Investigation of the Users' Interaction with Online Real Estate Platforms in Australia

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Abstract: Online Platforms (OP) are increasingly being used for e-business in different sectors. With the advances in the internetbased business, OPs are increasingly being used for increasing global outreach and attracting more users in different industries. Real Estate industry, following the global trends, has developed multiple OPs that are currently being used for property-related business and purchase decisions. Although increasing used in the industry, Real Estate Online Platforms (REOPs) have never been investigated from the user's perspective to document their experience of online property information search. The current study explores the REOP based information from the users' perspective in Sydney Australia. Based on 108 responses collected on a 20 questions survey, three hypotheses pertinent to REOPs are formulated and investigated. The results show that most of the users are aware of REOPs and are using it easily. Further, the OP design and context is giving a good impression to the users. However, when it comes to decision making based on the OPs, the users are not necessarily making better decisions. This is giving rise to postpurchase regrets among the real estate users. This anomaly is linked to a lack of information provided on the REOPs such as the property photos, neighborhood insights, and real estate agencies' delayed response. The results are expected to lay the foundation for OP based technology acceptance in Real Estate.

Keywords: Real Estate Online Platforms (REOPs), Property Information, Online Platforms Acceptance, Technology Acceptance Model (TAM), User's Perception, Real Estate Management.

I. INTRODUCTION

Real estate market in 2015, valued at \$215 billion and growing till date, is getting attraction from global investors due to its return potential [1]. It is estimated that by 2020, investable real estate will have grown by more than 55% in comparison to 2012 thus displaying huge potential for investors and at the same time presenting challenges for management [2]. Among them, the highest used sources for online home search are Online Platforms (OPs) with as much as 95% of the entire home searches on the internet [3]. Such a high percentage of usage makes it more critical to the real estate online business and interactions. OPs are the primary interaction source for the users with the real estate agency or business. An interactive OP such as a website, coupled with the features affecting users' motivations to return to it or make purchase decisions, contributes to improving e-business performance [4]. According to Levy and Gvili [5], OP offering appropriate information helps the users buy, rent, be fascinated and thus keep on using the service. Therefore, the information availability on a Real Estate Online Platform (REOP) is critical to users' decisions. So, the users' needs must be considered, and relevant information made available for better user decisions and subsequent management.

World Wide Web evolution as an information and e-commerce tool has given significant rise to OP and web usage studies. Hsu et al. [6] and Galati et al. [4] referred to the OP as a beneficial international resource that should be a user-connecting window to help a company keep high competitiveness. Thus, an OP, holding a pivotal position as the point of the first contact, determines the future of the user's relationship with vendors and their offerings [7]. OPs have become a core component of the global e-business strategies providing buyer-seller interaction at the comfort of their homes [8]. A higher-quality OP, coupled with the features affecting users' motivations to return to the same OP or make new purchases, contributes to improving e-business performance [4]. OP presence, links, contents, texts, images, animation, and audio or visual elements are critical to its success [9]. The design, text, colour, and graphics leave a comprehensive visual impression on the OPs users leading to a better reputation and increased use. However, popularity and credibility are a function of perceptibility, uniqueness, genuineness, transparency, and flexibility and as such may not guarantee an OP's success [10].

REOPs are aimed at speedy selling of the properties through the provision of features and interactivity for faster selection and time savings for users. As per the report of Herbertson [11], 58% of the Perth property users, specifically the buyers, spend 60 minutes or less on a shortlisted property for inspection out of whom 23% end up regretting their decision. Similarly, Trulia [12] reports 52% renters and 51% home buyers regretting their decision mainly due to lack of information provided and their needs not met. Recently, popular REOPs such as *realestate.com.au*, *zillow.com*, *flatmatefinder.com.au*, *domain.com.au*, and others have started providing the core residential as well as neighbourhood insights such as the collective crime rates, average property price, markets accessibility, buy sale patterns, and travel rates to their users [13]. However, the introduction of such features does not necessarily involve the perceptions of the users as highlighted by Ullah et al. [10]. The point of concern is the involvement of users and their needs when introducing such features, as eventually, these users pay for the services in terms of overall property prices hike. Thus, their involvement becomes ever more critical. The users' needs understanding and corresponding incorporation in the REOPs provide a research gap that is targeted in the current study. Thus, the current study aims at understanding users' needs specifically in terms of the features and functions they want to see in a quality REOP to make better and reliable purchase decisions. This study identifies critical aspects of REOPs from literature and collects responses from the users' of REOPs based on a 20 questions survey. Additionally, three pertinent hypotheses are proposed

