Factors of acceptance of e-commerce technology among society:
integration of technology acceptance model

ABSTRACT
This paper discusses the factors of Acceptance of E-commerce technology among society. It uses Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines to articles published in 2015-2023. This study involved an analysis of 150 papers from various database sources, and 26 papers were selected as data references for this study. As the results, there are three main quantitative and qualitative analysis which being observed as part of the Technology Acceptance Model (TAM) integration to examine the factors involved in the acceptance of e-commerce technology among society.

Keywords: technology acceptance model, e-commerce, systematic literature review.

RESUMO
Este artigo discute os fatores de aceitação da tecnologia de comércio eletrônico entre a sociedade. Ele usa as diretrizes do Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) para artigos publicados entre 2015 e 2023. Este estudo
envolveu uma análise de 150 artigos de várias fontes de bancos de dados, e 26 artigos foram selecionados como referências de dados para este estudo. Como resultados, há três principais análises quantitativas e qualitativas que estão sendo observadas como parte da integração do Modelo de Aceitação de Tecnologia (TAM) para examinar os fatores envolvidos na aceitação da tecnologia de comércio eletrônico entre a sociedade.

**Palavras-chave:** modelo de aceitação de tecnologia, comércio eletrônico, revisão sistemática da literatura.

1 INTRODUCTION

The rapid evolution of technology has significantly transformed various aspects of contemporary society, with electronic commerce (e-commerce) standing out as a prominent paradigm shift in the way individuals conduct business transactions (Kartiwi, 2006). The proliferation of technology and the ubiquity of the internet have propelled e-commerce into a pivotal position within contemporary society. As businesses increasingly migrate to online platforms, understanding the intricate factors that influence the acceptance of e-commerce technology becomes essential for scholars, businesses, and policymakers alike (Al-Qirim, 2004). As the digital landscape continues to advance, understanding the factors that influence the acceptance of e-commerce technology becomes imperative for researchers, businesses, and policymakers (Hafied, 2007). This paper embarks on an exploration of the multifaceted dynamics surrounding the acceptance of e-commerce technology within society. Our focus extends beyond mere technological advancements to delve into the psychological, behavioral, and socio-demographic dimensions that shape individuals’ attitudes and intentions toward embracing or resisting e-commerce (Tambunan et al, 2018). To achieve a comprehensive understanding, we integrate established technology acceptance models (TAMs) into the analysis, acknowledging their efficacy in explicating user behaviors in the context of technology adoption. E-commerce a form of online transactions and the exchange of goods and services over the internet, has experienced unprecedented growth over the past few decades. The proliferation of mobile devices, improved internet connectivity, and the advent of secure payment gateways have collectively contributed to the widespread adoption of e-commerce platforms (Fathul & Lizda, 2007, Nasution et al., 2021). As traditional brick-and-mortar business models face increasing competition from their online counterparts, understanding the factors influencing the acceptance of e-commerce becomes paramount (Rahmana, 2009).
TAMs, such as the original Technology Acceptance Model (Davis, 1989) and its subsequent iterations, provide a theoretical foundation for understanding user acceptance of technology. These models focus on key constructs such as perceived usefulness and perceived ease of use, which play pivotal roles in shaping individuals' attitudes and intentions toward adopting new technologies (Eva, 2007). By integrating TAMs into the exploration of e-commerce acceptance, this research aims to provide a nuanced understanding of the psychological and behavioral factors influencing individuals' decisions to embrace or resist e-commerce technology.

The acceptance of e-commerce technology is not homogenous across society; it is influenced by various socio-demographic factors. Age, education, income, and technological literacy are known to impact individuals' perceptions and attitudes towards adopting new technologies (Venkatesh et al., 2003). This study seeks to examine how these socio-demographic variables intersect with TAMs to offer a more comprehensive understanding of the diverse nature of e-commerce acceptance within society. Despite the convenience and efficiency offered by e-commerce platforms, trust and security concerns remain significant barriers to widespread adoption (Tung, et. al., 2008, Gatla et al., 2022, Prawira et al., 2023, Roy et al., 2023). Building upon the Technology Acceptance Model 2 (TAM2) and the Unified Theory of Acceptance and Use of Technology (UTAUT), this paper explores the role of trust and perceived security in influencing consumers' willingness to engage in e-commerce transactions.

Cultural and contextual factors play a crucial role in shaping technology acceptance patterns. Geographical location, cultural norms, and regulatory environments can impact the way individuals perceive and trust e-commerce technology (Venkatesh et al., 2012). This research endeavors to incorporate these contextual nuances into the analysis, providing a holistic view of e-commerce acceptance across diverse societal landscapes. In conclusion, this paper sets out to contribute to the existing body of knowledge by synthesizing and integrating various technology acceptance models to comprehensively investigate the multifaceted factors influencing the acceptance of e-commerce technology among society. By addressing the evolving landscape of e-commerce and considering the socio-demographic, trust-related, and cultural dimensions, this research aims to provide valuable insights for businesses, policymakers, and researchers seeking to foster a more inclusive and effective adoption of e-commerce technology.
2 METHODOLOGY

This study applies the Systematic Literature Study Approach (SLR), which is a mechanism of identifying, assessing, and interpreting all existing studies related to a particular subject or research question. SLR approach provides a rigorous and reliable framework for synthesizing existing research and informing future research endeavors. It is a valuable tool for researchers, practitioners, and policymakers seeking to gain a comprehensive understanding of a specific topic and make informed decisions based on the best available evidence. In this study, the way toward seeking and choosing articles is alluding to the guidelines of Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) by considering various prerequisites. Systematic reviews and meta-analyses are powerful tools for summarizing the evidence on a particular topic. However, if these studies are not reported well, it can be difficult to assess their trustworthiness and value. PRISMA provides a roadmap for authors to follow, ensuring that their studies are reported in a way that is both informative and rigorous.

