated, namely the correlations found between the actions of the roadmap and the controls of the standard under study. The scope of this case study was a set of SMEs located in the centre region of Portugal, belonging to several market sectors. Of the 50 companies invited to participate, 17 answered the questionnaire, which could be considered a data point as it reflects the relation of SME with IT security matters.

Technical View Before the Survey

Before conducting the survey, SMEs were subjected to a technical assessment. The purpose of this assessment was to compare the results obtained from the study, allowing us to have a sort of baseline to check and validate the questionnaire. This assessment was done as a qualitative ranking with the range of values being 1) Not satisfactory; 2) Satisfactory; 3) Good; 4) Very good. The results of this evaluation are shown in Figure 7.

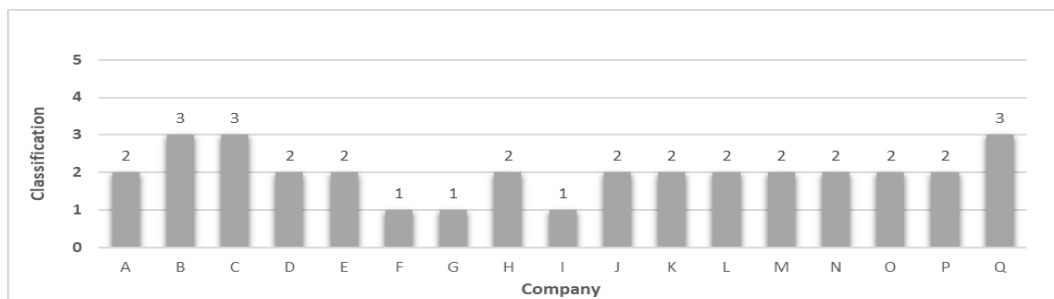
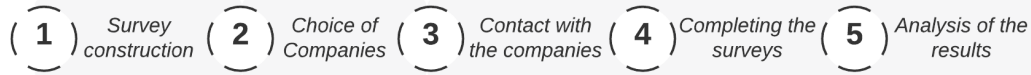


Fig. 7. Results of the technical view of cybersecurity status

Implementation of the Case Study

The implementation of the case study presented in this report, as shown in Figure 8, was performed in five phases. The process describes the tasks performed, from the construction of the



questionnaire to the analysis of the results obtained. Each task is detailed below.

Fig. 8. Survey development and implementation process.

Survey construction

The survey construction was based on the list of actions from the roadmap that had correlations with the standard. The questions were designed with the reality of SMEs by using language and terms that align with their reality. Two questions were added that are relevant to the scope of the implemented methodology, namely: i) whether the company has critical infrastructure within the company's premises, for example, servers, and ii) whether the company surveyed is classified as an SME, enlightening the user on the condition of a company, which is to have an SME status.

- Question 0: Is the organisation under survey an SME (Small or Medium-sized Enterprise)?
- Question 1: Does the organisation have critical computing infrastructure on company premises, for example a server?

The questions generated are grouped by the roadmap actions and presented in Table 2.

Table 2. Generated questions through correlations

Roadmap Actions (A)	Question:
A 1.1 A 1.2 A 5.1	2 - Does the organization have at least one person responsible for information security? 3- Regarding security incidents that do occur, does the organization have an element responsible for managing these incidents?
A 1.3	4 - In the organization are defined which services/functions and critical activities, activities that limit the production? 5 - Does the information that is stored in the organization have a defined classification regarding its importance, value, and sensitivity?
A 1.4	6 – When critical information is exchanged either with internal or external entities, are cryptographic controls used to safeguard the information in transit?
A 1.6	7 - Is there a risk analysis/management defined in the organization, where are identified the most likely risks that could arise, evaluated, and how they should be responded to should they become a reality?
A 1.7	2.1 - (If the answer to question 2 is positive) Do all employees of the organization know who is responsible for information security? 8 - Are all employees in the organization fully aware of their responsibilities, rights, and roles played in the organization?

INFORMATION SECURITY AND CYBERSECURITY ASSESSMENT IN SME

A 1.8	9 - Does the organization has defined information security policies, policies approved by management, and disseminated to other employees?
A 1.9 A 3.1	10 - Are there defined internal procedures for reporting cyber security incidents by employees? 10.1 - (If the answer to question 10 is yes) These incidents are classified according to their criticality so that there is triage/priority in the resolution of incidents.
A 2.1	11 - Are critical areas/zones of access to the organization defined both in logical terms (through the systems)? 12 - Are network architecture & information security designed? 13 - Has the organization implemented intrusion detection/prevention systems such as a Firewall/IDS?
A 2.2	14 - Has the organization implemented a system for collecting metadata of the traffic flowing on the network?
A 2.3	15 - Does the organization communicate with any group of professionals, either the NCCS (National Center for Cybersecurity) or others specializing in information security to expand knowledge?
A 2.4	16 - Is an inventory of assets and services carried out in your organization? 16.1 - (If the answer to question 16 is yes) Is this inventory of assets and services updated at least every 6 months?
A 2.5	17 - Regarding the centralized collection of records (Logs), which must be preserved for at least one year, does your organization perform this collection of records and in turn their secure storage? 20.2 - (If the answer to question 20 is yes) Are notifications of backups set up to notify in case of failure?
A 2.6	10.2 - (If the answer to question 10 is yes) Does the organization have configured correction or mitigation mechanisms for information security incidents?
A 2.7 A 2.8	18 - Does the organization have present and are they periodically updated, the legal and regulatory frameworks that its activity is subject to respect?
A 2.9	19 - Is the acceptable use policy (AUP) defined in the organization, as a policy that contains the guidelines for the use of resources in a safe manner by all employees?
A 2.10	20 - Regarding backups, has the organization implemented mechanisms to safeguard information (backups), at least of the information considered a priority? 20.1 - (If the answer to question 10 is yes) Are the backups made periodically tested to confirm that they are not corrupted? 20.3 - (If the answer to question 10 is yes) Are the backups made (if any) being replicated to the outside?
A 2.11	21 - Is a training plan for employees contemplated in the organization?
A 2.12	22 - Does the organization carry out internal awareness and training activities to raise employee awareness?

A 2.13	23 - Important people in the organization (administration, management) have training that is more oriented to the main mechanisms regarding security policy, risk management methodology, and their application in practice.
A 3.3	24 - Does the organization has configured mechanisms for logging and auditing access to databases with critical information?
A 3.4	25 - Are web access control mechanisms configured (a proxy for example)?
A 3.5	26 - Does the organization have a reliable antivirus configured on the most critical assets of the organization? 27 - Are there defined procedures for use of communication devices and/or mobile devices? (Cell phones, laptops, tablets)
A 3.6	28 - Has the organization set up a system for monitoring at least the main network assets?
A 3.8	29 - Has the organization implemented a SIEM, which aggregates the most relevant logs produced by the assets and by the applications supporting the activity?
A 3.9	30 - Has the organization defined a continuity plan, so that in case of disaster it is possible to continue with the business?
A 3.10	31 - The staff who is part of the information security department, TIC, have periodic training in the area so that they are properly updated in terms of existing dangers, vulnerabilities, etc.
A 4.1	32 - Have individual access privileges to information been properly approved by management and reviewed frequently?
A 4.2	33 - Has the organization proceeded to create security policies, best practices, and internal standards to be adopted by all employees?
A 4.3	34 - Is there a continuous reassessment of accesses, privileges, and procedures implemented in the company regarding information security?
A 4.4	35 - Does the organization perform simulations periodically to find vulnerabilities in what has been implemented for information security?
A 4.5	10.3 - (If the answer to question 10 is positive) Do all employees of the organization know how they should report an incident? 2.2 - (If the answer to question 2 is yes) Does that responsible, for identifying the most common types of attacks and creating methods for their automatic mitigation?
A 4.6	36 - Do employees, especially those in management positions receive adequate education and training for proper compliance as defined for each role and even in terms of information security?

<p>A 4.7 A 4.9</p>	<p>37 - Are security tests performed on new services/applications before they are exposed to use by all users? 38 - In case of application/service upgrades, are tests carried out to ensure that the current functionality is not affected?</p>
<p>A 5.3</p>	<p>39 - Is an audit plan implemented, with a periodicity of at least a year?</p>
<p>A 5.5 A 5.6</p>	<p>40 - Is an approved action plan and budget contemplated to set up and operate the CSIRT team or SOC?</p>
<p>A 5.7</p>	<p>41 - Does the organization have a crisis management system capable of handling major security incidents?</p>

SME’s Characterization

The SMEs under study are based in the central zone of Portugal and have between 10 and 100 employees. The focus areas of the organisations differ, namely renewable energy, air conditioning, furniture manufacturing, and accounting services, among others.

Filling Out the Questionnaires

To reinforce the invitation sent to the companies to fill out the questionnaire by phone and e-mail, we took advantage of a technical visit to resolve IT-related issues and explain the study's scope. After agreeing to participate in the study, a link to the questionnaire was sent to the individual in the entity most qualified to answer. In most companies, there was monitoring in person or by telephone to help explain any doubts that might arise to achieve a reliable result.

RESULTS ANALYSIS

Although the results were anonymised, the organisation's name was requested so that some controls could be mitigated at a future stage. For the development of this project, an identifier was assigned using a letter (A, B, C) to each company, and all the processing and presentation of results only used the assigned identification. Some questions in the questionnaire were generated through the correlations between actions - controls are conditional. This condition denotes that depending on the user's answer, some associated questions may not appear. In questions with conditionals where "no" is chosen, the questions associated with that conditional are considered negative because the questions underlying the main question that has the conditional with a negative answer are actions not implemented in the evaluated SME. The positive answers to a subject in the questionnaire reveal a positive scope in SME, that is, the subject under evaluation is implemented in the company.

Table 3 summarises the data obtained in the research. Analysing the percentage values of the responses obtained, we have only three organisations with results more significant than 50% of positive responses, making up only 18% of the organisations surveyed. The substantial percentage of negative responses ("NO" column) may induce that there is much to implement and improve in organisations to be effectively safe.

The results obtained in the questionnaires sent to the 17 organisations are presented graphically, namely the percentage of positive and negative responses. By observing Figure 9 and Figure 10, we may

perceive that there are companies with a remarkably high number of negative answers, which indicates that these SMEs are not very prepared and secure regarding cybersecurity.

Table 3. Results of the questions by SME

Company	Answers <u>Yes</u>	Answers <u>No</u>	Percentage <u>Yes</u>	Percentage <u>No</u>
A	17	33	34%	66%
B	34	16	68%	32%
C	25	25	50%	50%
D	16	34	32%	68%
E	26	24	52%	48%
F	19	31	38%	62%
G	6	44	12%	88%
H	30	20	60%	40%
I	15	35	30%	70%
J	10	40	20%	80%
K	16	34	32%	68%
L	12	38	24%	76%
M	16	34	32%	68%
N	22	28	44%	56%
O	10	40	20%	80%
P	15	35	30%	70%
Q	24	26	48%	52%

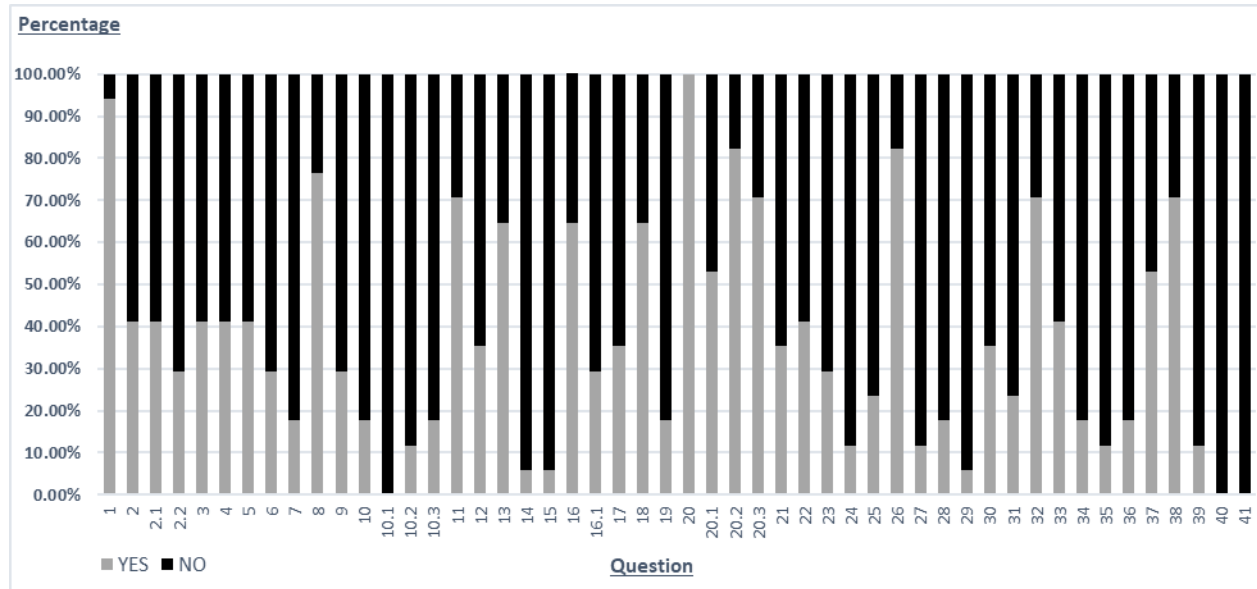


Fig. 9. Results by Question - Percentages

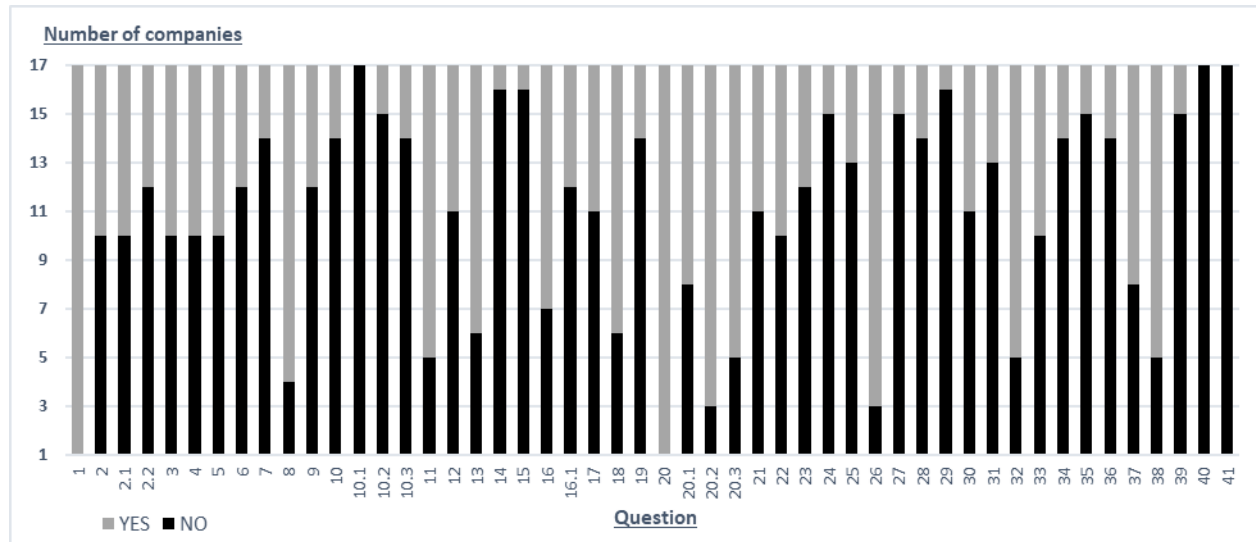


Fig. 10. Results by Question - Number of Companies

To complete the analysis of the data and to measure the cybersecurity effectiveness in the companies under study, the quantitative method was used on a scale of 1 to 4, with percentage differentiation for each value on the scale. Similarly, to the percentage range of values for the technical view, the levels to evaluate the organisation are as follows: 1) Not satisfactory – 0 to 24,9%; 2) Satisfactory – 25 to 49,99%; 3) Good – 50 to 74,99%; 4) Very good – 75 to 100%.

In global terms, as shown in Figure 11, the average result obtained from the questionnaires conducted to the organisations surveyed is a value of 2 (two). This value allows us to justifiably state that organisations, in general, are not adequately prepared and protected for problems that may arise in terms of cybersecurity. Section 5 of the National Center for Cybersecurity script attained the most negative value in filling out the questionnaire. Besides the lack of resources mentioned above, one explanation for this result is that these companies do not have an organisational structure where the suggestions described in this section make sense to be implemented.