and tested based on the responses to highlight the efficiency and usefulness of the REOPs for empowering the users to make more informed decisions.

II. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The quality of the OP is of key importance for facilitating the User. OP quality is the class of an OP in terms of the options and results displayed, as well as the interactivity and immersion to keep a user involved [7]. The quality covers aspects from web design to the systems and information qualities. The success of an OP refers to the satisfaction and intent to reuse a specific OP as a result of a successful deal or purchase decision [5]. It has various parameters including but not limited to increased purchases, more intentions to use, better-perceived value, and others. Purchase intention is the inclination of a user or user to purchase property or reuse a specific service based on past success or interaction [7]. It is affected by various factors such as historical interactions, word of mouth, satisfaction levels, needs catering, availability and others. Satisfaction is the elevation in confidence and a sense of fulfilment as a result of successful business endeavour [6]. Various factors including but not limited to customization, online presence, responsiveness, feedbacks, and others affect it.

Technology acceptance theories have been introduced and modified over time to accept the latest and innovative technologies. Wu et al. [14] used the concept of TAM-2 for websites 2.0 study to highlight that users generally accept OPs and it is easier to understand their behaviour using this technology. Wangpipatwong et al. [15] examined e-government based OPs and revealed that perceived usefulness and perceived ease of use of Governments' OPs and citizen's computer self-efficacy directly enhanced citizen's continuance intention to use e-Government OPs. Similarly, different studies have considered various factors such as speed, web design, links, content richness, and others for OP evaluation. According to Hsu et al. [6], purchase intention through OPs is highly dependent on user-related factors in conjunction with OP characteristics. The authors highlight navigability, quality, security, and user experience as critical success factors (CSFs) for an OP. Luo et al. [7] consider e-loyalty and OPs quality as CSFs. Rocha [16] consider relevancy, links and speed as CSFs of OPs for enhancing online purchases. Similarly, Mohd-Any et al. [17] highlight OP attractiveness and richness as key factors for its success. Further, Levy and Gvili [5] highlighted content richness and links as important factors for OPs success and performance. Based on these key researches, the current study considers Navigability, Speed, Links, Relevancy, Richness, Attractiveness and Responsiveness as key factors affecting users' satisfaction for REOPs that will subsequently lead to the introduction of Real Estate Technology Acceptance Model. Table 1 defines these key terms and highlights limitations and findings of previous studies.

Factors	Definitions and previous findings	Limitations Lacks users' perspective. Only 2 case REOPs. No generic questionnaire	
Navigability	Navigability refers to finding information within an OP as well as the presence of tools linking external information to the OP such as links, maps, and videos. Higher navigability makes users significantly more focused, confident, efficient, effective and more satisfied [18].		
Speed	Speed means displaying quick and reliable results to save users' time. Quicker speed and higher results incline users towards using an OP. Speedy OP loading and friendly design attracts, engages and retain more users [8].	Lacks properties aspect and users' satisfaction assessment.	
Links	Links are references to internal or external information sources. Working and secure links can enhance users' trust and vice versa [19]. Available and hypertext links increases the usage of OPs [9].	No discussion on relevancy, links, third party advertisings, and misleading links	
Relevancy	Relevancy means the relatedness of the available information. Relevance increases the perceived value of OPs and brings more users' commitment. Relevancy increases recommendations and spreads positive word of mouth enhancing the agencies image [7].	Lack of framework to display limited and relevant results.	
Richness	Richness means the amount of details displayed by an OP. It is related to interactivity, playfulness and social capital through electronic word of mouth by users [5], that creates more e-value [17].	Lacks relevancy screening and information availability discussion	
Attractiveness	Attractiveness refers to the appeal of an OP in terms of sophisticated graphics, high-quality images, and immersion.	REOPs plugins and real- time viewing aspect are	
	Personalization and optimization increase attractiveness and users satisfaction [20].	missing.	
Responsiveness	Responsiveness means the completion of tasks in time and providing feedback. OPs support requests, categorization, and usability, but lack of platforms for engagement and dialog in general [21].	Public value creation is largely neglected in terms of REOPs.	