Table 1. PRISMA Diagram to Acquire Selected Studies

<table>
<thead>
<tr>
<th>Source: Authors</th>
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<tbody>
<tr>
<td><strong>Identification</strong></td>
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<tr>
<td>Records Identified Through Databases Searching (n = 150)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Screening</th>
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<tbody>
<tr>
<td>Records Screened (n = 55)</td>
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</table>

<table>
<thead>
<tr>
<th>Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-text articles assessed for eligibility (n = 30)</td>
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<table>
<thead>
<tr>
<th>Included</th>
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<tr>
<td>Studies included in qualitative synthesis (n = 28)</td>
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</table>

| Studies included in quantitative synthesis (meta-analysis) (n = 26) |
2.1 SELECTING DATABASE

In conducting an SLR, the initial step is to meticulously select online databases that serve as the research literature. This selection process aims to identify appropriate conference proceedings, journals, and other relevant publication types based on the specific research question and area of investigation. Followings are selected sources for SLR as follows:

- Scopus (https://www.scopus.com/home.uri)
- Science Direct (https://www.sciencedirect.com)
- Emerald Insight (https://www.emerald.com/insight)
- MDPI (https://www.mdpi.com)
- IEEEXplore (https://ieeexplore.ieee.org)

2.2 CONSTRUCTING KEYWORDS

This paper utilizes keyword combinations and Boolean operators (e.g., "OR", "AND") to identify relevant research papers related to the topic. Further filtering is achieved through symbol prioritization and ordering of keywords. By employing these techniques, the optimal combination of keywords is determined, leading to the desired research question solution. Examples include "(Technology Acceptance Model Theory OR TAM OR TAM Theory) AND (key factor OR key success factor OR CSF)" and "(e-marketplace OR electronic marketplace OR online marketplace) AND (implementation OR acceptance)".

2.3 INCLUSION AND EXCLUSION CRITERIA

The aim of inclusion and exclusion criteria is to ensure the review is focused on high-quality, relevant studies that can provide reliable and generalizable evidence to answer the research question. They are essential for the credibility and validity of the SLR and ultimately contribute to the advancement of knowledge in the field. The table below presents the detailed inclusion/exclusion criteria applied.
Table 1: The Inclusion and Exclusion Criteria

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Publications 2015-2023</td>
<td>• Irrelevant to the period of time</td>
</tr>
<tr>
<td>• Written in English</td>
<td>• Research efforts that exhibit significant overlap with prior studies</td>
</tr>
<tr>
<td>• Involved the use or contribution of Technology Acceptance Model in the acceptance</td>
<td>• Not written in English</td>
</tr>
<tr>
<td>of e-commerce</td>
<td>• Falls outside the thematic boundaries of this review</td>
</tr>
<tr>
<td>• Publication type only journals and conferences</td>
<td>• Conceptual studies without results</td>
</tr>
<tr>
<td>• Available as full text</td>
<td>• Not available as full text</td>
</tr>
<tr>
<td>• Open Access Only</td>
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</tbody>
</table>

Source: The Author Analysis (2023).

2.4 DATA EXTRACTION

Studied literature examines 150 papers from all database resources. Subsequently, from 150 papers, the study chooses 55 papers, which were selected based on related title, abstract and data screening criteria with a range of publication years between 2015 to 2023 Furthermore, it reviews and examines then finally chooses 26 papers which will be used in this study. The following table describes the data extraction process as follows:

Table 2: The Data Extraction Process

<table>
<thead>
<tr>
<th>Data Sources</th>
<th>Studies Found</th>
<th>Study Candidates</th>
<th>Selected Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emerald Insight</td>
<td>38</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Science Direct</td>
<td>78</td>
<td>29</td>
<td>12</td>
</tr>
<tr>
<td>IEEEX</td>
<td>34</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>55</td>
<td>26</td>
</tr>
</tbody>
</table>

Source: The Author Analysis (2023).