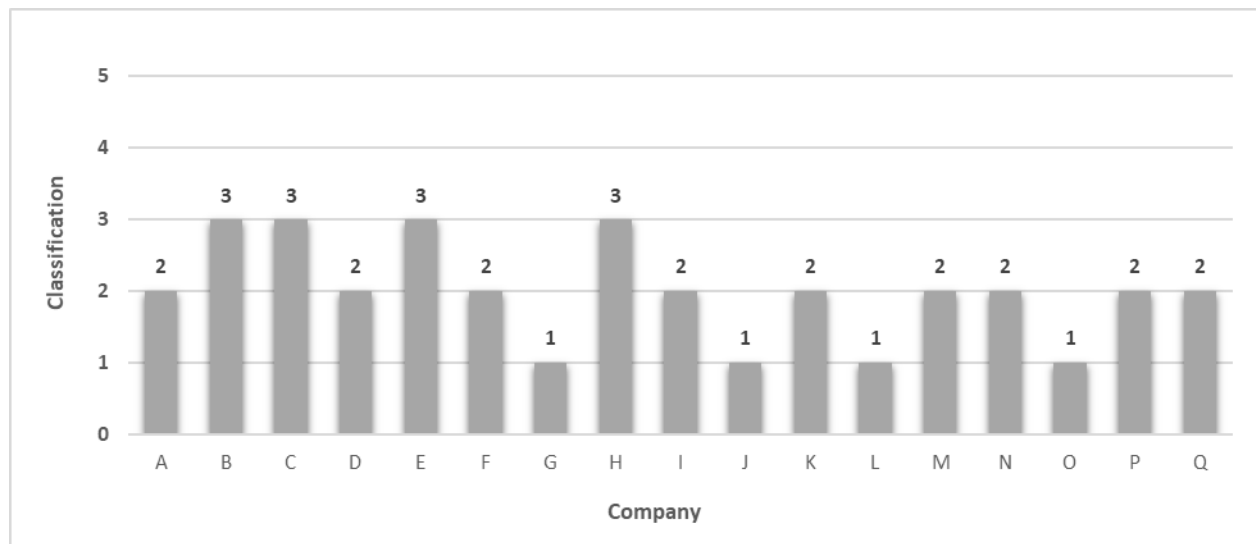


Fig. 11. Questionnaire Results

Comparison Between the Technical View and The Results Obtained.

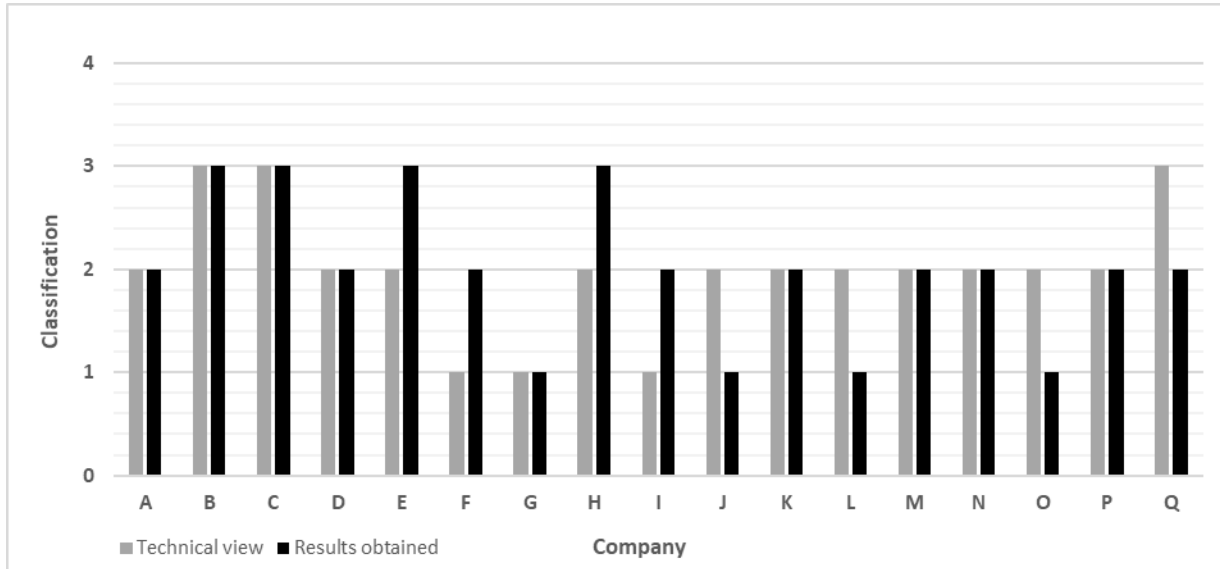


Fig. 12. Comparison between the technical view and the results obtained.

As depicted in Figure 12, graphically combining the results of the survey of the technical view and the **real** results, resulting from the elaboration of the questionnaires to the organisations, in average terms, the value obtained is 2 (two), satisfactory. However, in some organisations, the technical vision and the reality of the organisation's state are not coincident, and the value obtained from filling out the questionnaires differs from the technical view.

On average, the result obtained is a value of 2 (two) in the technical view surveyed companies. Only 3 of the 17 companies (18 %) were rated 3 (Good), and 11 of the 17 companies (65 %) were rated 2 (Satisfactory). This indicates that most companies are in the same state from the point of view of cybersecurity. Companies are trying to improve their defensive position because protection mechanisms are already in place.

Examples of constant concern in companies are backups, although external replication and tests to ensure recovery are often not contemplated.

CONCLUSION AND POLICY IMPLICATIONS

Incentivising the top managers of an organisation to invest in this area is a difficult mission, as the investment in cybersecurity ends up being seen as a cost, and an administrator or person in charge will only bring profitability in case of serious security incidents, even knowing that these incidents are increasingly common. This fact reinforces our initial assumption that these organisations are ill-equipped for the digital age and need tools that are simple, straightforward, and without the requirement of a high degree of technical knowledge. Working with the SMEs on the case study allowed us to test the methodology in the real world and experience first-hand the struggles that SMEs face in terms of cybersecurity and governance.

By defining a methodology to combine formal standard documentation with governance guidelines approaches, we feel confident that this research provides a new tool for SMEs to achieve a better security posture within the constraints of their reality. By finding the convergence of these two

approaches, we have distilled their insights into a practical set of critical points helpful in assessing the current state and preparing to improve SMEs security posture.

Besides the contribution to SME, the research work presented in this paper, namely the well-defined methodology, can be applied to many companies' information security and cybersecurity guidelines. Cybersecurity is constantly expanding by either new threats or technologies, but so are the demands on SMEs by the economy and market forces. For an SME, it is hard to decide the best use of their limited resources. This study is a tool that helps make that decision by assessing a SME's current state and highlighting the areas that need improvement.

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MACROECONOMIC POLICIES AND THE IMPACT OF FOREIGN DIRECT INVESTMENT AND REMITTANCES ON EXPORTS - REPUBLIC OF KOSOVO CASE STUDY

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ABSTRACT

Foreign Direct Investment (FDI) and remittances remain one of the most important sources of socioeconomic development in the Republic of Kosovo. The purpose of this research is to examine the policy and trends of FDI, remittances, and exports in the Republic of Kosovo, as well as the impact of FDI and remittances on export growth. The results show that Kosovo has an unsatisfactory level of FDI as well as exports, whereas remittances have shown signs of improvement over the years, and the effect of remittances on the growth of exports is acceptable. The ordinary least squares method was used to calculate the effect of the independent variable on the dependent variable, and the level of significance of the hypotheses was determined using the t-test and ANOVA. The highest FDI was in 2011, 384.4 million euros, the highest remittance income was in 2020, 940.4 million euros, and the highest value of exports was in 2020, 474 million euros. Based on the regression analysis of the effects of FDI and remittances on export, the coefficient for FDI is 0.139, and the coefficient for remittances is 0.347, indicating that both coefficients are positive. Kosovo's FDI and export performance are a result of poor economic development and ineffective policies for the promotion of FDI and exports. It is recommended that state policymakers develop more sustainable and effective policies that lead to increased FDI, remittances, and exports. Such policies will assist organizations, businesses, and employees in increasing the level of investment, remittances, and exports by creating long-term stability for these indicators. Furthermore, a critical evaluation is required in order to increase FDI, remittances, and exports, to create economic stability in terms of FDI, remittances, export, and regional economic development, among other things.

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Keywords: Foreign investments, management policies, export, regression, remittances

INTRODUCTION

In Kosovo, the effective management of investment, remittances, and export policies is critical to absorbing FDI, increasing remittances, and increasing exports (Instituti Demokraci për Zhvillim, 2017). Decision-making institutions at the national level should focus more on creating an enticing environment for FDI, remittances, and trade balance improvement. Foreign investment is critical for many companies across the globe, including the Republic of Kosovo, which is looking for foreign investors to help it overcome current problems, which is also a result of the history of this country.

Kosovo has the capacity and purchasing power to be an attractive destination for small and medium-sized businesses wanting to invest. Furthermore, FDI promotes economic growth by increasing the accumulation of human capital, technological innovation, foreign trade, and stimulating domestic investment. According to the Central Bank of Kosovo (CBK) (2022), the trend of FDI in Kosovo is negative.

Investments in Kosovo are still influenced by international economic developments, particularly those in the eurozone. Indeed, according to CBK statistical data on remittance trends in Kosovo from 2010 to 2020, the trend of remittances from 2010 to 2020 shows signs of improvement, with the value of remittances in Kosovo reaching 940.4 million euros in 2020. Exports of goods and services are a significant source of income from foreign exchange, and as a result, they relieved the pressure on the balance of payments. Exports can boost intra-industry trade, assist the country in being integrated with international markets, and thus mitigate the impact of external recessionary shocks on the country's economy.

According to the Statistical Agency of Kosovo (ASK), it appears that in 2020, Kosovo had exports worth 474,884 million euros and imports worth 3,296,635 million euros, for a percentage of import coverage of 14.4 percent (ASK, 2021). FDI provides access to advanced technology, which benefits both the growth of overall productivity and the income component (Patrick, 1966). The development of superior fiscal and administrative policies, as well as legal infrastructure, makes Kosovo a more appealing and favorable environment for foreign investors (World Bank Group, 2019).

Direct investment is a type of international investment in which a subject residing in one economy transfers stable income to a subject residing in another economy and exerts significant influence over the latter's management (IMF, 2003). Most host governments are concerned about the impact of FDI on their country's balance of payments accounts. FDI can have three different consequences. First, when a company establishes a foreign branch, the host country's capital account benefits from the initial inflow of capital. Second, if FDI is used to replace imports of goods or services, it can help the host country's balance of payments. When businesses use a foreign subsidiary to export goods and services to other countries, a third potential benefit to the host country's balance of payments arises. Foreign investment brings with it advanced technology, administrative skills, and access to export markets (Moosa, 2002).

Foreign marketing investments have an impact on the creation of service and product links to international markets. One of the primary reasons for the disparity in definitions of FDI stems from differences in the weight given to the characteristics of companies operating in the international arena (Hood & Young, 1979). FDI can contribute to long-term financial stability, which affects both economic development and social progress. Some researchers who have dealt with FDI see foreign investment as a solution to global problems such as poverty, but there are also some researchers who believe the opposite, that FDI is what causes disasters. Investment activity is determined by government stock in mutual funds, government stock in bonds, government stock in corporations, and government stock in liquid assets (Kgom, 2021).

Export performance is defined as the rate of growth in export sales as well as the percentage of exports to total sales (Aaby & Slater, 1989). Smith analyzes a number of issues in his book *The Wealth of Nations*. According to Smith, a nation would produce and trade abroad those goods where it had an absolute advantage in their production compared to another nation, that is, it produced such goods at a lower cost (Smith, 2010).

Economic development is one of the primary goals of all societies around the world. Many factors influence economic growth, but exports are regarded as one of the most important contributors to economic growth (Balassa, 1977). According to World Bank data, global remittance inflows totaled \$580 billion in 2014, with 247 million international migrants (World Bank, 2017). Studies that focus on the positive effects of remittances find that these effects are primarily in terms of poverty reduction and increased development, with the majority of these effects occurring in developing and transition countries (Gupta et al., 2007).

Remittances have a significant impact in Kosovo because they provide an additional source of income for host families. According to the regression analysis of FDI and exports, the value of the parameter $\beta_1 = 0.139$, which means that for each unit increase of the value of the variable X, namely FDI, the value of variable Y, namely exports, has increased by 0.139 units, and so, for each million euro increase of FDI, exports have increased by 0.139 million euros.

The value of the parameter $\beta_2 = 0.347$ in the regression analysis between Remittances and Exports, which means that for each unit increase of the value of variable X, in this case, Remittances, the value of Y, still Exports, has increased by 0.347 units, and for each million increase of Remittances, exports have increased by 0.347 million euros. During our research, we aimed to answer the following research questions: How much did FDI in Kosovo influence the growth of its exports? How much have remittances influenced the growth of Kosovo's export? That is, [H₁] is that FDI in Kosovo has had an impact on export growth and [H₂] is that remittances to Kosovo have influenced export growth. While conducting this study, it was noticed that there is an information gap. The demand for comprehensive information on foreign trade, FDI, and remittances is evident; therefore, this research will have an influence on mitigating this information gap, creating sustainable policies, and influencing innovative and analytical skills in the macroeconomic aspect. The following elements make up the paper's structure: the present section, constitutes the Introduction. The second section includes a literature review. The third section explains the research methodology. The fourth section presents the results of the analysis and a discussion of the results, fifth section offers some conclusions and recommendations and the sixth section limitations and future study.

LITERATURE REVIEW

International economic and financial institutions, as well as a large number of academics, have presented a significant number of studies on FDI, remittances, exports, and their definitions. Researchers have long sought to identify the effects of FDI, remittances, and the causes of low investment or remittances.

Various researchers (Bellaqa & Bajrami, 2021; Jusufi & Bellaqa, 2019; Bellaqa & Jusufi, 2020) have used data sourced from various institutions in their research on FDI, remittances, and exports in Kosovo (American Chamber of Commerce of Kosovo, World Bank, International Monetary Fund).

However, studies on the effects of FDI and remittances on export growth, as well as foreign investment policies, remittances, and the export component, are severely lacking. One of the most important factors in international integration and economic development has been and continues to be FDI and remittances. One of the primary theories of FDI and remittances is as follows:

Monopolistic Advantage Theory

This is the horizontal foreign investment theory of monopolistic advantages, as explained by the theory of monopolistic advantages. According to the theory, investing firms have a relative monopoly advantage abroad over domestic final enterprise. The company has a monopolistic advantage in two ways: superior knowledge and technology, as well as economies of scale (Lall & Siddharthan, 1982).

The existence of a monopolistic advantage has been suggested in horizontal foreign direct investment by the US firms' knowledge-intensive industries, such as petroleum, pharmaceuticals, chemicals, and transportation equipment. It has also been observed in the case of American firms operating abroad in high-level skill-oriented marketing industries such as cosmetics and fast food (Root, 1978).

Advantage Theory of Oligopoly

The oligopoly theory of advantage explains the oligopoly theory of vertical FDI advantage. By establishing entry barriers, large oligopolistic enterprises tend to dominate the global market. They tend to capture and expand market share in the global market through vertical foreign direct investment. Thus, the oligopoly theory explains a multinational firm's defensive investment behavior. As a result, oil companies typically invest in crude oil refineries as well as marketing (Head et al., 2004).

Vernon's Theory of the Production Cycle

Vernon's theory claims that the production cycle can explain both trade and FDI. Platform Life Cycle Management (PLCM) can explain a firm's shift from exporting to FDI by adding a time dimension to the theory of monopolistic advantage. Initially, when a firm produces a product, it does so in its home country, taking advantage of its monopolistic advantage in the export market; as a result, it specializes and exports. Once the product has reached a standardized stage of production, the firm may prefer to invest abroad and export from there in order to maintain its monopoly power. Rivals from the home country may also follow to invest in the oligopolistic market of the same country. In short, combining international trade and investment theories can help to explain the complexities of international business and marketing behavior (Vernon, 1966).

Dunning's Eclectic Theory

There are numerous strategies for selecting an entry method, each with advantages and disadvantages. Exporting, licensing, franchising, forming a strategic alliance, forming a joint venture, acquisition, or starting from scratch with a greenfield investment are all common strategies. Using the so-called OLI paradigm, also known as the eclectic paradigm, is a good way to at least exclude some of them. The acronym OLI (Ownership - Location - Internalization) stands for the benefits of Ownership, Location, and Internationalization. According to this paradigm, a company must have all three advantages in order to engage in FDI successfully (Dunning, 1969).

One definition of FDI that we can highlight is that "Foreign Direct Investments reflect the aim of securing a stable interest of a resident unit in an economy (direct investor), in a unit of residence of another economy (direct investment enterprise), according to the Organization for Economic Cooperation and Development (OECD) (OECD, 2007). According to the traditional definition, FDI occurs when a company from one country makes a physical investment in another country by establishing an enterprise or industrial firm of any kind (Rugman & Colli, 2006).