Table 1: Summary of key factors of technology acceptance influencing the users' satisfaction.

III. RESEARCH METHODOLOGY

This study follows the empirical analysis technique of analysing and interpreting the data collected using an online questionnaire survey. Empirical analyses are the clarification of analysis results and evidence-based approach to the research [22]. The method of this study involves a structured online questionnaire survey-based data collection. The online questionnaire was conducted using the tools provided by Survey Monkey. Survey Monkey is a powerful information collection tool that is fasters, reliable and within 10% accuracy of the traditional data collection approaches [23]. In total 20 questions were asked about various aspects of REOPs. The respondents are REOPs users based in Sydney Australia who have the experience of using REOPs for at least one year or otherwise have made at least one purchase or rent decision using the REOPs. The questionnaire was distributed regardless of the income of the respondents to incorporate people in general and not focus on a specific income group. Additionally, all respondents were Adult English speakers and living in Sydney Australia for at

least five years, so they had a good idea about the local rent and purchase rents. In total, seven popular REOPs of Australia including realestate.com.au, domain.com.au, gumtree.com.au, iglu.com.au, homely.com.au, allhomes.com.au, and flatmatefinders.com.au are considered. The option of "others" has been provided in the questionnaire for any other OP that is not mentioned above thus a holistic approach has been followed for data collection. Table 2 shows the main questions of the questionnaire and the hypotheses addressed through them. The research question summarized in the introduction revolves around "How are the user satisfaction and pertinent key factors influencing OP success and improving the online real estate performance?" Further, all the questions are multiple-choice based where a range of options from traditional yes/no to rankings on a scale of "0-10" have been used. Other types of questions include Likert scale answers from the range of "very dissatisfied (0)" to "very satisfied (5)". Similarly, scales of "not at all" to "extremely enough" were used for information related questions. All Likert based responses are later converted to a "%" scale to get uniformity in answers. Further, some open-ended descriptive questions have also been provided such as "If the OP was difficult to use? Specify", "Did you accomplish the purpose of your visit?" and "Do you have any suggestions for improving the OP?". These questions were helpful in getting the insights of respondents in case a component has been missed in the questionnaire or in case they wanted to add something extra or useful information.

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S. No	Selected Questions	Hypotheses	
1.	Is the Real Estate Online Platform (REOP) effectively helping with property search?	H1: The users use REOPs	
2.	Is the REOP easy to use?	easily.	
3.	Is the REOP giving useful information about a property?	-	
4.	Is the REOP design and texts giving the best satisfaction for the user?	H2: REOPs design and	
5.	Is every information reliable and detailed enough?	context are giving a good	
6.	Are the pictures being good enough?	impression to the users.	
7.	What is the user expecting from the REOP?	-	
8.	Is the REOP improving the relationship between the agencies and users?	H3: Using the REOP, the	
9.	Is the REOP allowing enough filters to refine the properties based on the user's preferences?	user making the right decision.	

IV.FINDINGS AND DISCUSSION

A. Evaluation of the Real Estate Online Practice

The first portion of the questionnaire consisted of basic questions such as the respondents' details and whether they have used a REOP for renting or buying a property. Overall, 108 responses were received in accordance with Dillman [24] who proposed sample size of 96 respondents to be a true representative of population 100,000,000 with 10 percent sampling error and 50/50 split. Since the population of Australia (24.13 million) and specifically Sydney (4.029 million) is way below the limit, a sample of above 96 is a good representative. A total of 92 percent respondents (100 in total) provided an affirmative answer to the question. The remaining 8 percent of respondents were excluded from the survey as the questions became irrelevant to them since the focus was to inquire from people who are aware of REOPs. Systematically the next question inquired about the purpose of using REOP. In response, 91 percent responded with rent, 5 percent with buy and 4 percent with others as shown in Fig 1. The popular responses from "others" category included responses such as "finding jobs", "finding flatmates" or "selling" something.