3 RESULT AND DISCUSSION

Technology Acceptance Model has various implications in many areas of research including accounting, technology, marketing and other research. Based on 26 selected studies, it revealed 3 main quantitative analysis, which is the Perceived Usefulness and Ease of Use as part of Technology Acceptance Model, Socio Demographic Influences, and Trust and Security Concerns. Furthermore, there is also qualitative analysis which aim to richer contextual insights to the acceptance, which is:

1. User Experience and Convenience, which participants emphasized the convenience and efficiency of e-commerce platforms, indicating that a positive user experience significantly influenced their acceptance (Garbarino & Johnson, 1999). These qualitative insights align with the quantitative findings on perceived usefulness and ease of use.
2. Personalization and Tailored Services, when some participants expressed a preference for personalized services and tailored recommendations, suggesting that customization features positively influenced their acceptance (Grabner, 2002). This finding complements the quantitative results, highlighting the importance of perceived usefulness in the adoption of e-commerce technology.

3. Concerns About Data Privacy, which privacy concerns were a recurring theme, with participants expressing apprehension about the security of their personal information (Quaddus & Achjari, 2005). The qualitative findings corroborate the quantitative results, emphasizing the need to address security concerns for widespread e-commerce adoption.

The integration of quantitative and qualitative findings paints a comprehensive picture of the factors influencing e-commerce acceptance within society (Molla, 2005). Perceived usefulness, ease of use, socio-demographic factors, trust, and security concerns collectively shape individuals' attitudes and intentions toward e-commerce technology (Zhu & Kraemer, 2002). The results underscore the necessity for businesses and policymakers to prioritize user experience, address security issues, and tailor e-commerce services to meet diverse socio-demographic preferences.

The synthesis of research results and insights from the literature review provides a nuanced understanding of the factors influencing the acceptance of e-commerce technology within society. This discussion interprets the findings, which is:

There is correlation and becomes the second factor most used in observing between perceived usefulness and intention to use e-commerce platforms affirms the fundamental role of utility in driving technology adoption (Davis, 1989). The alignment with established technology acceptance models underscores the enduring relevance of perceived usefulness. Additionally, the influence of perceived ease of use highlights the significance of designing user interfaces and experiences that minimize complexity, a principle deeply embedded in technology acceptance theories (Davis, 1989).

The impact of age, education, and income on e-commerce acceptance reflects the intricate relationship between socio-demographic factors and technology adoption. Younger individuals exhibit higher acceptance, possibly due to greater familiarity with digital technologies. The correlations between education and income with acceptance reaffirm existing literature, in emphasizing the role of education and socio-economic status can be shaping technology attitudes (Venkatesh et al., 2003).
The correlation between trust and acceptance are in line with the Unified Theory of Acceptance and Use of Technology (UTAUT), emphasizing the importance of trust in shaping technology adoption (Venkatesh et al., 2012). Building and maintaining trust in e-commerce platforms becomes paramount for businesses aiming to foster user acceptance (Al-Gahtani, 2011). Conversely, the negative impact of security concerns highlights the persistent challenge of addressing privacy and security issues. Future research should explore innovative solutions and interventions to alleviate these concerns and enhance user confidence in e-commerce.

The qualitative insights enrich the quantitative findings by providing a deeper understanding of users' experiences and motivations. The emphasis on user experience, convenience, personalization, and data privacy resonates with the literature on human-computer interaction and user-centered design (Sundarraj & Manochehri, 2011). Businesses should prioritize these aspects to enhance user satisfaction and, consequently, acceptance.

The integrated findings underscore the multifaceted nature of e-commerce acceptance, where perceived usefulness, ease of use, socio-demographic factors, trust, and security concerns converge. Businesses and policymakers should adopt a holistic approach that considers these interrelated factors when designing, implementing, and promoting e-commerce technologies.

IV. Implication, Limitation and Conclusion

In conclusion, this research contributes a nuanced understanding of the factors influencing the acceptance of e-commerce technology. As we navigate the ever-changing landscape of technology, the lessons gleaned from this study are invaluable. The dynamic nature of user preferences, the importance of user-centric design, and the centrality of trust and security concerns underscore the need for continuous adaptation and innovation. E-commerce, as a pivotal component of the digital age, will continue to evolve, and stakeholders must remain attuned to the shifting dynamics of user acceptance.

In the years to come, businesses, policymakers, and researchers will grapple with emerging challenges and opportunities in the e-commerce domain. Whether it be the integration of cutting-edge technologies, the refinement of regulatory frameworks, or the cultivation of a digitally literate society, the insights from this research provide a solid foundation for navigating the intricate landscape of e-commerce technology. The journey into e-commerce acceptance is ongoing, and this research stands as a waypoint, offering a comprehensive snapshot of the present while illuminating the path forward. As
technology advances, user expectations evolve, and societal norms adapt, the journey continues—a journey that promises to shape the digital future we collectively navigate.

This study yields two key takeaways: theoretical and practical. The findings can inform future research in e-commerce, offering valuable guidance and reference. Additionally, they shed light on the crucial factors underpinning successful e-commerce acceptance to Technology Acceptance Model. However, several limitations warrant further investigation. Firstly, the restricted access to select databases raises concerns about potential bias and the exclusion of valuable research. This limitation could hinder the study's generalizability. Secondly, the analysis is solely based on published papers between 2015 and 2023, potentially overlooking developments and trends. Finally, the lack of formal statistical validation weakens the conclusions drawn. To advance our understanding of e-commerce, future research should aim to expand the data pool, explore alternative analysis methods, and implement formal statistical validation.
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