Foreign investment has different objectives when compared to portfolio investments, where investors generally do not expect to have an impact on the management of the enterprise (OECD, 2008). Nevertheless, the expansion of trade and the increase in foreign investments in a country have brought with them a wide range of benefits and expenses for individuals, organizations, and different countries, resulting in economic growth in that country (Bandelj, 2009). The term FDI refers to the purchase of physical activities abroad, such as plant and equipment, by the parent company (Portelli & Narula, 2006).

Several definitions of remittances have been given, one of which we can outline: income sent home by immigrants who earn money abroad are considered remittances. They represent a private flow of capital from the place of employment to the country of origin, and remittances from immigrants have a significant impact on the recipient country's increase in income and standard of living (Taylor & Wyatt, 2006).

Economic difficulties, a bad political situation, unemployment, natural disasters, and other factors can all motivate people to leave a country. Pull factors are the factors that encourage and motivate people to move to a specific location (Everett, 1966). Several definitions of exports have been provided, one of which can be highlighted. Exports advance the distribution of resources and, in particular, improve capital utilization due to competition in international markets (Balassa, 1978).

Exports will influence an enterprise to invest in more advanced technology, which will help in the strategic aspect of increasing output (Ghirmay, et al., 2010). Economic development has an impact on export growth if domestic production grows faster than domestic demand. Export assistance, in turn, allows poor countries with a small market to benefit from economies of scale (Helpman & Krugman, 1985).

Remittances and Development

Studies of remittances have shown that remittances have played an important role in economic development and social improvement. Immigration solves social problems such as reducing unemployment, poverty, providing economic support, developing professional skills, and enhancing the qualities acquired from developed countries. It occurs from a cultural, educational, or artistic standpoint (Smith, 2007). Taking higher wages in the host countries as a starting point, production in these countries is higher than in the country of origin, which affects migration to these countries and causes global output to increase (Krugman & Obstfeld, 1991).

Remittances can also be of a social nature, such as ideas, behavior, identities, social capital, and knowledge acquired by migrants while living in another part of the country or abroad and transferred to the communities of origin (Migration, 2020).

They serve as an important safety net during times of crisis, providing critical resources that can assist families in dealing with unexpected shocks such as a low crop yield or a natural disaster (Dipti, 2017).

Workers' remittances have become an important source of income for many developing countries in recent decades, and as a global aggregate, they are the second largest source of foreign financing after FDI (Ekanayake & Moslares, 2020). In the migration and development debate, migrant remittances are not a new topic. However, there has been an increasing trend in the monetary flows from immigrants in recent years, which has resulted in a revival of remittances (European Parliament, 2014). Existing models treat migration as an individual or family decision, that is, migration is modeled as the result of the potential migrant's and other family members' joint maximization of services (Hoddinott, 1994).

Exports

Economic growth has an impact on export growth if GDP grows faster than domestic demand (Shan & Tian, 1998).

Economic growth is defined as an increase in output, production capacity, and all other economic components. Companies begin exporting for a variety of reasons, and these reasons are related to the strategies that these companies employ. For starters, businesses may want to increase sales and profits by selling their products on the international market. Second, businesses can diversify their sales. Third, businesses may seek to capitalize on new knowledge and skills by selling to international markets (Wild et al., 2008).

Many factors influence export development, and these factors are divided into internal and external factors. Internal factors are more controllable and arise from the company's internal environment, whereas external factors are completely uncontrollable and arise from the company's external environment. External factors include political, economic, social, and technological factors, which are best explained by industrial organization theory (Sorokina, 2012).

In economies with a labor surplus, an export-oriented approach allows for rapid growth of employment and real wages. (Krueger, 1980).

Empirical Investigation

In addition to using comparative methods to analyze the trends of FDI, remittances, and exports, regression analyses were also performed on the assessment of the effects of FDI and remittances on the growth of exports, therefore the examination technique was used, with the method of least squares (OLS) fixed effects. The data used for research can come from a variety of sources when using a quantitative method (Fielding & Pillinger, 2008). Comparative methods were used to compare trends in FDI, remittances, and exports over an eleven-year period, 2010-2020. The French mathematician Legendre applied the least squares method for the first time in 1806 (Nuhui & Shala, 2005).

Management of Investment, Remittance, and Export Policies in Kosovo

The current situation of economic development related to FDI creates the need for the completion of economic policy measures, legal infrastructure, and institutional environment to create a more attractive environment for FDI. However, within this increase, there are still many large disproportions that can make it difficult to maintain the sustainability of economic growth and macroeconomic stability. Political and macroeconomic stability play an essential role in the decision regarding FDI, therefore the lack of political and economic stability makes a country very unattractive for FDI, even though it may offer other advantages (Schneider & Frey, 1985).

Institutional reforms, the fight against corruption and informality, the lack of a more efficient macroeconomic management in Kosovo has led to the fact that we do not have a proper performance for FDI as well as having a negative export balance. From the regional point of view, Kosovo should benefit from its central position in the region, by attracting investment from the regional market and beyond. The quality of institutions is a favorable determinant of foreign investors, especially in less developed countries.

This is for several reasons. First, good governance is associated with economic growth, which attracts FDI inflows. Second, poor institutions tend to be easily corruptible, thereby increasing investment costs and reducing profits. Third, the high start-up cost of FDI makes investors very sensitive to uncertainties, including uncertainties stemming from fragile institutions (Sakollari, 2013).

Every country which aims at economic development through foreign investment, in this case Kosovo too, has established agencies for the promotion of investment, and these agencies are the connecting links for creating an image of a country as an investment destination, absorbing new foreign investment, and improving the climate for doing business. In the case of non-promotion of FDI, there comes about the establishment of barriers regarding knowledge and opportunities for permanent and potential investors. The investment promotion agency, in consultation with foreign investors, identifies the obstacles, which are considered to be the reasons for non-investment, and presents these to the government as a recommendation, with the aim of avoiding them. Their other role is to support efforts to eliminate regulatory obstacles, such as bureaucratic procedures for registration and licensing of enterprises as well as tax administration (AIDA, 2021).

Investment policies should be more transparent in order to address all investors equally, regardless of whether they are private, foreign or local. These address the relationships between GDP, consumption, savings and investments - the relationships between the requirements of capital investment and the budget - the relationship between imports and exports, unemployment and investment. Kosovo continues to face problems in attracting FDI. Despite the fact that over the year's progress has been made in several factors such as tax and macroeconomic policy reforms, and investments in road infrastructure, Kosovo continues to not attract investment from large investors (Democracy for Development, 2021).

Although the majority of social enterprises in Kosovo have been privatized, it is clear that the success in the privatization of medium and large social enterprises according to the "Spin-off" model will essentially depend on the readiness of external and internal investors with solid financial opportunities. Based on the fact that the public infrastructure, especially telecommunications, energy and some of the public services can be attractive for foreign investors, the opening of reform processes within public enterprises is of essential importance (Rinvest, 2002).

Based on the situation and economic development in Kosovo, remittances have served as a very important pillar for the economic development of the country as well as for social development. The creation of a stable system of investment policies, remittances and export policies will create a situation where we can have more FDI, more remittances and we will have an incentive for exports from businesses. Therefore, Kosovo must work more in the advancement of investment management policies in order to improve the investment environment and increase exports. The importance of foreign investment is multiple and the performance of investments affects the economic and social progress of the country. FDI brings the necessary capital, increases the productivity of the economy, and among others through the transfer of knowledge and technology, affects the opening of new markets for trade, increases the competitiveness of the economy, affects the reduction of exports, increases employment.

METHODOLOGY

In this article, the theoretical aspect is addressed through the use of current literature as well as scientific research works in the fields of FDI, remittances, and exports. From 2010 to 2020, presentations of FDI, remittances, and export trends in Kosovo, as well as analyses of the trends in FDI, remittances, and exports, have been made. To ascertain the functional relationship between the independent variables FDI, Remittances, and the dependent variable Exports, the OLS method was used to measure the effect of the variable X on the variable Y (here, exports) in relation to the discovery of the functional relationship between X and Y , that is, $Y = f(X)$.

Changes in the dependent variable Y , in our case exports, are assumed to be caused by changes in the independent variable X , in our case, FDI and remittances. The empirical analysis of the regression will

be presented in order to determine the functional relationship between the impact of FDI and remittances on exports. The analysis is based on the examination of data obtained from credible local and international institutions.

The linear regression formulas can be presented as follows:

$$Y = \beta_0 + \beta_i X_i + \varepsilon \tag{1}$$

Where:

- Y - Dependent variable;
- β_0 = Constan;
- β_i - Partial regression coefficients;
- X_i - Independent variable;
- ε - Standard error;

In this study we tested the influence of the independent variables FDI and REM (as defined below) on the dependent variable EXP.

The following linear regression model was used:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \tag{2}$$

The dependent variable *Y*, namely, Exports, abbreviated EXP, was compared to the independent variables:

- X_1 – Foreign direct investment in export growth, abbreviated FDI
- X_2 – increasing export remittances, abbreviated REM

$$Y \text{ EXP} = \beta_0 + \beta_1 \text{ FDI} + \beta_2 \text{ REM} + \varepsilon \tag{3}$$

Before proceeding with the ANOVA, we determined the mean of *Y*, denoted by \bar{y} , the mean \bar{x} of *X*, the parameter *b*, the parameter *a*, and the value of *Yc* using the following formulas:

$$\bar{y} = \frac{\sum Y}{n} \tag{4}$$

$$\bar{x} = \frac{\sum X}{n} \tag{5}$$

$$b = \frac{n \sum xy - \sum x Y}{n \sum x^2 - (\sum x)^2} \tag{6}$$

$$a = \bar{y} - b * X \tag{7}$$

$$Yc = a + b * x \tag{8}$$

Where:

\bar{y} : the arithmetic mean of the occurrence of Y;

\bar{x} : the arithmetic mean of the phenomenon of X;

b: the incline of the regression, or the average change in Y_c for each changed unit of X;

a: Y's estimated value when $X = 0$;

Y_c : Y's average value defined for the value of X.

Y: Dependent variable;

X_i : Independent variable;

n: the number of years;

ANALYSIS AND DISCUSSION OF THE RESULTS

Foreign direct investment trends, remittances, and exports in Kosovo, 2010-2020

FDI remains one of the most important sources of capital flows and economic development in the Republic of Kosovo. According to the report by the American Chamber of Commerce in Kosovo on FDI in Kosovo, published in July 2021, FDI contributes to economic growth by increasing the accumulation of human capital, technological innovation, foreign trade, and stimulating domestic investment (American Chamber of Commerce in Kosovo, 2021).

We base our analysis of FDI trends on data published by the Central Bank of Kosovo (CBK) on FDI trends in Kosovo by sector from 2010 to 2020, with data published in February 2022. According to the findings of this report, the largest investments were made in 2011, 384.4 million euros, and in 2010 year, 398.5 million euros, while the smallest were made in 2014, only 151.2 million euros and in 2016, 220 million euros. Investments in Kosovo are still influenced by inter-country economic developments, particularly in eurozone countries. From 2010 to 2020, it appears that more than three billion euros were invested in Kosovo, with Germany leading the way with approximately 700 million euros, followed by Switzerland with approximately 650 million euros, and other countries participating with smaller investments in Kosovo (CBK, 2022).

We believe that political instability played a role in the marked decrease in FDI in 2014, but one thing that stands out and causes confusion is the increase in FDI in 2020, which is based on the economic shock effects of the COVID-19 pandemic not only in Kosovo, but globally. Investments made by representatives of economic organizations are thought to have little impact on the economy. The highest volume of foreign investment was made in the real estate sector, which is primarily attributed to the Kosovan diaspora, which invests large sums in the construction of housing and the purchase of apartments (Ekonomi, 2021).

Based on comparative analysis, FDI trends in Kosovo over the years do not appear to be increasing in stability; therefore, decision-making institutions in Kosovo must create a motivating environment for foreign investors. One of the reasons for the decline in FDI is a lack of a motivating environment at the appropriate level for FDI. A lack of demand for high quality project evaluation can also lead to a weak evaluation system. The most damaging factor in limiting the value of this aspect of investment management is often a lack of domestic political support for assessment as a basis for project selection.

To advance FDI promotion activities, it is necessary to increase the support and encouragement of the relevant actors in the promotion of investment. One of the recommendations that the Ministry of

Trade and Industry, as well as other relevant actors dealing with investment policies, should implement the creation of a package of incentives for FDI, particularly in the field of production, in order to ensure local production and adjust the balance of trade, where Kosovo still faces a pronounced negative trade disparity. It is necessary to create a favorable climate for business development, which can be achieved through the rule of law, the fight against corruption and organized crime, informality, the rationalization of tax procedures, and so on.

State governments should take a more active role in creating an appealing FDI environment by developing the best practices and coordinating efforts to address FDI-related issues. Reforms in the implementation of legislation, taxes, reducing the level of corruption, and so on, are required. Improving the business climate is critical for FDI absorption and the development of small and medium-sized businesses. In order to be competitive in the region and beyond, Kosovo must improve its investment management policies. Superiority in terms of a favorable tax system, natural resources, quick and easy business registration, transparent laws on foreign investment, and other benefits would make Kosovo a more appealing and favorable environment for foreign investors. We should also pay close attention to the development of infrastructure for product quality in accordance with the requirements of the European Union and global standards, etc. Many economic studies conclude that exports are one of the most important contributors to economic growth. Countries with higher exports also have higher economic growth and a more stable economic growth model, especially if the exports are diverse.

In Kosovo, exports increased slightly from 295.957 million euros to 319.165 million euros, or 7.84%, from 2010 to 2011, but this growth has been unstable, and exports decreased from 319.195 million euros to 276.100 million euros, or 13.49 %, in 2012. Then, from 2013 to 2019, there was a slight increase in export, but the most significant increase in exports was in 2020, when we compare it to the exports realized in 2019, which was 383.491 million euros, we have an increase in exports of 474.884 million euros, or a 23.83% increase. According to an analysis of exports from 2010 to 2020, the Republic of Kosovo appears to have had a negative trade balance. Merchandise trade in 2020 was worth 2.8 billion euros, indicating a trade deficit about -9.4% less than in 2019. In 2020, total exports were 474.8 million euros, while imports were 3.2 billion euros, implying that exports cover only 14.4% of imports (Statistics Agency of Kosovo, 2021).

Table 1. Trends of exports, imports, trade balance in millions of euros and chain index in percentage in Kosovo from 2010 - 2020

Period	Exports	Chain indices for exports	Imports	Chain indices for imports	The merchant's balance	Percentage coverage
1	2	3	4	5	6= 2 - 4	7= 2/4
2010	295,957	-	2,157,725	-	-1,861,768	13.72
2011	319,165	107.84	2,492,348	115.51	-2,173,184	12.8
2012	276,100	86.51	2,507,609	100.61	-2,231,509	11.0
2013	293,919	106.45	2,450,363	97.72	-2,156,444	12.0
2014	324.543	110.41	2.538.337	103.59	-2.213.794	12,8

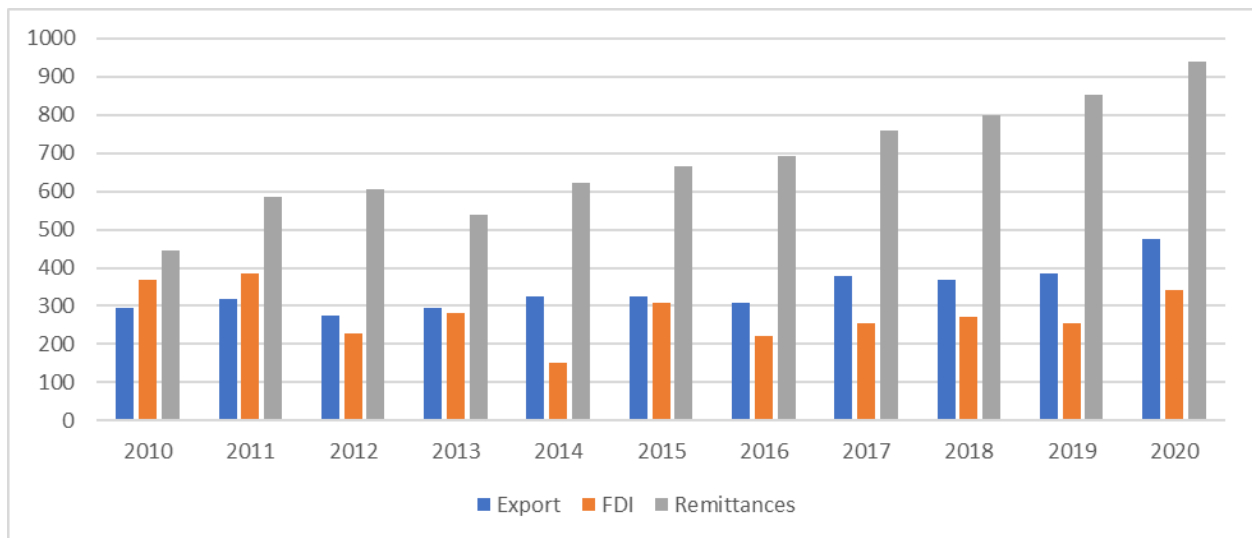
2015	325.294	100.23	2.634.693	103.79	-2.309.399	12,3
2016	309.627	95.18	2.789.491	105.87	-2.479.864	11,1
2017	378.010	122.08	3.047.018	109.23	-2.669.008	12,4
2018	367.500	97.21	3.347.007	109.84	-2.979.507	11,0
2019	383.491	104.35	3.496.942	104.47	-3.113.451	11,0
2020	474.884	123.83	3.296.635	94.27	-2.821.751	14,4

Source: Data calculated by the authors based on foreign trade data published by ASK, 2021

Remittances have been and continue to be one of the most important contributors to the economic and social development of Kosovo, where it is estimated that a quarter or more of households have a family member living abroad. Money sent from abroad (remittances) is another important source of family economies in Kosovo, accounting for approximately 8% of total family economy income (ASK, 2018).