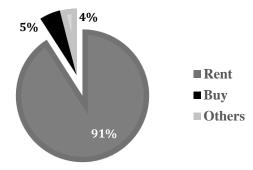


Fig 1: The purpose of using the REOP

Another question related to online practice evaluation was the use of specific REOPs. As previously mentioned, a list of seven REOPs from Australia was provided along with the option of others as shown in Table 3. A total of 43 percent of respondents indicated using realestate.com.au which is logical as this is the top REOP of Australia in terms of the number of visits by people as highlighted by Ullah et al. [13]. The authors also highlight domain.com.au as one of the top 5 REOP of Australia and accordingly it was emphasised by 28 percent respondents. The third most used REOP is gumtree.com.au with 23 percent usage. These three make a total of 94 percent leaving only 6 percent for the remaining OPs.



Fig 2: Comparisons of the OPs based on search tools and homepage Options

Online statistics for all the listed REOPs show a clear dominance of the top three highlighted REOPs in terms of the number of visits and time invested per user session. Therefore, the remaining REOPs need to up the game and take a leaf out of their book to join the elite REOP league. To compare the topmost visited REOP and one of the very less used REOP as per the responses, Fig 2 provides a generic comparison based on the homepages and search tools of the two REOPs. Fig 2 shows a clear difference between the ease of use of the two case REOPs. The less-used REOP has only two features as compared to six on the top used one. Not only the features are different, but the support and information provided to the users are way more detailed in the top one as compared to the other. Additionally, the top REOP provides distinguishing features such as nearby agents, detailed search filters, research on suburbs, mortgage options and others. When a search query for a test suburb (zip code 2032) was entered, the top REOP displayed 772 results in comparison to only 19 by the other. Thus, it comes as no surprise that one REOP is the market leader.

Table 3: The list of REOPs used by respondents					
Real Estate Online Platform	Participants (%)				
www.realestate.com.au	43				
www.domain.com.au	28				

www.domain.com.au	28
www.gumtree.com.au	23
www.iglu.com.au	2
www.flatmatefinders.com.au	2
Other (please specify)	2
www.homely.com.au	0
www.allhomes.com.au	0

In another question, the respondents were asked about the information source used by them when selecting an agency. The responses as shown in Table 4 indicates peoples' recommendation and internet search as the topmost sources with 42 percent responses each. A total of 32 percent of respondents highlighted selecting an agency based on the REOPs whereas the use of remaining sources such as advertisements, open houses, yard signs, and others was 11 percent and below individually. Further, when asked about the overall impression of the REOP, majority of the respondents were in neutral to the satisfied range with a response of 35 and 58 percent respectively.

Similarly, when inquired about the accomplishment of purpose fulfilment for which the REOP was visited, 50 percent of respondents replied in affirmative. A total of 16 percent of respondents indicated the nonfulfillment of the need after using the REOP whereas 34 percent indicated the partial address of their need through the REOP. Based on the results shown in Tables 1 to 4 and Fig 1, it can be inferred that the users use REOP easily and are aware of them. Therefore, the first hypothesis of the study "the users use the REOP easily" is accepted. Additionally, to give an open-ended option to respondents for recommending changes to the REOPs, a section was provided. In response, five out of the 15 respondents who recommended changes and up-gradation to the REOPs suggested adding more photos of properties to the REOPs. Three respondents highlighted inspection issues and flexibilities whereas a few others highlighted the use of mobile apps instead of OPs, lack of agency information and difficulty in using the REOPs as core issues.

Table 4. Top key words and mormation sources for selecting kear Estate agency							
Information Source	Responses	Key Words	Count	Responses			
People's recommendations	42%	Easy to use	26	30%			
Internet search engine	42%	Famous	13	15%			
Real estate Online Platforms	32%	Recommendations	11	13%			
Real estate advertisement	11%	Information Availability and Accuracy	11	13%			

Table 4: Top keywords and information sources for selecting Real Estate agency

B. Real Estate Online Platforms Features

OPs features are important to the users as it is the first impression that usually compels the user to stay and use the OP. An open-ended question was provided in the questionnaire for the respondents to inquire about what inspired them to use the REOP. The results, as shown in Table 4, provides the most quoted words. Although the exact words may be different than the ones quoted but essentially, they carried the same meaning. For example, the word "speed" encompasses faster speed, quickness, quick loading, quick searching, and others thus these are clustered into the "speed" section. An excel sheet was maintained to avoid repeated count of the keywords. Thus, a total of five keywords were identified from the responses with a minimum of 5 responses each. For this question, since it was not a compulsory one, 87 responses were received. Another useful aspect of the REOP is its detailed information and attributes that help user perceive the REOP better and be more satisfied. Thus, a question about how much detailed information does the REOP contain in terms of filters provided, property information and the displayed results were acquired. The results are compiled in Table 5 that shows the majority of responses falling in the category of somewhat enough to very enough. In case of searching filters, around 90 percent of the respondents replied with somewhat enough to very enough whereas 7 percent were in the not at all to not enough range and 3 percent were in extremely enough range. Similarly, for property information the somewhat enough to very enough range was around 91 percent but, in this case, the ratio of somewhat enough was way more than others with 56 percent responses. This clearly highlights the need for adding more and relevant property information to the REOPs. People want to see more information about their properties before making a purchase or rent decision. As highlighted by Trulia [12], among the top-most reported post-purchase regrets, lack of information is a growing concern fuelling the regrets. Thus, more information needs to be provided to attract and retain more users. Lastly, for property list category, the distribution was more evenly split with 44 percent response each of categories somewhat enough and very enough. A key thing to note here is that none of the categories show more than 4 percent responses for extremely enough option that clearly highlight the gap to be filled for OP-based property information dissemination to the users or end-users.

Table5: REOP attribution boosting users' perception

Not at all	Not enough	Somewhat enough	Very enough	Extremely enough
3%	4%	43%	47%	3%
2%	5%	56%	35%	2%
1%	7%	44%	44%	4%
	3% 2%	3% 4% 2% 5%	3% 4% 43% 2% 5% 56%	3% 4% 43% 47% 2% 5% 56% 35%

Additionally, in another question, the satisfaction aspect of users was focused based on interactions with the REOPs. Following the previous trend, highlights of this query as shown in Table 6, are following the same lines with the majority of responses in neutral to satisfied range. In case of the OP design context, it seems that the majority of users are satisfied with what is provided as depicted by 67 percent of respondents in satisfied to the very satisfied range. If the neutral category is included, the range is as much as 97 percent pointing to maturity of OP designing in the country. Similar trends can be observed for OP context query where the neutral and above range is 95 percent. Property list category also shows a good level of satisfaction with 95 percent of respondents replying in neutral to very satisfied. However, there is a considerable decrease in satisfaction levels when it comes to property photos. This doesn't come as a surprise as in a previous question when asked about the improvements, five out of 15 respondents indicated adding more photos to the REOPs. Thus, the satisfied to very satisfied level show a decline from the mid 60 percent levels to 41 percent in this case. Also, the dissatisfied level drastically increases from three to 15 percent highlighting a concerning point for the real estate managers and agencies.

Table 6: Interaction with REOP attributes and us	ers' Satisfaction
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Attributes	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied
Web design	1%	2%	30%	60%	7%
Web context	2%	3%	30%	59%	6%
Property photos	2%	15%	45%	37%	4%
Property list	2%	3%	47%	42%	5%

Based on the results shown in Tables 5 and 6, it can be deduced that the users think the information provided on REOPs is enough. Resultantly, the majority of the respondents are satisfied with the REOPs attributes. Thus, the second hypothesis of the study "REOP design and context are giving a good impression to the users" is accepted.