According to statistics on the Kosovar population living in the diaspora, approximately 700,000-800,000 people born in Kosovo currently live abroad (UNDP, 2013).

Based on a comparative analysis of remittance income from 2010 to 2020, we have a continuous increase in remittances, or if we compare the income from remittances in Kosovo in 2020, remittances reached the amount of 940.4 million euros, remittances increased by about 10.38 percent when compared to income from remittances in 2019. Figure 1 depicts the trends in exports, FDI, and remittances.



Source: The authors analyzed the data for the year 2010-2020 using data from the Statistical Agency of Kosovo for exports as well as data from the Central Bank of Kosovo for FDI and remittances.

Figure 1. Exports' trends, FDI, and remittances in Kosovo from 2010 to 2020 in million euros.

Empirical Findings on Foreign Direct Investment, Remittances, And Exports in Kosovo

Regression analysis was used in this study to determine the functional relationship between the independent variables IHD (X_1), REM (X_2), and the dependent variable EXP (Y). The least squares method is used for regression analysis because it is the most appropriate method for discovering the functional relationship between X and Y , namely, $Y = f(X)$. Changes in Y are assumed to occur as a result of changes in X . Data by year for FDI and exports, as well as their analysis, can be found in Table 2, while data by year for remittances, as well as their analysis, can be found in Table 3.

Table 2. FDI and exports in Kosovo in millions of euros from 2010-2020, as well as their analysis.

Year	FDI (X)	EXP (Y)	X * Y	X ²	Yc
2010	368.5	295.957	109060.2	135792.3	353.23
2011	384.4	319.165	122687	147763.4	355.44
2012	229.1	276.1	63254.51	52486.81	333.85
2013	280.2	293.842	82334.53	78512.04	340.95
2014	151.2	324.543	49070.9	22861.44	323.06
2015	308.8	325.294	100450.8	95357.44	344.93
2016	220	309.627	68117.94	48400	332.59
2017	255.4	378.01	96543.75	65229.16	337.51
2018	272.1	367.5	99996.75	74038.41	339.83
2019	254.6	383.491	97636.81	64821.16	337.39
2020	341.7	474.884	162267.9	116758.9	349.506
	ΣX=3066	ΣY=3748.413	ΣXY=1051421	ΣX²=902021	ΣYc=3748.286

Source: The data were processed by the authors based on the data of the Statistical Agency of Kosovo for Export data as well as the data of the Central Bank of Kosovo for FDI, for the period 2010-2020.

To begin, we compute the average of the two occurrences of X (FDI) and Y (EXP):

$$\bar{y} = \frac{3748.413}{11} = 340.76$$

$$\bar{x} = \frac{3066}{11} = 278.72$$

Second, parameters a and b are replaced:

$$b = \frac{11 \cdot 1051421 - 3066 \cdot 3748.413}{11 \cdot 902021 - (3066)^2} = 0.139$$

Third, if we replace the equation of the line with the equation of the regression line, we get the equation of the regression line, which accurately represents the connection and development of the observed phenomenon:

$$a = 340.76 - 0.139 \cdot 278.72 = 302.01$$

Fourth, the other values are discovered by successively substituting the X (FDI) values into the obtained equation:

For X= 368.5 → Yc = 302.01 + 0.139 * (368.5) = 353.23
 For X= 384.4 → Yc = 302.01 + 0.139 * (384.4) = 355.44
 For X= 229.1 → Yc = 302.01 + 0.139 * (229.1) = 333.85
 For X= 280.2 → Yc = 302.01 + 0.139 * (280.2) = 340.95
 For X= 151.2 → Yc = 302.01 + 0.139 * (151.2) = 323.06
 For X= 308.8 → Yc = 302.01 + 0.139 * (308.8) = 344.93
 For X= 220 → Yc = 302.01 + 0.139 * (220) = 332.59
 For X= 3255.4 → Yc = 302.01 + 0.139 * (255.4) = 337.51
 For X= 272.1 → Yc = 302.01 + 0.139 * (272.1) = 339.83
 For X= 254.6 → Yc = 302.01 + 0.139 * (254.6) = 337.39
 For X= 341.7 → Yc = 302.01 + 0.139 * (341.7) = 349.50

Table 3. Remittances and exports in Kosovo in millions of euros from 2010-2020, as well as their analysis.

Year	REM (X)	EXP (Y)	X * Y	X ²	Yc
2010	446.7	295.957	132203.9919	199540.89	230.86
2011	584.7	319.165	186615.7755	341874.09	336.4
2012	605.1	276.1	167068.11	366146.01	182.51
2013	537.39	293.842	157907.7524	288788.0121	200.24
2014	622.3	324.543	201963.1089	387257.29	155.48
2015	665.5	325.294	216483.157	442890.25	210.17
2016	691	309.627	213952.257	477481	179.36
2017	759.2	378.01	286985.192	576384.64	191.64
2018	800.5	367.5	294183.75	640800.25	197.43
2019	851.9	383.491	326695.9829	725733.61	191.36
2020	940.4	474.884	446580.9136	884352.16	221.58
	ΣX=7504.69	ΣY=3748.413	ΣXY=2630640	ΣX²=5331248	ΣYc=2297.03

Source: The authors processed the data based on the Statistical Agency of Kosovo's export data and the Central Bank of Kosovo's remittance data for the years 2010-2020.

We now evaluate the average of the two events X (REM) and Y (EXP):

$$\bar{y} = \frac{3748.413}{11} = 340.76$$

$$\bar{x} = \frac{7504.69}{11} = 682.24$$

Second, parameters a and b are replaced:

$$b = \frac{11 \cdot 2630640 - 7504.69 \cdot 3748.413}{11 \cdot 5331248 - (7504.69)^2} = 0.347$$

As before, if we replace the equation of the line with the equation of the regression line, we get the equation of the regression line, which accurately represents the connection and development of the observed phenomenon:

$$a = 340.76 - 0.347 \cdot 682.24 = 103.02$$

Finally, the remaining values are discovered by successively substituting the obtained values of X (REM) values into the obtained equation:

$$\text{For } X= 368.5 \rightarrow Y_c = 103.02 + 0.347 \cdot (368.5) = 230.86$$

$$\text{For } X= 384.4 \rightarrow Y_c = 103.02 + 0.347 \cdot (384.4) = 236.40$$

$$\text{For } X= 229.1 \rightarrow Y_c = 103.02 + 0.347 \cdot (229.1) = 182.51$$

$$\text{For } X= 280.2 \rightarrow Y_c = 103.02 + 0.347 \cdot (280.2) = 200.24$$

$$\text{For } X= 151.2 \rightarrow Y_c = 103.02 + 0.347 \cdot (151.2) = 155.48$$

$$\text{For } X= 308.8 \rightarrow Y_c = 103.02 + 0.347 \cdot (308.8) = 210.17$$

$$\text{For } X= 220 \rightarrow Y_c = 103.02 + 0.347 \cdot (220) = 179.36$$

$$\text{For } X= 3255.4 \rightarrow Y_c = 103.02 + 0.347 \cdot (255.4) = 191.64$$

$$\text{For } X= 272.1 \rightarrow Y_c = 103.02 + 0.347 \cdot (272.1) = 197.43$$

$$\text{For } X= 254.6 \rightarrow Y_c = 103.02 + 0.347 \cdot (254.6) = 191.36$$

$$\text{For } X= 341.7 \rightarrow Y_c = 103.02 + 0.347 \cdot (341.7) = 221.58$$

Based on the above regression analysis regarding the impact of FDI and REM on EXP in Kosovo for the years 2010-2020, it appears that the value of the parameter b of FDI is 0.139, which means that for each unit increase of the value of X (in this case, FDI), the value of Y (in this case, EXP) has increased by 0.139 units, correspondingly for every million euro increase of FDI, exports have increased by 0.139 million euros. As for the effect of REM on increasing EXP in Kosovo for the year 2010-2020, it turns out that the value of the parameter b for REM is 0.347, which means that for each unit increase of the value of X (in this case, REM), the value of Y (in this case, EXP) has increased by 0.347 units, correspondingly, to each million euro increase of REM, exports have increased by 0.347 million euros.

Regression analyses related to the impact of FDI and REM on EXP in Kosovo for the years 2010-2020 can also be presented through the regression's summary data and the ANOVA test. In FDI, the value of the parameter $\beta_1 = 0.139$ which means that for each unit increase of the value of X , the value of Y has increased by 0.139 units, correspondingly for every million euro increase of FDI, exports have increased by 0.139 million euros. Validation of the hypothesis: Validation of the hypotheses was carried out through FDI data collected by the Central Bank of Kosovo and export data collected by the Statistical Agency of Kosovo. Hypothesis: Foreign direct investments in Kosovo have influenced the growth of exports.

The purpose of this analysis was to determine the magnitude of the effect of FDI on the growth of EXP. The dependent variable (in this case, EXP) is influenced by the independent variable FDI. The analysis of the empirical data was also done through the Excel program. Thus, based on the regression analysis on the linear regression function, we will see that the β_1 coefficient is positive, namely $\beta_1 = 0.139$. This means that FDI has had a positive effect on the growth of EXP in Kosovo, but the value $p = 0.617$ is significantly greater than 0.05. In these conditions, we can say that although FDI has had a positive effect on the growth of export for 0.139, it is statistically not significant that FDI has influenced the growth of EXP. Even from the ANOVA analysis, we can see that the level of significance is 0.617, so it is greater than 0.05, where we can conclude that hypothesis H1 is not accepted, namely, it is not proven that FDI had an impact on the growth of EXP in Kosovo.

Based on the regression analysis on the linear regression function, we will see in H2 that the coefficient β_2 is positive, namely $\beta_2 = 0.347$. From this it means that REM have had a positive effect on the growth of exports by Kosovo, as well as that the value of $p = 0.000$, which is obviously less than 0.05. Under these conditions, we can say that REM has had a positive effect on the increase in exports, that is, exports have increased by 0.347 million euros for every million euro increase of exports, and statistically this value is significant, so that REM has influenced the increase in Kosovo's exports. This can also be seen from the ANOVA: we can see that the level of significance for H2 is 0.000, so it is less than 0.05 and in this case we can conclude that the hypothesis H2 is accepted, i.e., it can be proven that REM had a positive impact on the increase of exports by Kosovo. We can also present this data through Tables 4, 5 and 6.

Table 4. Regression analyses for FDI, REM, and EXP in Kosovo from 2010 to 2020.

Multiple R	0.169665583	0.888267926
R Square	0.02878641	0.789019908
Adjusted R Square	-0.079126211	0.765577676
Standard Error	58.98858096	27.49358115
Observations	11	11

Source: The authors analyzed data from the Statistical Agency of Kosovo for export data as well as data from the Central Bank of Kosovo for FDI and remittances for the years 2010-2020.

Table 5 shows the values of the coefficients and other indicators related to FDI, REM, and EXP:

Table 5. Coefficient values and other indicators.

Assessment	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept (β_0)	301.777952	77.55203531	3.891296351	0.003667705	126.3430598	477.2128441
FDI (β_1)	0.139874601	0.270820308	0.516484906	0.617965813	-0.472763499	0.752512702
Intercept (β_0)	103.9798464	41.64737897	2.496672035	0.034047235	9.76692975	198.192763
REM (β_2)	0.347067592	0.05982319	5.801556108	0.000258969	0.211738135	0.48239705

Source: the authors analyzed data from the Statistical Agency of Kosovo for export data as well as data from the Central Bank of Kosovo for FDI and remittances for the years 2010-2020.

We present the variance analysis and related indicators in Table 6 below:

Table 6. ANOVA

Source	df	SS	MS	F	Significance F
Regression	1	928.2205217	928.2205217	0.266756658	0.617965813

Residual	9	31316.87415	3479.652684		
Total	10	32245.09467			
Regression	1	25442.02164	25442.02164	33.65805327	0.000258969
Residual	9	6803.073038	755.8970042		
Total	10	32245.09467			

Source: the authors analyzed data from the Statistical Agency of Kosovo for export data as well as data from the Central Bank of Kosovo for FDI and remittances for the years 2010-2020.

The creation of political and macroeconomic stability has an important role in improving the performance of FDI, remittances and exports in Kosovo. FDI, export and investment policy management are still at an unsatisfactory level with the aim of improving the performance of foreign investment and improving the trade balance. In 2020, FDI was 341.7 million euros, while exports amounted to 474.884 million euros. If we compare this with the previous year, 2019, we have an improvement in FDI trends and an improvement in the export trend, but still this trend is not at a satisfactory level.

As for remittance trends, there is a slight improvement from 2010 to 2020, but the highest value of remittances reaches 940.4 million euros in 2020. The increase of management capacities in the creation of incentive policies for the improvement of the investment climate as well as the promotion of export is quite weak. The improvement of FDI is also related to the support of fiscal policies, which means that these policies should have a higher performance. From 2010 to 2020, it turns out that more than three billion euros have been invested in Kosovo, and in these investments, Germany is leading in investments with about 700 million euros, followed by Switzerland with about 650 million euros. The regression analyses between the export dependent variable and the independent FDI variables show that a change in the value of the variable X has an impact on the variable Y, but based on the ANOVA result this cannot be verified. Verification of the Hypothesis that FDI in Kosovo has influenced the growth of exports based on the regression analysis, it turns out that the coefficient β_1 is positive, namely $\beta_1 = 0.139$, which means that FDI has had a positive effect on the growth of export in Kosovo. However, in the ANOVA analysis, the level of significance is 0.617, that is, it is greater than 0.05, which means that the hypothesis H1 is not accepted or proven that FDI had an impact on the increase in export in Kosovo. Regarding the verification of the Hypothesis that remittances in Kosovo have had an effect on the increase in export, based on the regression analysis, it appears that the coefficient β_2 is positive, namely $\beta_2 = 0.347$, which means that remittances have had a positive effect on the increase in export in Kosovo. The level of significance is 0.000, so it is less than the 0.05 value of p, which means that the hypothesis is accepted or proven that remittances have had an effect on the growth of exports in Kosovo. This can also be seen in the ANOVA analysis, where we can see that the level of significance in H2 is 0.000, which is less than 0.05, and in this case we can conclude that the hypothesis H2 is accepted, or that REM had a positive impact on the increase in export to Kosovo. Tables 4, 5, and 6 can also be used to present these data.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the empirical analysis related to [H1] Foreign direct investments have influenced export growth, the significance level of this hypothesis appears to be 0.617, or greater than 0.05. Based on this significance value, we conclude that it cannot be accepted that foreign direct investments in Kosovo have had an impact on export growth, even though linear regression analyses show that foreign direct investments have.

As for [H2] Remittances in Kosovo have influenced export growth, this has been verified based on empirical analysis, where the analysis results in a level of significance of 0.000 or less than 0.05; because of this value the result of the statistical significance confirms that remittances have had an impact on export growth in Kosovo, and linear regression analyses show that remittances have had a positive impact on export growth.

Kosovo should do more to attract FDI and increase exports, as the results show that these indicators are declining. We can say that creating and maintaining economic and political stability is one of the most important factors in attracting FDI and increasing exports, and there is still room for increasing remittances from the diaspora. Improving the business environment is critical for FDI absorption and the growth of small and medium-sized businesses.

Advancement in terms of a favorable tax system, natural resources, quick and easy business registration, transparent laws on foreign investments, and other benefits would make Kosovo a more appealing and favorable environment for foreign investors (World Bank Group, 2019). Maintaining transparency at the highest levels through e-government, publication and review of administrative decisions, and free and independent media is important. Stable macroeconomic management policies are an important component of the policy framework for encouraging investment and export growth, lowering the risk of doing business by ensuring a generally predictable business climate, as well as in investment decision-making and the establishment of economic free zones.

Lack of transparency, the growth of the informal economy, and corruption, have all influenced and continue to influence the decline in FDI in Kosovo. Export advancement has been and continues to be one of the primary goals of governments and societies at the global level, because development and growth are typically translated into improvements in the labor market, per capita income, and so on.

Based on the findings, it is clear that Kosovo's economy is quite small at the regional level, and its long-term development will be heavily dependent on the development of its potential to increase exports. Kosovo must capitalize on its labor force and access to regional and European markets, which offer enormous potential for economic growth and increased exports. Since the ability of governments to support an environment conducive to efficient and free trade services and logistics is increasingly influencing success in export markets, Kosovo must improve its export policy management to improve its trade balance, which is largely negative.

The Ministry of Trade and Industry, along with other relevant actors dealing with investment policies, is recommended to develop a package of incentives for FDI, particularly in the field of production, in order to ensure local production and regulate the trade balance, where Kosovo continues to face a pronounced negative trade imbalance. Based on linear regression analysis, the relationship between the independent variable FDI and the dependent Variable Export shows that we have a weak regression of the impact of FDI on the growth of Export, while the impact of remittances on the growth of Export is acceptable.

It is critical to create a favorable environment for business development, which can be accomplished through the rule of law, the fight against corruption and organized crime, informality, the rationalization of tax procedures, and other means. Remittances from emigration to Kosovo have had a significant impact on economic development, particularly on the improvement of family households' standard of living. Given the fact that Kosovo has a high level of unemployment, migration relieves pressure on the labor market, where the balance between labor-market income and outflows is quite high.

Improving the competitiveness of Kosovo's exports necessitates additional infrastructure investments, legislative changes, and the strengthening of institutional capacity. Investing in

transportation infrastructure to meet rising demand, as well as improving the efficiency of trade-related institutional infrastructure is necessary.

Furthermore, we must also pay close attention to the development of product quality infrastructure in accordance with the European Union and global standards. More stable policies must be developed at the national level in order for the workforce in Kosovo to stay and contribute to their home nation. There is a need for ongoing research in Kosovo to assess the effects of FDI and remittances on export growth.

The expansion of research on the measurement of the effects of FDI, export remittances, on economic growth, and the sectoral orientation of investments is critical for policymakers, and a greater opportunity for the expansion of empirical analyses for foreign investments, remittances, and other relevant indicators will be created.

LIMITATIONS AND FUTURE STUDY

The realization of this study was also met with limitations, one of which is that there was insufficient data, which has influenced the fact that in this study we focus on analyzing the variables of FDI, remittances, and exports. Another limitation is that not all FDI is destined for export: for example, investments in the banking and transportation sectors in host countries are not destined for export. Because not all remittances are intended for export, a significant portion of remittances are intended for household consumption. Another limitation is the lack of time and the delay in publishing data on FDI, remittances, and exports. Due to time constraints and data availability, some critical variables such as imports, exchange rates, the orientation of the remittances, the channels through which the remittances are sent, among other things, were excluded from this study's analysis.

We hope that future researchers will take these variables into account in their research.

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INFLUENCE OF SOCIAL AND PERSONAL NORMS ON INDIVIDUALS' PARTICIPATION IN THE SHARING ECONOMY OF A CONSERVATIVE SOCIO-MARKET

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ABSTRACT

Sharing economy applications are becoming more popular with the advancements being made in communication tools and means. This study aims to discover the perceptions of people living in a conservative socio-market of ridesharing. Ridesharing is one of the common applications of a sharing economy. In addition, the study used constructs from social exchange theory and the theory of reasoned action. This study employed a questionnaire designed and deployed to collect data from a convenient sample using social media channels. The empirical results show that, except for attitudes and conventions, the constructs had results other than the ones predicted by the theories. The study shows that four constructs, namely conventions, morals, mores and rules, had positive impacts on the intention to work for rideshare companies. Laws, however, were not found to have an impact on intention. The study also found that norms can be viewed as a second-order variable where rules and laws create an impact on conventions, morals and mores. This finding could help practitioners and researchers to decide if there is a need to develop a different version of these theories. Additionally, it could mean that there is a need to further explore the applicability of the norm construct in various contexts.

Keywords: Sharing economy, conservative socio-market, norms, attitudes, trust, relative advantage

INTRODUCTION

Sharing is a social act, one that involves giving access to resources such as information or assets in different societies. Advancements in technology such as Web 2.0, social media and mobile apps facilitate individuals' contributions to a new economic concept called the sharing economy, which involves resources, for example, rooms, cars and tools, being made available to users for a fee. Several studies have looked at why people participate in a sharing economy. However, there has been little research done on the social, religious, and personal norms that are involved. This study investigates the effect of norms on individuals' participation in a sharing economy in a conservative socio-market. Social exchange theory and the theory of reasoned action are used as theoretical bases.

Participating in a sharing economy is a topic frequently discussed within the information systems field. Several factors have been identified explaining why people do and do not participate. Norms, as a factor, have received little attention in the research. In an emerging economy, such as Saudi Arabia, the

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concept of the sharing economy is still evolving. This creates a golden opportunity to investigate the phenomenon of the effectiveness of certain factors, such as norms, on individuals' intentions to participate in a sharing economy. The study uses rideshare companies such as Uber and Careem platforms as examples. Such service apps require members (providers) to share their cars with clients (users). Both parties might have some privacy and security concerns, among other issues. An under-researched factor are those social, religious and personal norms that affect participants (both providers and users) who use these apps. For example, female users might have some religious or social beliefs which prevent them from using these apps.

Research in the sharing economy involves several research questions. The main question for this research is: 'What are the factors affecting individuals' decisions in a conservative socio-market to participate in a sharing economy?' A further question is: 'To what extent do norms affect participation in a sharing economy?'

THEORETICAL BACKGROUND

Exchanging resources to gain economic benefits has been the essence of trade since the dawn of time. Trades occur in markets in the form of the buying and selling goods or services. The traditional economy, which stresses owning resources (Botsman & Rogers, 2010), has been extended by the concept of accessing shared resources without the transfer of ownership (Mittendorf, 2016). However, the advancement in technology allows emergent online platforms to reshape the nature of trades. Online apps and social platforms introduced the possibility of creating a sharing economy in a business-to-customer model (Heinrichs, 2013) or a permanent transfer of ownership (Dillahunt & Malone, 2015) by creating a virtual market which is of benefit to both providers and users.

This study is concerned with the theoretical background behind this phenomenon and the participation of individuals in a socio-market environment. A socio-market is a trade market in which the perceived acceptance of the society plays a major role in trades. Markets are governed by legislation and community traits that determine how liberal or conservative they are.

The sharing economy in this study focuses on a specific example known as rideshare. In ridesharing, an individual who owns a vehicle, gives someone else a ride for an agreed upon amount of money. Businesses such as Uber, Lyft, Careem and other providers offer phone apps which serve as a market to bring service providers and users together.

In summary, this paper studies the behavioural dimension of the sharing economy, that is to say it describes what exists (e.g., ridesharing) and explains people's perspectives as they relate to ridesharing within the context of information systems (Lee, 2014). Here, we mainly focus on the impact of individuals' perceptions on participating in sharing economy in a conservative socio-market.

Sharing Economy

A sharing economy is 'the act of consuming an economic product or service by one or more people in a joint activity with others' (Felson, 1978). It allows users to access under-utilised resources such as houses, vehicles and tools offered by others through technological platforms. For example, platforms such as Airbnb, Turo and Uber are used to share real states, cars and rides, respectively. Participation in a sharing economy contributes to sustainable markets, where social and economic behaviours are optimised for better environmental conditions (Luchs *et al.*, 2011). Prothero *et al.* (2011) and Sacks (2011) also agree that a sharing economy can positively affect ecological sustainability.

The main characteristics of a sharing economy are online collaboration, social commerce, the notion of sharing online, and consumer ideology. Online collaboration allows the user to generate content

and peer-to-peer transactions. Social commerce allows transactions to occur using social media platforms. The notion of sharing online that has been formulated by social media has changed the way people think about what they have and what they know. Consumer ideology has been shaped by technologies that require large numbers of people. Technology is used in actions that require large numbers of people by creating new forms of markets wherein parties of trades can join and exchange benefits.

Advancements in technology have transformed the traditional economy, which is based on the ownership of resources, into the new concept of the sharing economy, thereby allowing the creation of different types of emerging content and transactions. The most common types are open-source software, online collaboration, file sharing, and peer-to-peer financing, which have all emerged because of the availability of technological support. Thus, the sharing economy is an emerging research stream in the information systems discipline. As a result, it can be studied as a technological phenomenon. Researchers have various names for this phenomenon, such as a sharing economy (Kim *et al.*, 2015), collaborative consumption (Hamari *et al.*, 2016), and sharing services (Andersson *et al.*, 2013). Collaborative consumption is the study of a sharing economy from technological advancement approaches. But it still uses some social dynamics. Other forms of sharing that do not involve websites or apps are beyond the scope of this research.

Theories

A sharing economy (Spindeldreher, Fröhlich & Schlagwein, 2018), a collaborative economy (Botsman & Rogers 2010), and sharing services (Andersson *et al.*, 2013) are terms used synonymously in the IS literature to describe the transactions underlying the resource-sharing among individuals. As a sharing economy is not sustainable, the need to understand the motivation for interactions between service providers and users has arisen (Mont *et al.*, 2020). In general, sharing is considered to be a social activity due to its socially interactive nature (Belk, 2014). This explains why studies on this topic involve social and economic factors. Theories that have been used to explain why people participate in a sharing economy include the theory of reasoned action (TRA), planned behaviour theory (PBT), social exchange theory (SET), and trust theory. However, this study employs the TRA and PBT as theoretical lenses and thus requires further explanation.

TRA was introduced by Martin Fishbein and Icek Ajzen in 1967. It derives from the psychology of human action literature. In a nutshell, the theory states that participation in any activity, such as using rideshare applications, is influenced by two main factors, specifically attitudes toward the activity and subjective norms. Later, Icek Ajzen reformed the theory into PBT in 1991. This theory added perceived behavioural control as another factor to explain actions taken by people.

Factors

Factors that are used to explain participation in sharing economy activities include attitudes, relative advantage, trust, and norms. Attitudes toward a certain behaviour can determine the likelihood of engaging in that behaviour (Ajzen, 1991). Researchers have examined users' attitudes to investigate their influence on their intentions to participate in related activities (Titan, 2009; Sia, 2009; Basheer, 2010; Stacy, 2020). Relative advantage is the perception that using a digital product or service can make the user better off than before using that product or service. Digital innovations aim to make the user perceive an advantage from using and adopting the product and/or service (Moore *et al.*, 1991). However, they did not find the relative advantage to be a factor in adopting digital innovation. One of the important factors that have been studied by researchers is a lack of trust. Wang (2020) studied what makes hosts trust and continue to use the Airbnb residence-sharing service. They found that a platform is trustworthy when it has a reputable history and quality standards concerning its technical, social, economic and privacy aspects. Norms are defined as subjective beliefs. It is 'an individual's belief that a particular individual (or groups) believe that one needs to perform a given behavior' (Ajzen & Fishbein, 1980). Most researchers

evaluate norms as a single measurement. However, norms can be viewed as a five-dimensional construct (Bosch, 2011). The aim is to study the effect of norms, according to those five dimensions, on individuals' participation in a conservative socio-market.

Norms

In the social sciences, norms are an important concept referring to the practices or beliefs that are enforced by the surrounding society (Lapinski *et al.*, 2005). Norms are considered to have a significant impact on social and economic opportunities (Zamberi, 2011). Thus, it is important to study the impact of norms on different social activities.

The governance of the sharing economy varies with geography and location (Mont *et al.*, 2020). Therefore, societal acceptance can influence consumer behaviour. This section sets out a theoretical conceptual framework that can better explain the conservative socio-market. It discusses the constructs that influence a sharing economy in a conservative socio-market (norms and intentions to participate) and their interactions. Further, one must “understand the roles and interactions between actors, institutions, and infrastructures that shape the evolution, sustainability, and upscaling of business models in the sharing economy” (Mont *et al.*, 2020, p. 7).

Societal acceptance is not the only factor that encourages the sustainability of a sharing economy, as Mont *et al.* (2020) also state that governance is a major factor. Therefore, the theoretical conceptual framework needs to be able to measure the impact of laws and regulations on the continuity of the sharing economy. In addition, this study goes a step further and investigates the impact of laws and rules on the sustainability of a sharing economy in a conservative socio-market. Finally, for the sharing economy to become sustainable in a conservative socio-market, all stakeholders must perceive benefits from its sustainability. It is important to understand the motivational interactions between resource owners and resource users, since those interactions are the essence of the sharing economy's sustainability (Mont *et al.*, 2020). This study takes into account theoretical conceptual constructs and investigates them through the lens of a sharing economy in a conservative socio-market.

Bosch (2011) subclassified norms into conventions (cultural norms), morals (religious norms), mores (social norms), rules (organisational norms) and laws (governmental norms). There is little in the literature addressing the impact of norms on participation in a sharing economy. This is due to different societies having different impacts and norms being driven by societal influences. In addition, there is confusion in some conservative societies between religious roles and social traditions. Thus, norms in conservative societies are believed to have an impact on the socioeconomic opportunities of its constituent members. According to Song (2019), the conservative cultural norm compels individuals to behave cautiously and avoid social participation in mixed-gender interactions. The researcher found that fear of judgement is the main factor arising within individuals' cultural norms in conservative societies. The findings indicate that religion is used as a justification for their norms. Song (2019) notes that mixed-gender interactions can bring shame to families. Thus, they have to decide if they want to sacrifice the opportunities that come from their interaction within a mixed-gender setting. Yanagizawa-Drott (2019) and Bursztyn *et al.* (2020) found that the essence of conservative norms lies in pluralistic ignorance. Pluralistic ignorance occurs when the majority of a society secretly rejects a social norm while pretending to support it in public.

Intention to Participate

The intention to participate in sharing economy is a strong motivational factor. Motivation to participate in a sharing economy includes environmental motivation instrumental motivation, normative motivation, and social entertainment motivation (Hamari, Sjöklint & Ukkonen, 2016). People will participate if the expected benefits exceed the perceived risks (Kim *et al.*, 2015). In other words, people

will involve themselves in social or economic transactions if the benefits outweigh the risks. Both PBT and TRA use intention to measure anticipated behaviour. Norms are expected to influence the intention of individuals to participate.

RESEARCH MODEL AND HYPOTHESES

Based on the literature, I propose the research model in Figure 1 as a basis for studying the impact of the five aspects of the norms on the intentions of residents in a conservative socio-market to engage with and apply to work for rideshare companies.

The TRA and PBT have been used as the theoretical framework. While both theories introduced several factors, as discussed earlier, the primary issue under investigation in this study is the effect of norms on the intention to participate in sharing economy. In several pieces of research, norms have been measured as being one-dimensional. Examples of items used in previous studies are ‘My partner thinks I should reduce the fever with medication’ (Walsh, Edwards & Fraser: 2009); ‘What do the following people think about your smoking’ (Markham, Wolfgang, Aveyard & Hywel, 2004); and ‘The client company’s senior management is willing to share workload and information with my company’ (Susarla, Barua and Whinston: 2010). However, we adopted Bosch’s (2011) view of norms and classified them into five distinct constructs. Thus, the following hypotheses are proposed:

H1: Rules have a positive effect on convention.

H2: Rules have a positive effect on morals.

H3: Rules have a positive effect on mores.

H4: Laws have a positive effect on convention.

H5: Laws have a positive effect on morals.

H6: Laws have a positive effect on mores.

H7: Convention has a positive effect on the intention to work for rideshare companies.

H8: Morals have a positive effect on the intention to work for rideshare companies.

H9: Mores have a positive effect on the intention to work for rideshare companies.

H10: Rules have a positive effect on the intention to work for rideshare companies.

H11: Laws have a positive effect on the intention to work for rideshare companies.

H12: The intention to work for rideshare companies has a positive effect on actually working for rideshare companies.

Items for each variable were derived from the literature or created and tested before survey distribution. Examples of items used in the survey are “Working for a rideshare company is legal”, “My culture allows me to work for a rideshare company”, and “My religion allows me to work for a rideshare company” for rules, convention, and morals variables respectively. A complete list of items is delineated within the results section.