C. Evaluation of OP Acceptance Model (ease of use and usefulness)

Ease of use, a traditional TAM concern has always been pivotal in shaping and making users perception about using a service or OP. Keeping this important aspect in view, a question was focused on the ease of finding property information from the REOP. The analysis in Fig 3 represents considerable ease of finding information as depicted by 87 respondents out of 100.

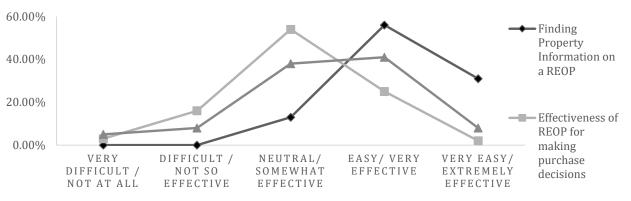


Fig 3: Effectiveness, Property Search and Ease of contacting an agent from a REOP

Interestingly, no respondent indicated the difficulty in finding desired information using the REOP they used although 13 remained neutral. This is in lines with REALTORS [3] and clearly depicts why there is a growing trend of internet use for finding information. The REOPs are easy to use and user-friendly, the two core components of TAM, and as a result, the REOPs are increasing being used for property-related search. The usefulness of OPs may not be the same as its ease of use as highlighted by Ullah et al. [10]. The current study shows similar results when it comes to decision making related effectiveness of the REOPs. Although 87 respondents replied with the finding information easy, the effectiveness of these REOPs is only indicated as 27 percent for very effective to extremely effective range. The inclination is more towards somewhat effectiveness. This clearly shows that the REOPs, though easy to use, may not be as effective to help make a better purchase decision. Clearly, there is a need for information enhancement and detailing in terms of photos and neighbourhood insights to help more people make better and informed decisions. More information means more aware users, which in turn make more users satisfied due to good perception. Thus, the technology is adopted and subsequently followed which is at the core of TAM. The analysis in Fig 3 also shows that the users can easily find specific information from the REOPs. As a result, 27 percent of the respondents think the REOPs are very effective for making purchase decisions. However, since the majority of the respondents (54 percent) think the REOPs are somewhat effective and not very effective, the third hypothesis "Using the REOPs, the users are making the right decision" is partially accepted. This, as highlighted by the decision regrets in literature [12] and the open-ended responses provided by the respondents, is linked to the lack of information provided on these REOPs. Specifically, the users want more photos, contact information and response of the agencies, and more information related to the properties.

D. Information Quality and Accuracy

Information accuracy and quality have always been concerning real estate agencies and managers. Good perception is developed when users find the information reliable to make accurate and knowledge-based informed decisions. Thus, it is at the core of the decision-making process that the users should be provided with high-quality information to make better decisions. To get an idea about this critical aspect, the respondents were asked if they were able to find specific information using the REOPs and how easy was it. The results, as shown in Fig 4, represent clear ease of finding the information with as much as 48 percent respondents indicating it. A total of 32 percent of respondents indicated finding the desired information but taking some extra time to dig it out. This highlights the accessibility of the information and the ease of finding it. No wonder, people invest so much time in searching for related information as indicated by Garret et al., (2016). To cope up with this, REOPs need to make the information using the REOP. This is also concerning as such users end up being unsatisfied and create bad perception. Such negative perception causes a ripple effect and may impart bad perception to potential users due to negative publicity.