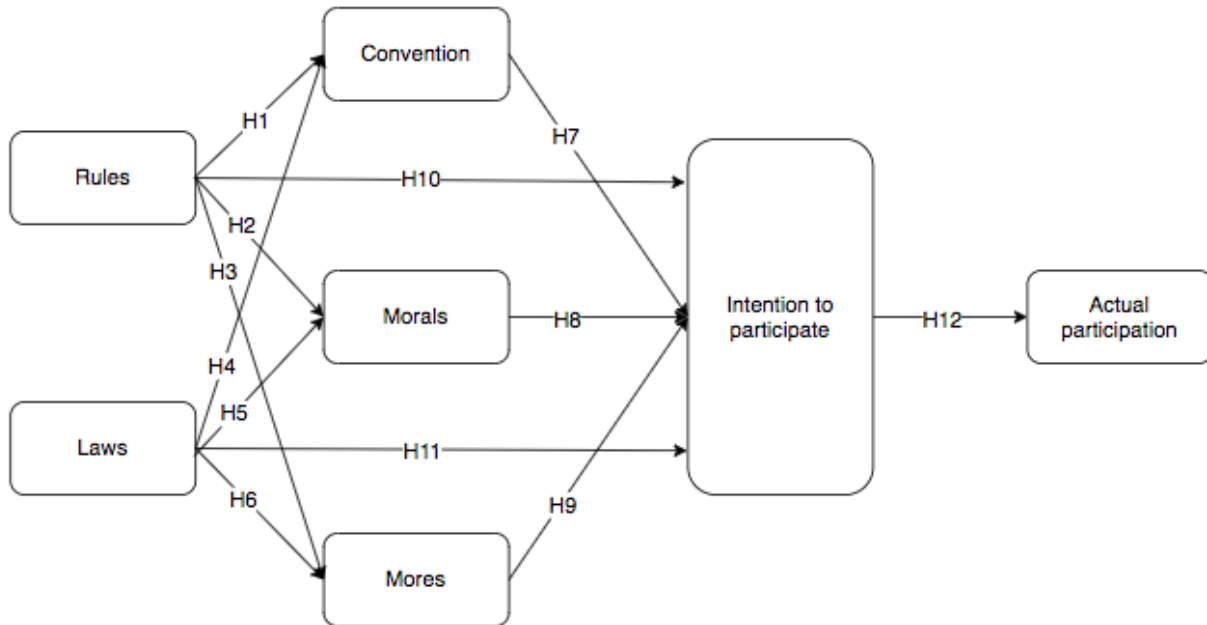


Figure1: Proposed Research Model

RESEARCH METHOD

Data were collected using closed-ended surveys via a Twitter platform. A selective convenience sampling technique was used to gather the data for this research. Since the Saudi socio-market is mainly conservative, the main target population of this paper was sharing economy users in Saudi Arabia.

No personal data that could lead to identifying the participants were collected. The researcher took the necessary precautions to keep the data safe and secure. The data were used only for research purposes and were not shared with any third party. Participants were assured and informed about these regulations, while participation was voluntary. All aspects of this research adhered to the regulations and laws as required. Academic integrity was maintained across all stages.

The data were prepared via IBM SPSS software for descriptive analysis. All items were described according to a 7-point Likert scale. In the structural equation modelling, SmartPLS v3.3 was used to evaluate the measurement model, the structural model and the path analysis. A measurement model gives results on construct reliability, construct convergent validity, indicator validity and convergent indicator validity (Fornell & Larcker, 1981). Structural models provide results on predictive relevance, the coefficient of determination and co-linearity.

Default values and parameters in SmartPLS were used. A total of 1,000 iterations were used for the path-weighting analysis, an omission distance value of 7 for the blindfolding, and 1,000 subsamples for the bootstrapping. Thresholds for the indexes and factor loading were based on the recommended values from the literature, namely Bentler (2006), Gunzler and Morris (2015), Henry and Stone (1994), Pham, Lai and Vuong (2019) and Hair *et al.* (2014). The next section elaborates on the results.

RESULTS

The total number of users exposed to the online survey was 4,672. We received 317 responses, of which 293 were complete and could be included within the analysis (an approximate 6% response rate). Over 96% of the respondents described themselves as citizens and about 44% were female. The sample varied across all categories, including age, education level, number of household members, income, occupation and regions within Saudi Arabia.

Six constructs were used to test for the measurement model's reliability, construct validity and indicator validity. The constructs are convention (Conv), morals (Mora), mores (More), rules (Rule), laws (Laws), and intention (Int). Table 1 shows the results for the model's reliability. The indicator loadings for the items used to measure the constructs were above the threshold of 0.7, except for LAWS3 and RULE1. These items were dropped from the analysis due to these low values. Constructs with two items can still be valid for latent variables (Worthington & Whittaker, 2006). Table 1 shows the items and their related loading values.

Table 1: Factor loading indices.

Items	Factor Loading	P-Value
Convention	(Likert 7-Point)	
Conv1: My culture allows me to work for a rideshare company	0.860	***
Conv2: Working for a rideshare company does not contradict my local culture	0.822	***
Conv3: It is common for people like me to work for a rideshare company	0.783	***
Morals	(Likert 7-Point)	
Mora1: My religion allows me to work for a rideshare company	0.746	***
Mora2: It is ethically acceptable for me to work for a rideshare company	0.772	***
Mora3: Working for a rideshare company negatively impacts my reputation	0.763	***
Mores	(Likert 7-Point)	
More1: My family wants me to work for a rideshare company	0.775	***
More2: My colleagues think that working for a rideshare company is a good decision	0.911	***
More3: My friends think that working for a rideshare company is a good idea	0.922	***
Rules	(Likert 7-Points)	
Rule1: Working for a rideshare company is legal	0.631	
Rule2: There might be consequences if my employer knows about me working outside	0.875	***
Rule3: Working for a rideshare company may cause problems with my employer	0.875	***
Laws	(Likert 7-Points)	
Laws1: The current data and security legislation allows me to work for a rideshare company	0.823	***
Laws2: Other legislation allows me to work for a rideshare company	0.831	***
Laws3: Government regulations do not allow me to work for a rideshare company	0.618	

After omitting the LAWS3 and RULE1 items, all the remaining items have loading values above 0.70 on their respective constructs and below 0.7 across the other variables. Table 2 shows the loading values (in bold) and the cross-loading values for all items.

Table 2: Items discriminant validity indices

	Convention	Intention	Laws	Morals	Mores	Rules
CONV1	0.875	0.300	0.395	0.235	0.506	0.292
CONV2	0.825	0.291	0.283	0.266	0.449	0.267
CONV3	0.767	0.405	0.266	0.207	0.442	0.294
INT1	0.379	0.939	0.234	0.284	0.412	0.321
INT2	0.400	0.944	0.223	0.348	0.417	0.372
INT3	0.372	0.946	0.291	0.326	0.429	0.374
LAWS1	0.301	0.248	0.906	0.400	0.373	0.208
LAWS2	0.400	0.241	0.941	0.512	0.474	0.212
MORA1	0.218	0.125	0.419	0.737	0.302	0.077
MORA2	0.220	0.114	0.411	0.765	0.297	0.163
MORA3	0.215	0.415	0.341	0.773	0.258	0.531
MORE1	0.451	0.329	0.395	0.303	0.777	0.284
MORE2	0.467	0.440	0.404	0.356	0.908	0.379
MORE3	0.565	0.386	0.415	0.300	0.923	0.340
RULE2	0.331	0.382	0.203	0.390	0.379	0.953
RULE3	0.327	0.334	0.229	0.394	0.354	0.947

All of the constructs, except for Morals, have values above 0.70 on Cronbach’s alpha indicator. All constructs have values above 0.70 for composite reliability. Furthermore, all constructs have values above 0.50 for the average variance extracted, indicating a high construct validity and reliability for all the measured constructs. Table 3 shows the indices for the constructs’ validity and reliability. Table 4 shows the indices for the construct discriminant validity for all measured constructs.

Table 3: Construct validity and reliability indices

Constructs	Cronbach’s alpha	Composite Reliability	AVE
Convention	0.761	0.863	0.678
Intention	0.938	0.96	0.889
Laws	0.831	0.921	0.854
Morals	0.669	0.802	0.575
Mores	0.839	0.904	0.760
Rules	0.892	0.949	0.902

Table 4: Constructs' discriminant validity indices

	Convention	Intention	Laws	Morals	Mores	Rules
Convention	0.823					
Intention	0.407	0.943				
Laws	0.385	0.264	0.924			
Morals	0.285	0.339	0.500	0.758		
Mores	0.567	0.445	0.463	0.368	0.872	
Rules	0.347	0.377	0.227	0.413	0.386	0.95

The values for NFI and SRMR were outside the acceptable thresholds of above 0.9 and below 0.08 respectively (Table 5). In summary, the measurement model evaluation using PLS-SEM indicates a satisfactory measurement model. The next section provides the structural model indices.

Table 5: Model fit indices

Index Name	Value	Threshold
NFI	0.713	> 0.9
SRMR	0.105	<0.08

In the structural model analysis, the predictive relevance (O2), the coefficients of determination (R2), collinearity (variance inflation factor VIF), and the path coefficient analysis for direct and indirect effects were evaluated. Blindfolding calculation indicates a low relevance for all the endogenous constructs (O2), namely Convention, Morals, Mores, Intention, and Actual. The R2 indices indicate that both rules and laws were able to explain 21.3% of the variance in Convention, 34% of the variance in Morals, and 22.2% of the variance in Mores. The norms variables explain 27.2% of the variance in Intention. Intention explains 10% of the variance in Actual. The values for VIF indicate lower possibilities for collinearity. Table 6 shows the indices for O2, R2 and VIF for the endogenous constructs.

Table 6: Relevance, coefficient of determination and co-linearity indices

Variables	Q2	R2	VIF
Convention	0.144	0.213	1.271
Morals	0.170	0.340	1.515
Mores	0.222	0.293	1.414
Intention	0.239	0.272	1.374
Actual	0.099	0.100	1.111

The path coefficients were also analysed using the bootstrapping method. All paths within the 12 hypotheses were found to be significant at 95% and 99% confidence levels, except for the path from Laws to Intention which is significant at a 90% confidence level. Table 7 shows the path coefficients, the t-values and the p-values for all direct effects in the model.

Table 7: Direct-effect path coefficients, t-values and p-values

Path	Coefficient	T-Values	p-values
Convention -> Intention	0.185	2.777	0.006
Intention -> ACT	0.321	6.070	0.000
Laws -> Convention	0.322	5.323	0.000
Laws -> Intention	-0.025	0.337	0.736
Laws -> Morals	0.428	7.046	0.000
Laws -> Mores	0.396	5.825	0.000
Morals -> Intention	0.143	1.994	0.046
Mores -> Intention	0.233	3.004	0.003
Rules -> Convention	0.273	4.858	0.000
Rules -> Intention	0.170	2.530	0.011
Rules -> Morals	0.316	5.004	0.000
Rules -> Mores	0.296	4.908	0.000

The total effects of the independent and endogenous variables were found to be significant at 95% and 99% confidence levels, except for the path from Morals to Actual, which is slightly outside the 95% confidence level but within a 90% confidence level. Table 8 shows the path coefficients, the t-values, and the p-values for the total effects for all variables in the model.

Table 8: Total effect path coefficients, t-values and p-values

Path	Coefficient	T-Value	P-Values
Convention -> ACT	0.059	2.514	0.012
Laws -> ACT	0.060	2.527	0.012
Morals -> ACT	0.046	1.940	0.052
Mores -> ACT	0.075	2.596	0.009
Rules -> ACT	0.107	4.292	0.000

DISCUSSION

Resource exchange has been the essence of economies since people started trading. The concept of trade has taken many forms and has continuously changed since the dawn of humanity. In the information era, the term “sharing economy” has been coined. The term commonly refers to the use of a phone app to order a service from other users for a price they agree upon. This study focuses on the subcategory of shared rides. Shared rides are services where a user is looking for someone to give them a ride. The person can pick from a list of participating drivers and agree on a rate or price. It is common practice for both the users and the drivers to register with the app provider.

The purpose of this study is to address two main research questions: 1- What are the factors affecting Saudi citizens’ participation in a sharing economy? 2- To what extent do norms affect

participation in a sharing economy? In answering the first research question, the study conducted a literature review to find the relevant factors to determine why someone would want to work for ridesharing applications. The TRA and PBT were applied to understand the behavioural dynamics of sharing rides. Factors such as attitudes (Ajzen, 1991), relative advantage (Moore *et al.*, 1991), and trust (Kim *et al.*, 2015) are significant indicators as to why individuals participate in sharing economy. Although these variables are good indicators for understanding why people participate in sharing economy, subjective norms have emerged as an interesting factor.

Norms are beliefs that are enforced by the surrounding environment. Instead of evaluating norms as one factor, Bosch (2011) classified them into five constructs (convention, morals, mores, rules and laws). In order to answer the second question, a theoretical model was developed and validated via questionnaire data collection from a random sample of rideshare app users in Saudi Arabia.

Overall, the results show that the aspects of the norms have positive significant effects on the intentions of users to work for rideshare applications. The perceived norms of rules have a positive impact on convention (0.273, $P < 0.001$), morals (0.316, $P < 0.001$), mores (0.296, $P < 0.001$), and intention (0.170, $P < 0.05$). Thus, hypotheses H1, H2, H3, and H10 are supported. Similarly, laws have a positive impact on convention (0.322, $P < 0.001$), morals (0.428, $P < 0.001$), and mores (0.396, $P < 0.001$). However, laws have a negative insignificant impact on the intention (-0.025, $P > 0.05$). Thus, only hypotheses H4, H5, and H6 are supported. Convention (0.185, $P < 0.05$), morals (0.143, $P < 0.05$), and mores (0.233, $P < 0.05$), each having a positive impact on intention. Thus, hypotheses H7, H8, and H9 are supported. Finally, there is a significant positive relationship arising between the intention to work for rideshare companies and the actual status of participation (0.321, $P < 0.001$). Thus, supporting hypothesis H12.

Moreover, the results from the total effects show positive significant impacts of rules (0.107, $P < 0.001$), convention (0.059, $P < 0.05$), and mores (0.075, $P < 0.05$) on actual participation. Surprisingly, the total impact of laws on actual participation became a significant positive impact (0.060, $P < 0.05$). Also, morals (0.046, $P > 0.05$) are found to have a positive, though insignificant impact as a total effect on the actual use.

Thus, norms with five distinct aspects can be used to determine the intentions and actual participation of individuals in sharing economy applications. They can also explain the variations in intention and actual participation in the sharing economy.

IMPLICATIONS

The implications of this study are two-fold, in terms of theoretical and managerial aspects. In the theoretical implication, this study shows significant empirical evidence that norms have a positive impact on behavioural intention to participate in sharing economy. While the extant literature has measured norms as a single variable, this study was able to provide deeper insight by explaining different five dimensions within norms. Thus, variations in behavioural intention to participate in activities can be explained by several subcategories of what is used to be conceived as a single variable.

The managerial implication of this study can help decision-makers understand the behaviours of individuals when it comes to participating in sharing economy activities. For instance, in socio-markets where job opportunities are limited, individuals frequently seek other jobs to diversify their income. Authorities might have initiatives to encourage participation in such activities. However, resistance may occur due to the lack of understanding of the effect of the five dimensions of norms.

LIMITATIONS

Due to the nature of shared economy applications, subjects are difficult to reach on a large scale. Thus, this study has the limitation of a convenient sampling method to recruit participants. Also, while validating the dimensions of norms using rideshare applications as an example it would be interesting to investigate the validity across other domains where norms are involved.

FUTURE WORK

This study extends the concept of norms into the five dimensions indicated by Bosch (2011). Previous findings which could not find a significant impact of norms on behavioural intention can be explained by the variations within these dimensions. Future studies of behavioural intentions may find it useful to include these five dimensions, instead of norms by themselves, to capture more detailed impacts.

CONCLUSION

The sharing economy is becoming more widespread across the world. Applications implementing this type of economy are becoming more prevalent among people who want to benefit from its casual business characteristics. The extant literature has discussed several factors to indicate why individuals participate in the sharing economy. This study intended to elucidate the role of norms in the consumption of the sharing economy in a conservative socio-market. This study unveiled the nature of norms as being a construct with several dimensions. It highlights the importance of understanding the impact of factors, namely convention, morals, mores, laws, and rules, on the intention to use or work for trading activities that have sharing aspects, as opposed to ownership transfer. In specific, the findings extend the knowledge we know about why people engage in social acts within the realm of the shared economy such as ridesharing using social platforms.

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THE EFFECTS OF MARKETING COMMUNICATION STRATEGIES ON THE PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES (SMES) IN POLOKWANE

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ABSTRACT

Marketing communication is seen as a vital activity for the survival and success of SMEs. The aim of the study was to investigate the impact of marketing communication on the performance of small and medium enterprises (SMEs) in Polokwane, South Africa. SMEs are regarded worldwide as the cornerstone for economic development since they are established to foster any country's economic growth and development. However, SMEs are faced with business marketing problems that lead to their downfall, which should be seriously considered because it adversely affects the positive impacts of the SMEs. The study adopted the survey method, distributing 412 questionnaires to SMEs operating in Polokwane. Sales promotion was found to be the most used form of marketing communication. It was found that there is a positive correlation between marketing communication strategies and the SMEs' performance, and that some marketing communication elements affect sales increase, customer relationships, customer loyalty and profitability.

Keywords: Marketing communication; SMEs; sales promotion; SME performance; business branding; digital marketing; personal selling.

INTRODUCTION AND BACKGROUND

Small and medium sized businesses (SMEs) are recognised as the backbone of economic growth in both developed and developing nations due to their favourable effects on job creation, sustainable economic growth, and gross domestic product (GDP) (Smit & Watkins, 2012). Because of their contributions to the manufacturing sector, the decline in unemployment, and the diversification of production, they are viewed as an engine of growth and development (Iorun, 2014). Susanto et al. (2021) affirm that SMEs contribute positively to the economic growth of emerging countries. However, SMEs struggle to sustain their performance within the highly competitive environment. SMEs' positive contribution is shown through the improvement in the GDP, growth in new business creation and income, and improved employment opportunities (Omar et al., 2020; Sopha et al., 2021).

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Apart from SMEs' positive contribution to the economic growth of countries, SMEs face a high failure rate. According to Hendricks et al. (2015), the estimated failure rate within the first two years of operation is 75%. The current extraordinary and unavoidable situation resulting from COVID-19 has impacted SMEs more negatively than it has well-established businesses. Empirical research worldwide shows that half the operational SMEs have temporarily ceased operating, and almost 60% are at the edge of running out of cash reserves (Bartik et al., 2020; Giupponi & Landais, 2020).

Since SMEs are an essential part of the local and international economy, marketing communication is an important activity for the success of these SMEs (Resnick et al., 2016). According to Bayraktar et al. (2017), the business activities of SMEs are either negatively or positively affected by the increasing market changes, which puts tremendous pressure on each company to develop and implement effective strategies to compete in this competitive market environment. It is conjectured that SMEs require marketing capabilities to connect and establish a strong relationship between entrepreneurial orientation (EO) and performance (Susanto et al., 2021).

Marketing communication has been considered one of the most important aspects of strategic business management for success and sustainable development (Ashley & Tuten, 2015). Lee (2017) states that marketing communication provides the ability to listen, suggest the movements and demands of consumers, and respond to them accordingly. Kryscynski et al. (2021) agree with Lee (2017) by stating that marketing capabilities help SMEs to realise their profit potential while simultaneously assisting them with developing a competitive advantage over others. Developing an active marketing communication strategy based on current market trends is necessary to achieve sustainable business growth that will appeal to many existing and potential customers.

The most used marketing communication instruments are sales promotions, advertising, personal selling, and public relations. In some cases, personal selling is the most frequently used marketing communication tool with customers during the pre-purchase, purchase, and post-purchase periods (Ližbetinová et al., 2019). For SMEs to better their performance, they need to determine the elements of marketing communication they can use for their businesses (Makhubela, 2019). This requires them to identify appropriate marketing communication tools for effective business performance (Makhitha, 2019).

The marketing communication tactics used by SMEs in Polokwane, South Africa, have not yet been significantly researched. There is a lack of comprehensive information regarding the role of marketing communication strategies in the success or failure of SMEs located in Polokwane. All appropriate strategies SMEs employ – to communicate business messages and eliciting feedback from target audiences to elicit an advantageous customer response – fall under marketing communication (Kanibira et al., 2014; Assiamah-Appiah, 2020).

According to Nankali et al. (2020), marketing communication is important for SMEs to achieve marketing communication objectives with the target audiences. Mudavanhu et al. (2011) assert that the high level of bankruptcies of SMEs is partly due to the lack of well-developed marketing communication strategies and little or no effort by owners/managers to market their businesses effectively. Effective marketing impacts and influences the success of any business entity, including SMEs (Omar & Anas, 2014). Although marketing plays a vital role in the success or failure of SMEs, it is also one of the biggest challenges SMEs face in their business processes (Bouazza et al., 2015). This could be due to a lack of skills in identifying and applying relevant marketing communication strategies (Van Scheers, 2011), which is influenced by the experience, training and revenue needed for marketing communication purposes (Phokwane & Makhitha, 2020). Marketing, including marketing communication, affects business performance in terms of revenue growth, broader customer connections, improved efficiency, and capacity to compete fairly with larger firms (David et al., 2013). Some SMEs in Polokwane are part of business associations and cooperatives, and benefit from joint marketing programmes and technical marketing services. However, they cannot effectively undertake marketing communication tasks themselves (Mbedzi, 2011; Kwon et al., 2021). Lekhanya (2014) found that SMEs use few marketing

communication strategies to enhance their performance. Against this background, this study will determine the influence of marketing communication strategies adopted by SMEs operating in Polokwane on their performance. The study also determined which marketing communication strategy is important for SMEs in Polokwane.

LITERATURE REVIEW

Subsequently, literature on marketing by SMEs and marketing communication elements will be reviewed.

Marketing Communication in SMEs

According to The Banking Association of South Africa (2016), SMEs make up around 90% of the formal business sector in South Africa and contribute about 34% of the nation's GDP. Since the SME sector is regarded as the bedrock of employment creation, it is generally accepted throughout the world, especially in the United States of America and Japan, that it can prevent the economy from collapsing (Calcagnini & Favaretto, 2011). Given the expanding client base in recent years, Katua (2014) is of the opinion that large businesses are unable to meet the rising demand for goods and services on their own, necessitating the existence of SMEs. It is accepted globally that SMEs have contributed meaningfully to the social and economic development of their nations. As a result, governments worldwide shifted their focus to the development of the SME sector to promote economic growth (Ramasobana, 2017).

Franco et al. (2014) state that marketing is crucial to the success of SMEs. The capacity to inform the market about the product on offer, as well as its quality, features and benefits, is one of the many factors that aid SMEs in succeeding (Kallier, 2017). Marketing communication fosters business growth by giving consumers a cause to buy a company's products, thus adding value to the business and its consumers (Cacciolatti & Fearn, 2013). However, previous studies have revealed that SMEs lack marketing communication and expertise (Franco et al., 2014). Kamunge et al. (2014) state that although an SME may know how to run a successful business, it will fail if it lacks marketing knowledge and communication.

Marketing communication is defined by Ebitu (2016) as a pre-determined, influential technique used by companies to convey positive and expected information about the company and its products and services to the target audience in the hope of positive responses. Corporate marketing communications aim to improve the understanding of the company's marketing information and influence the acceptance of SMEs' offerings.

Although marketing communication has a variety of goals, most of them revolve around persuading, educating, and reminding target markets about the company's goods, services, or brands to raise awareness of and demand for SMEs' market offerings (Ferrel & Hartline, 2008; Schiffman et al., 2010). According to Franco et al. (2014), the conditions under which SMEs operate, the resources at their disposal, and the traits of the owner/manager impact SMEs' marketing communication efforts. Marketing communication is not just a luxury of huge corporations; it also significantly affects SMEs. Marketing communications can apply to various market scenarios, from huge corporations to SMEs, but SMEs employ marketing communication tools in more industry-specific ways than large businesses (Rabova, 2014). According to Buil et al. (2013), marketing communication improves brand awareness and thus knowledge outcomes and SME performance. Market share, growth, and profitability are ways to gauge an SME's performance (Haghighinasab et al., 2013). The effectiveness and consistency of an SME's marketing communication strategies impact the long-term success or failure of the business (Iorun, 2014).

Marketing communication consists of a company's various forms of communication, including advertising, sponsorships, sales promotions, publicity, public relations, direct marketing, personal selling,

interactive marketing, and word of mouth (Kotler et al., 2015). Belch and Belch (2012) assert that SMEs must choose the marketing communication tools they want to apply. SMEs have used some of these tools before, so they are not entirely new to them. However, the integrated management of these technologies as part of a strategic communication programme in the rapidly evolving SME sector is novel (van Scheers, 2018). According to Lekhanya (2015), SMEs use very few marketing communications tools to drive growth. Therefore, the marketing manager ought to identify which marketing communication methods yielded the best results each year and which methods matched which products (Gerber, 2009: 44). Ruzzier et al. (2013), Dzisi and Ofosu (2014), and Ramasobana (2017) stated that the most used marketing communication tools in the SME sector are sales promotions, personal selling, public relations, sponsorships, advertising, word of mouth, direct marketing, and interactive marketing.

SMEs can compete with larger organisations, no matter their size, using the correct marketing communications strategies and a combination of marketing communications technologies (Rabale, 2011). Even if few SMEs make use of these opportunities, they will find customers who are searching for specific products and services globally by integrating marketing communication tools (Aysylu, 2016). According to Saeed et al. (2013), promoting innovations that usually rely on the traditional showcasing techniques of large companies renders the concept of showcasing communication within the SME division somehow insufficient.

Marketing Communication and SMEs' Performance

It has been reported that evaluating the effectiveness of a marketing communication instrument and the impact that a particular marketing communication activity has on various business performance criteria are overlooked (Mumel et al., 2007; Ardjouman, 2014). According to Dzisi and Ofosu's (2014) study, marketing communication methods are linked to SMEs' success and help them compete with big businesses. David et al. (2013) also state that there is a strong correlation between the performance of SMEs in terms of revenue growth, job creation, increased efficiency, and close relationships with consumers.

Pisicchio and Toaldo (2020) show that SMEs' marketing communication tools can positively motivate and influence all marketing and operational processes within a firm. Robul et al. (2020) back them by stating that using marketing communication tools positively influences results from an SMEs' product/service innovations. Dzisi and Ofosu (2014) stated that, although it can be argued that the SMEs' performance is badly affected in the global market, most SMEs in Africa have implemented some marketing communication strategies in ways that empowered them to survive the heavy competition with other SMEs and large firms over the years. Renton et al. (2015) indicated that SME owners/managers made huge efforts to build their companies' communication and business identities. Marketing communication includes elements such as public relations, direct marketing, advertising, sales promotions, personal selling, business branding and sponsorships (Fill & Turnbull, 2016; Andrews & Shimp, 2017).

HYPOTHESIS DEVELOPMENT

Marketing communication strategies – like personal selling, public relations, advertising and direct marketing – are effective elements for communicating with all relevant stakeholders (Koekemoer, 2014). Ramasobana (2017) reported that traditional marketing and guerrilla marketing communication strategies could increase the sales and profit of SMEs. Jerman and Zayrsnik (2012) confirmed that marketing communication strategies have a positive impact on SMEs' performance and that their financial success is influenced by their ability to implement marketing communication strategies (Kotler & Keller, 2014).

Esposito (2013: 81) found that marketing communication is crucial for SMEs to develop, establish and maintain long-term relationships with customers and potential consumers. A study by Carvalho (2007: 79) found that businesses that understand marketing and marketing challenges and employ marketing personnel have a higher annual turnover than those that don't. Simpson et al. (2016) support this by stating that SMEs with fewer marketing activities have a lower turnover than those with more marketing activities.

According to Lekhanya (2015), SMEs employ few marketing communications tools to enhance their growth as they do not consider the role of Integrated Marketing Communications (IMC) necessary for the growth of their businesses. In addition, SMEs are constrained from implementing marketing communication strategies due to poor general and marketing management skills and a lack of human and financial resources, resulting in poor performance of SMEs with regard to profitability (Mpofu & Chigwende, 2013). Lekhanya (2015) reported that a lack of marketing knowledge and skills makes it difficult for SMEs to apply all marketing communication strategies and tools; the marketing communication tools they use most are local advertising and special offers.

A study by Nwankwere et al. (2019) concluded that marketing communication strategies significantly affected the performance of SMEs and recommended that SMEs should be familiar with sales promotions and advertising and should invest in these marketing communication strategies to stimulate the market demand for their products and services. Product, promotion, place, price, packaging and after-sales service jointly were found to significantly predict business performance in terms of profitability, market share, return on investment, and expansion (Adewale et al., 2019). Amin (2021) further reported a relationship between promotion, pricing, place and product strategies on the one hand, and the application of marketing strategies on the other, thereby influencing SMEs positively. Contrary to these findings, Yalo et al. (2019) advise SME owners in Kogi State to adopt more aggressive distribution and pricing strategies, and fewer promotion strategies to achieve high sales and profitability. Ramasoba (2017) revealed that traditional marketing and guerrilla marketing communication strategies increase SMEs' sales and profit.

According to Oluseyi (2019), SMEs' sales performance is significantly impacted by sales promotions as they can positively influence consumer purchase decisions. The findings are consistent with earlier scholarly publications, including Sapuro (2016) and Ulle et al. (2018), which revealed a substantial connection between promotional marketing methods and SME performance. Previous research indicated that applying advanced broadband information and communications technology (ICT) by SMEs, including digital marketing, can impact productivity significantly and positively (Nuseir & Aljumah 2020; Thaha et al., 2021; Mechman et al., 2022). Furthermore, Melovic et al. (2020) demonstrated that the greater a company's reliance on digital marketing, the greater its impact on promotion and brand positioning.

Brand knowledge is an important factor. The more consumers are aware of the brand, and the more information they have about factors such as the price and quality, the more they will be drawn to the brand (Yasodha & Sarnitha, 2021). Branding contributes positively to the financial performance of SMEs operating within evolving countries like South Africa (Farrington & Venter, 2018). The study shows that brand identity, internal branding, brand performance and financial performance are related constructs that have positive effects on brand performance, which in turn affects the SMEs' financial performance positively.

For personal selling, salespeople are employed to communicate the value of services to clients, thereby increasing customer satisfaction and ensuring that customers receive an appropriate quality of services while improving information to meet customer needs (Olumoko et al., 2012). SMEs rarely use personal selling because it is expensive and time consuming; however, it is appropriate for well-

established businesses (Hiduke & Ryan, 2014). The study's findings are consistent with those of Oyeniyi et al. (2020), who discovered a positive relationship between SMEs' performance and personal selling.

Against the above background, four hypotheses were developed to test the effect of marketing communication strategies on the performance of SMEs and to achieve the main objective of the study:

H₁: Marketing communication significantly influences SMEs' performance by increasing sales.

H₂: Marketing communication significantly influences SMEs' performance by improving relationships with customers.

H₃: Marketing communication significantly influences SMEs' performance by improving customer loyalty.

H₄: Marketing communication significantly influences SMEs' performance by increasing profitability.

RESEARCH METHODOLOGY

The target population of this study consisted of owners/managers of SMEs operating in Polokwane, South Africa. Hawkers were not included in the study. A non-probability judgment sample of 412 SMEs was selected.

A questionnaire was used to collect data from the selected sample. The questionnaire items, measuring marketing communication, were adapted from Lekhanya (2015); Mohammad and Neda (2012) for product innovation; Keizer, Dijkstra and Halman (2002); Oke, Burke and Myers (2007); and Osei, Yunfei, Appienti and Forkuoh (2016). The questionnaire items measuring SMEs performance were adapted from Oke, Burke and Myers (2007); Terziovski (2010); Osei, Yunfei, Appienti and Forkuoh (2016).

This study used descriptive statistics, factor analysis and analysis of variance (ANOVA) to determine the impact of marketing communication on SMEs' organisational performance. ANOVA statistical analysis tests, which are statistical analyses used to test for differences between two means or more group means (Sudman & Blair, 1998: 483), were also conducted to test the hypotheses.

RESULTS AND FINDINGS

Profile of the Respondents

Table 1 provides a detailed profile of respondents. More than 40% (40,9%, n=168) of the respondents fall within the age group 35 to 45 years. The lowest was the age group 18 to 25 years old, which accounts for 3,4% of the overall population. There were more males (58,0%, n=239) than females (42,0%, n=173).

The largest proportion of the businesses (47,0%, n=193) had an annual turnover of R500 001 to R1 000 000, followed by 37,7% of businesses with a turnover of R1 000 001 to over R5 000 000. Only 2,4% of the businesses had a minimum turnover of R0 to R100 000.

It was found that 85% of the respondents had business marketing training.

TABLE 1: DEMOGRAPHIC COMPOSITION OF RESPONDENTS

		Frequency	Percentage %
Age	18-25 years	14	3,4%

	25-35 years	94	22,9%
	35-45 years	168	40,9%
	45-55 years	103	24,8%
	55-65 years	33	8,0%
	TOTAL	412	100%
Gender	Male	239	58,0%
	Female	173	42,0%
	TOTAL	412	100%
Role in the business	Owner	98	24,0%
	Manager	189	45,9%
	Owner/Manager	124	30,1%
	TOTAL	412	100%
Annual turnover	R0-R100 000	10	2,4%
	R100 001-R500 000	54	12,9%
	R500 001-1 000 000	193	47,0%
	R1 000 001-over R5 000 000	155	37,7%
	TOTAL	412	100%
Business marketing training	Trained	350	85,0%
	Not trained	62	15,0%
	TOTAL	412	100%

Reliability and Validity

The Cronbach's alpha (α) was used to test the reliability of the instrument. Exploratory factor analyses (EFA) extracted nine factors for marketing communication strategy with an overall Cronbach's alpha of 0.611. Rodríguez-Gutiérrez, Moreno and Tejada (2015) attained a α of 0.67. Taper (2016), supported by Ramsden (2019), states that depending on what is investigated, an alpha value of 0.45 to 0.98 is acceptable, as various lists of terms advocate that there is no clear accord on the most acceptable labels to use in describing the values found in calculating the Cronbach's alpha value.