Information accuracy is another concern for the agencies. The information provided on the REOPs, if misleading and incorrect, may incline the users to avoid the services. Key information in this aspect is that of contacting the real estate agencies for buying a property based on the REOP listing. A question was targeted at this aspect whereby the respondents were asked whether it was easy to contact real estate agency from this REOP. The analysis, previously shown in Fig 3, shows ease of contacting the agencies with as much as 87 percent of respondents replying with neutral and above options. Specifically, 49 percent of respondents replied with easy and very easy option, indicating the user-friendliness of the REOPs. Further, a considerable portion of respondents (13 percent) replied with the difficulty of contacting the agencies based on the information provided on the REOPs. To dig deeper into the reasons for difficulties in contacting the agencies, the respondents were provided an open-ended response section where they gave feedback and pertinent reasons causing such hindrance. Resultantly, six respondents highlighted the difficulties in contacting the real estate agencies through the REOPs. Two respondents indicated that the agencies never answered their calls or emails. One respondent highlighted that the agencies are poorly organized and take weeks to get back to them after they submit a query. Others highlighted the lack of contact information for direct contact, making it hard to contact the agencies. Similarly, one respondent highlighted language difficulties as a key issue when it comes to contacting the real estate agencies.

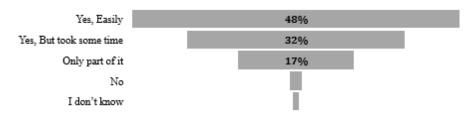


Fig 4: Finding specific information on the REOP

V. CONCLUSION AND FURTHER RESEARCH

OPs are increasingly being used for online business and purchases. Real Estate and Property managers are making use of the REOPs to present and subsequently sell their properties. However, no previous study has investigated the experiences of REOPs users for property search. Using a structured questionnaire survey, it is highlighted that users are aware of the REOPs and are easily using it. Overall, 92 percent of respondents are using REOPs for renting only as buying for foreigners within the Australian territories is costly and usually not affordable. Realestate.com.au is the highest used OP followed by domain.com.au and gumtree.com.au. These three accounts for 94 percent of the REOPs used in Australian property searches. Further, a clear majority of respondents rely on people's recommendations and internet-based searches for selecting a real estate agency to interact with. Majority of the respondents highlight a satisfying level of interactions with the REOPs however at the same time indicated lack of photos, detailed information of properties and lack of responses by the agencies as concerning aspects. In terms of the REOP search tools and attributes, the majority of users are satisfied and find the information easily on the REOPs. However, in terms of effectiveness for decision making, the REOPs are not much effective as highlighted by 54 percent of respondents. There is a lack of information provided on the REOPs in which the users are apparently more interested such as the neighbourhood insights and property details. In summary, the state of REOPs is good in Australia and people are using them as a reliable source however, further detailing is required in the REOPs to attract and satisfy more users. The current study is limited to data collected from residents of Sydney only and does not include the other Australian cities and territories. Further, it focuses on limited aspects of the REOPs including information detailing, quality of pictures, availability of filters, help in decision making and others. In the future, the aspects can be increased to include more details of the REOPs such as using the latest technologies for displaying data on the OPs based on users' preferences and property valuations. The scope of the study can be increased to include other Australian cities and be repeated in both developed and underdeveloped countries to develop a holistic and realistic image of the global REOPs.

REFERENCES

- [1] Miller. Trends and Innovations in the Real Estate Industry. online: E.: Available http://www.innovationmanagement.se/2017/11/21/trends-and innovations-in-the-real-estate-industry/ (05 April 2018). [2] PWC, 'Sustainability' transforms design of buildings and developments, in Real Estate 2020: Building the future 2014, PWC Real estate.
- [2] F we, Sustainability transforms design of buildings and developments, in Real Estate 2020. Building the fill
 [3] REALTORS, N.A.o., Real Estate in a Digital Age2017 Report. 2017, National Association of REALTORS.
- [4] Galati, A., M. Crescimanno, S. Tinervia, and D. Siggia; Website quality and internal business factors: an empirical investigation in the Italian wine industry. International Journal of Wine Business Research 2016, 28, (4): p. 308-326.
- [5] Levy, S. and Y. Gvili; How Credible is E-Word of Mouth Across Digital-Marketing Channels?: The Roles of Social Capital, Information Richness, and Interactivity. Journal of Advertising Research 2015, 55, (1): p. 95-109.
- [6] Hsu, C.-L., K.-C. Chang, and M.-C. Chen; The impact of website quality on customer satisfaction and purchase intention: perceived playfulness and perceived flow as mediators. Information Systems and e-Business Management 2012, 10, (4): p. 549-570.
- [7] Luo, H., X. Han, and Y. Yu; The impact of website quality on user loyalty through perceived value and commitment. In Service Systems and Service Management (ICSSSM), 2016 13th International Conference on. 2016; IEEE.
- [8] Garett, R., J. Chiu, L. Zhang, and S.D. Young; A literature review: website design and user engagement. Online journal of communication and media technologies 2016, 6, (3): p. 1.
- [9] Choi, J., C.S. Jacelon, and K.A. Kalmakis; Web-based, Pictograph-formatted Discharge Instructions for Low-literacy Older Adult after Hip-replacement Surgery: Findings of End-user Evaluation of the Website. Rehabilitation Nursing 2016.
- [10] Ullah, F., S. Sepasgozar, and C. Wang; A Systematic Review of Smart Real Estate Technology: Drivers of, and Barriers to, the Use of Digital Disruptive Technologies and Online Platforms. Sustainability 2018, 10, (9): p. 3142.
- [11] Herbertson, L.; Australians only spending one hour to buy a home. Available online: http://www.news.com.au/finance/real-estate/perth-wa/australians-only-spending-one-hour-to-buy-a-home/news-story/d2cd80ee981a2d0a02b3edfc317193d1 (25 april 2018).