To determine the content validity of the study, the questionnaire pilot tested ten SMEs to determine the suitability of the questionnaire and to eliminate any vague and unrelated questions. Questions that posed challenges and were difficult to understand were reformulated. The questionnaire was also adapted from existing studies to satisfy content validity. Exploratory factor analyses were conducted to assess the convergent validity. The communalities from each variable ranged from 0.43 to 0.79, which was satisfactory as supported by Child (2006), who argued that the minimum value for communalities should be 0.2. The factor loadings were also above 0.5 for each item. The discriminant validity was determined through correlation analysis; a reasonable number of items had correlations value of over 0.3.

Factor Analysis and Importance of Marketing Communication Elements

THE EFFECTS OF MARKETING COMMUNICATION STRATEGIES

To lessen the dimensionality of the data, principal component analysis (PCA) with IBM® SPSS® Statistics 26.0 was used to study relationship patterns between the questions used to elicit the respondents’ perceptions regarding marketing communications in their businesses. Pearson’s correlation coefficient was used to test the strengths and weaknesses of the relationships between variables in accordance with the objectives of this study.

Bartlett’s Test of Sphericity has been used for the conformity of data with factor analysis, and the Kaiser-Meyer-Olkin coefficient (KMO) has been used for the appropriateness of sample size. The Kaiser-Meyer-Olkin value was 0.729, which is above the recommended minimum value of 0.50 (Kaiser, 1970, 1974; Field, 2009; Yayar & Karaca, 2017). Bartlett’s Test of Sphericity (Bartlett, 1954) reached statistical significance, $p < 0,001$. Thus, the correlation matrix was assumed to be factorable.

Table 2: Factor analysis

	1. Sales promotion	2. Digital marketing	3. Public relations	4. E-mail comm.	5. Business branding	6. Telemarketing	7. Personal selling	8. Traditional media	9. Word of mouth
We give out business cards	.726								
We distribute flyers and leaflets	.674								
Networking helps us to form relationships with others	.664								
We find that word of mouth has more credibility than advertisers can even imagine	.528								
We use e-mail to communicate with suppliers		.728							
We use social media to communicate with customers		.618							
We use social media to communicate our special offers		.613							
We communicate our special offers via SMS		.593							
We make use of national advertising			.869						
We use sponsorships as part of marketing communication			.759						
We make use of public relations			.622						

We use e-mail to communicate with customers				.920					
We use e-mails to advertise our products to customers				.915					
We communicate our special offers on the internet					.759				
Marketing communication helps us build a strong brand identity					.670				
Brochures are handed out as part of communications with our customers					.503				
We believe that telemarketing is not an appropriate tool for SMEs since it involves too much money						-.811			
We believe that telemarketing is a good method for direct marketing						.749			
Personal selling is an important and dominant thing for us to increase sales and build relationships with our customers							.868		
Personal selling has a significant influence on our sales force performance							.573		
We advertise in newspapers								.876	
We advertise in magazines								.662	
For us, word of mouth is the best way of advertising without payment									.783
We find that word of mouth influences customer decision-making									-.691
Percentage of variance	16.25	9.902	6.356	6.066	5.28	4.870	4.615	4.461	4.326
Cumulative percentage	16.25	26.15	32.51	38.579	43.86	48.73	53.35	57.810	62.137
Cronbach's alpha	0.630	0.577	0.663	0.777	0.482	0.575	0.502	0.393	0.313
Mean score	4.428	4.367	3.042	3.9345	4.332	3.900	4.194	3.7221	3.0461
Standard deviation	0.430	0.449	0.860	0.9618	0.441	0.743	0.533	0.7844	0.45242

Extraction method: Principal Component Analysis
Rotation method: Promax with Kaiser Normalization^a
a. Rotation converged in eight iterations

As can be seen from table 2, the factor analysis for marketing communication elements produced nine factors: Factor 1: Sales promotion; Factor 2: Digital marketing; Factor 3: Public relations; Factor 4: E-mail communication; Factor 5: Business branding; Factor 6: Telemarketing; Factor 7: Personal selling; Factor 8: Traditional media; and Factor 9: Word of mouth. Factors 8 and 9 were, however, dropped as possible factors in SMEs communication strategy because of the poor Cronbach’s Alpha values.

Factor 1: Sales promotion had the highest mean score of 4,42, which implies that most SMEs agree that sales promotion is important for their business as a communication element. This was followed by Factor 2: Digital marketing and Factor 5: Business branding, with mean scores of 4,36 and 4,33 respectively, implying that most SMEs also agree that these elements are important business communication tools. Factor 7: Personal selling had a mean score of 4,12, which is also high and denotes that SMEs agree that this, too, is important for business communication.

The standard deviation (SD) for Factors 1, 2 and 5 were lower, that is, 0,42, 0,44 and 0,44 respectively, supporting the idea that SMEs fully agree that these factors are important elements for business communication. Factors with higher SDs, such as Factor 4: E-mail communication, imply that SMEs did not all agree on the importance of this factor for business communication as a technique that impacts the buyer as a systematic marketing instrument. Fast-tracking the purchase process with short-term effects (Genchev & Todorova, 2017) involves lowering the price of a product and improving the customers’ perceived product value (Familmaleki et al., 2015). SMEs use sales promotions to get rid of old stock, promote new products to both new and old customers, and retain existing customers (Dzisi & Ofosu, 2014: 106).

According to Yasmin et al. (2015), digital marketing is widely used by SMEs to promote products and services using digital channels. Yaseen et al. (2019) found that most SMEs use digital marketing. However, some have limited access to social media as a standard tool. Digital marketing provides opportunities for SMEs to appeal to new customers and encourage current customers to buy (Matt & Rauch, 2020).

Effects of Marketing Communication on SMEs’ Performance

To investigate which marketing communication strategies, have a significant relationship with the individual performance aspect variables, the ANOVA was used. The descriptive statistics for performance items showed that few respondents indicated that they do not agree with the statements corresponding with the individual performance aspects. Thus, to make them more usable statistically, the performance items were recorded into dichotomous variables where 0 = Do not agree (includes Strongly disagree, Disagree and Neutral) and 1 = Agree (includes Agree and Strongly disagree). In order to determine whether there is a significant relationship between the continuous marketing communication dimensions and the individual (categorical – dichotomous) performance aspects related to marketing communication, the non-parametric Mann-Whitney U test was used. The Mann-Whitney test found that there is a significant relationship between sales promotion and increased sales, $z=2,619$, $p<.01$. Those respondents who indicated that they do sales promotion (MR=208,33, n=406) reported significantly higher agreement with the statement that their marketing strategies resulted in sales increase than those who did not indicate that they advertise actively (MR=82,83, n=6).

Table 3: Tests Statistics^a – The effect of marketing communication on increased sales

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Sales promotions	476.000	497.000	-2.619	0.009
Digital marketing	763.000	784.000	-1.593	0.111
Public relations	915.500	83536.500	-1.052	0.293
E-mail communication	1128.000	83749.000	-.319	0.750
Business branding	1171.000	1192.000	-.167	0.868
Telemarketing	1106.500	83727.500	-.396	0.692
Personal selling	735.000	756.000	-1.753	0.080
a. Grouping variable: Q5-V109 Implementation of marketing strategies has resulted in sales increase in our business				

The Mann-Whitney test found that there is a significant relationship between the sales promotion and building relationships with customers, $z=-2,398$, $p<.05$. Those respondents who indicated that they do sales promotion (MR=208,67, $n=402$) reported significantly higher agreement with the statement that their marketing communication helped them to build more relationships with customers than those who did not indicate that they advertise actively (MR=119,20, $n=10$).

The Mann-Whitney test found that there is a significant relationship between brand exposure, and building relationships with customers $z=-2,221$, $p<.05$. Those respondents who indicated that brand exposure is important (MR=208,50, $n=402$) reported significantly higher agreement with the statement that their marketing communication helped them to build more relationships with customers than those who did not indicate that brand exposure is important (MR=126,10, $n=10$).

The Mann-Whitney test found that there is a significant relationship between personal selling dimension of marketing communication and building relationships with customers, $z=-3,093$, $p<.01$. Those respondents who indicated that personal selling is important (MR=209,22, $n=402$) reported significantly higher agreement with the statement that their marketing communication helped them to build more relationships with customers than those who did not indicate that personal selling is important (MR=97,00, $n=10$).

Table 4: Tests statistics – The effect of marketing communication on relationships with customers

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Sales promotions	1137.000	1192.000	-2.398	0.016
Digital marketing	1778.500	1833.500	-.631	0.528
Public relations	1573.000	82576.000	-1.183	0.237
E-mail communication	1940.000	82943.000	-.193	0.847
Business branding	1206.000	1261.000	-2.221	0.026

Telemarketing	1889.000	1944.000	-.334	0.738
Personal selling	915.000	970.000	-3.093	0.002
a. Grouping variable: Marketing communication helped us to build better relationships with customers				

As shown in table 5 below, the Mann-Whitney test found that there is a significant relationship between use of new media communication tools and increased profitability, $z=-2,392$, $p<.05$. Those respondents who indicated that using digital marketing tools is important (MR=211,41, n=366) reported significantly higher agreement with the statement that marketing communication resulted in increased profitability than those who did not indicate that using digital marketing tools is important (MR=167,45, n=46).

The Mann-Whitney test found that there is a significant relationship between telemarketing and increased profitability, $z=-2,128$, $p<.05$. Those respondents who indicated that telemarketing is useful (MR=210,81, n=366) reported significantly higher agreement with the statement that marketing communication resulted in increased profitability than those who did not indicate that telemarketing is useful (MR=172,24, n=46).

The Mann-Whitney test found that there is a significant relationship between personal selling and increased profitability, $z=-2,032$, $p<.05$. Those respondents who indicated that personal selling is important (MR=210,52, n=366) reported significantly higher agreement with the statement that marketing communication resulted in increased profitability than those who did not indicate that personal selling is important (MR=174,50, n=46).

Table 5: Tests statistics – The effect of marketing communication on increased profitability

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Sales promotions	7913.000	8994.000	-.678	0.498
Digital marketing	6621.500	7702.500	-2.392	0.017
Public relations	7550.000	74711.000	-1.148	0.251
E-mail communication	8113.500	9194.500	-.410	0.682
Business branding	7164.000	8245.000	-1.693	0.091
Telemarketing	6842.000	7923.000	-2.128	0.033
Personal selling	6946.000	8027.000	-2.032	0.042
a. Grouping variable: Q5-V115_Marketing communication resulted in increased profitability for our business				

The Mann-Whitney test results, appearing in table 6 below, found that there is a highly significant relationship between the digital marketing and increased customer loyalty, $z=-4,013$, $p<.001$. Those respondents who indicated that using digital marketing is important (MR=214,32, n=370) reported significantly higher agreement with the statement that marketing communication has resulted in increased customer loyalty than those who did not indicate that using digital marketing tools is important (MR=137,57, n=42).

The Mann-Whitney test found that there is a significant relationship between public relations and increased customer loyalty, $z=-2,211$, $p<.05$. Those respondents who indicated that using public relations is important (MR=202,16, n=370) reported significantly **less** agreement with the statement that marketing communication has resulted in increased customer loyalty than those who did not indicate that using public relations is important (MR=244,74, n=42).

Table 6: Tests statistics – The effect of marketing communication on increased customer loyalty

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Sales promotions	7277.000	8180.000	-.689	0.491
Digital marketing	4875.000	5778.000	-4.013	0.000
Public relations	6164.000	74799.000	-2.211	0.027
E-mail communication	7725.500	8628.500	-.062	0.950
Business branding	7044.000	7947.000	-1.020	0.308
Telemarketing	6542.000	7445.000	-1.726	0.084
Personal selling	6960.500	7863.500	-1.163	0.245
a. Grouping variable: Q5-V113_Marketing communication has resulted in increased customer loyalty towards our business				

DISCUSSION

The purpose of this study was to determine the impact of marketing communication strategies on the performance of SMEs in Polokwane, South Africa. The performance of SMEs was measured using increase in sales, customer relationships, increase in profitability, and customer loyalty as performance indicators. To achieve this main objective, four hypotheses were formulated and tested to determine if any of the four performance measurement indicators are influenced by marketing communication strategies. The results of the hypotheses testing confirmed that sales promotion is the only marketing communication strategy influencing an increase in sales of SMEs, which supported hypothesis 1. According to a study by Oluseyi (2019), SMEs' sales performance is significantly impacted by sales promotions, supporting the findings of this study. The results for hypothesis 2 showed that sales promotions and personal selling are the marketing communication strategies influencing relationships with customers. Sales promotion techniques influence consumer purchase decisions successfully, and the success of SMEs is significantly impacted by sales marketing. The findings are consistent with earlier scholarly publications, including Sapuro (2016) and Ulle et al. (2018), which revealed a substantial connection between promotional marketing methods and SME performance. Personal selling refers to salespeople communicating the value of services to clients, thereby increasing customer satisfaction and ensuring that customers receive the appropriate quality of services while also improving information to meet customer needs (Olumoko et al., 2012). SMEs rarely use personal selling as it is expensive and time consuming; however, it is

appropriate for well-established businesses (Hiduke & Ryan, 2014). These findings are consistent with those of Oyeniyi et al. (2020), who discovered a positive relationship between SME performance and personal selling.

Hypothesis 3 was also confirmed since digital marketing, telemarketing and personal selling were marketing communication strategies that lead to increased profitability. The last hypothesis, H4, was also confirmed and indicated that digital marketing and public relations are marketing communication strategies influencing customer loyalty. Previous research indicated that advanced broadband ICT application adoption by SMEs, including digital marketing, can have a significant and positive impact on productivity (Nuseir & Aljumah, 2020; Thaha et al., 2021; Mechman et al., 2022). Furthermore, Melovic et al. (2020) demonstrated that the greater a company's reliance on digital marketing in its business, the greater its impact on promotion and brand positioning.

RECOMMENDATIONS AND IMPLICATIONS

The main purpose of the study was to determine the influence of marketing communication strategies on SMEs performance. The four performance indicators were used, and included increased sales, customer relationship, increase profitability and customer loyalty. The study offers both theoretical and practical implications.

Theoretical implications: Contrary to existing studies (Lekhanya, 2014), this study targeted various marketing communication strategies to determine their influence on SMEs performance. The study found that sales promotion led to increased sales, and that sales promotions and personal selling are the marketing communication strategies influencing relationships with customers. Other studies investigated customer services, personal selling, packaging, and signboards (advertising) as marketing strategies that influence the profitability of SMEs (Phalstsi, 2016). Ramasobane (2017) recommended the use of traditional marketing and the use of guerrilla marketing communication strategies to increase the sales and profitability. This study contribute to existing knowledge in that sales promotion was found to increase sales while digital marketing, telemarketing and personal selling were marketing communication strategies that lead to increased profitability.

This study went beyond existing studies and investigated the impact of marketing communication strategies on customer relationships and customer loyalty, thereby adding new knowledge to existing studies. Digital marketing and public relations are marketing communication strategies influencing customer loyalty. Studies on the effect of marketing communication strategies on SMEs performance investigated profitability and sales and not the impact on customer loyalty and customer relationships (Mapheto, Oni & Matiza, 2014). The study also added to existing knowledge by identifying the marketing communication strategies considered important to SMEs. Sales promotion, digital marketing and business branding were rated the most important marketing communication strategies for SMEs.

Practical implications: This study found that SMEs considered sales promotion the most important marketing communication strategy, while digital marketing and business branding were also found to be of importance. It is essential that SME owners and managers use these strategies in their businesses to ensure success and growth. The use of digital marketing communication, which involves different digital tools such as a website, online marketing, social media and SMS, could be beneficial to SMEs for reaching broader market segments. Digital marketing is known to have advantages, such as providing businesses with global reach. This can benefit SMEs and help in growing their businesses by reaching those customers they would normally not reach if they did not have digital access.

CONCLUSIONS AND LIMITATIONS

The study found that SMEs see sales promotion, digital marketing and business branding as important marketing communication strategies. SMEs use sales promotions, digital marketing, telemarketing and public relations to influence their performance through increased sales, improved customer relationships, and increased profitability and customer loyalty. SMEs need to remember that different marketing communication strategies affect different businesses differently, and that they should therefore identify and implement those marketing communication strategies that can impact their business's performance positively.

The study aimed to determine if marketing communication impacts the performance of SMEs operating within the parameters of Polokwane, and the research objectives were achieved. The main limitation of the study was that it focused only on SMEs operating within the parameters of Polokwane and not in South Africa as a whole. Due to the nature and inaccessibility of the SME database in Limpopo Province, the convenience of snowball sampling was deemed suitable for the study.

Further studies could investigate the marketing communication of SMEs and the effect thereof in all provinces of South Africa. They can also determine which strategies would be most effective for different SMEs. The same can be done to determine which digital marketing strategies would be most effective for SMEs. Further studies could also consider provinces with similar SME profiles to compare the effect that marketing communication strategies have on their performances.

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