[12] Trulia; Real Estate Regrets: Recovery Edition. Available online: https://www.trulia.com/blog/trends/regrets-2017/ (25 april 2018).

- [13] Ullah, F., S.M. Sepasgozar, and S.Q. Siddiqui; An Investigation of Real Estate Technology Utilization in Technologically Advanced Marketplace. In 9th International International Civil Engineering Congress (ICEC-2017) "Striving Towards Resilient Built Environment". Karachi Pakistan, 2017; Institute of Engineers Pakistan & NED university.
- [14] Wu, M.-Y., H.-P. Chou, Y.-C. Weng, and Y.-H. Huang; TAM-2 based study of website user behavior-using web 2.0 websites as an example. WSEAS Transactions on Business and Economics 2011, 4, (8): p. 133-151.
- [15] Wangpipatwong, S., W. Chutimaskul, and B. Papasratorn; Understanding Citizen's Continuance Intention to Use e-Government Website: a Composite View of Technology Acceptance Model and Computer Self-Efficacy. Electronic Journal of e-Government 2008, 6, (1).
- [16] Rocha, Á.; Framework for a global quality evaluation of a website. Online Information Review 2012, 36, (3): p. 374-382.
 [17] Mohd-Any, A.A., H. Winklhofer, and C. Ennew; Measuring users' value experience on a travel website (e-value) what value is cocreated by the user? Journal of Travel Research 2015, 54, (4): p. 496-510.
- [18] Miraz, M.H., M. Ali, and P. Excell; Multilingual website usability analysis based on an International user survey. arXiv preprint arXiv:1708.05085 2017.
- [19] Seckler, M., S. Heinz, S. Forde, A.N. Tuch, and K. Opwis; Trust and distrust on the web: User experiences and website characteristics. Computers in Human Behavior 2015, 45: p. 39-50.

- [20] Kosinski, M., Y. Bachrach, P. Kohli, D. Stillwell, and T. Graepel; Manifestations of user personality in website choice and behaviour on online social networks. Machine learning 2014, 95, (3): p. 357-380.
- [21] Horning, M.A.; Interacting with news: Exploring the effects of modality and perceived responsiveness and control on news source credibility and enjoyment among second screen viewers. Computers in Human Behavior 2017, 73: p. 273-283.
- [22] Vamsi Krishna Jasti, N. and R. Kodali; A literature review of empirical research methodology in lean manufacturing. International Journal of Operations & Production Management 2014, 34, (8): p. 1080-1122.
- [23] Bentley, F.R., N. Daskalova, and B. White; Comparing the reliability of Amazon Mechanical Turk and Survey Monkey to traditional market research surveys. In Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems. 2017; ACM.
- [24] Dillman, D.A.; Mail and telephone surveys: The total design method. Wiley New York, 1978