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Virtual Reality: The Game Changer for Residential Real Estate Staging through Increased Presence

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Abstract

This study proposes a series of 3 experiments to explore how different types of staging, pictures versus virtual reality, impacts potential buyers' likelihood of wanting to visit a home. Moreover, this study seeks to address how the type of market, hot versus cold, and type of home, luxury versus non-luxury, connects with staging and its impact on wanting to visit a home. In Experiment 1, participants will view 10 total homes, 5 randomly selected with staged pictures first followed by the remaining 5 with virtual reality, either within the hot or cold market. If VR increases presence, then people should be more likely to want to visit a house especially in a hot market given that there is a high demand for a constrained supply. Experiment 2 addressed the contrast effect limitation given that virtual reality staging always came after the pictures of staging within Experiment 1. Experiment 2 should replicate the results of Experiment 1 by removing the contrast effect. Finally, Experiment 3 will explore the impact of type of home, luxury versus non-luxury, and type of staging on wanting to visit a home. Researchers are expected to find that participants who viewed properties in virtual reality are more likely to want to visit the home compared to those that saw staged images because of increased presence, which will make them feel more connected to the home compared to viewing staged pictures. Ultimately, this study is important because it aims to identify the utility of VR in home sales.

Keywords: Virtual Reality, Staging, Single Family Homes, Luxury, Real Estate, Type of Market.

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Real estate has always been a passion of mine since the time I found my dad his house at the age of 13. I am so happy that I could culminate my undergraduate education writing on a topic that has always been of interest to me.

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Virtual Reality: The Game Changer for Residential Real Estate Staging through Increased Presence

Residential real estate agents core job is to help sellers get the highest sale price possible in the shortest amount of time. Many realtors and homeowners view staging a home with furniture and decorations as a core part of the sale process given that it can help increase prospective buyers' impressions of the home (Estrin, 2014; Lane, Seiler, & Seiler, 2015). Realtors are starting to embrace technological advancements such as virtual reality in staging. Virtual reality (VR) has been used in numerous other domains, but is increasingly being utilized in the real estate space as a tool to help prospective homebuyers tour homes and imagine themselves in them (HouseLens, 2016). VR can be defined as "the computer-generated simulation of three-dimensional images of an environment or sequence of events that someone using special electronic equipment may view, as on a video screen, and interact with in a seemingly physical way" (Kim, Wang, Love, Li, & Kang, 2013, p. 279). In the domain of real estate, virtual property tours using VR techniques can increase presence by helping people feel immersed at a conscious level in a virtual environment (VE) (Lane et al., 2015; Witmer & Singer, 1998) . Consequently, VR is beginning to disrupt real estate industry as we know it because it is opening the door for technology companies to create VR viewings of homes that will enable prospective buyers' all over the world to feel as if they actually were physically viewing a property. Many of these companies such as HouseLens and Matterport are utilizing VR to harness the power of visual marketing, which has already in its infancy led to quicker sale times and higher sale prices (HouseLens, 2016; Matterport, 2016).

Although staging does not appear to impact the sale price of the home, agents, homebuyers, and homeowners all incorrectly believe that staging will indeed increase the price of a home (Lane et al., 2015). This discrepancy gets at the difference in stated preferences versus revealed preferences because people think that they might pay more for a properly staged home and less for a poorly staged home, however they would actually pay the same price for a home (Lane et al., 2015). Even though staging does not impact sale price, it increases prospective homebuyers' impression of a home and ability to visualize themselves within that home ("2015 Profile of Home Staging," 2015; Lane et al., 2015). The goal of the current proposed study is to underscore the important role that VR can play in the home sale process. Given that there is minimal academic research discussing the impact of virtual walkthroughs on residential real estate, the goal of this proposed study aims to identify the utility of VR in home sales (Lane et al., 2015; Zanjani, Hilscher, & Cupchik, 2016).

Role of Staging

Staging plays an important role in residential real estate because staging can help increase prospective buyers' impressions of the home (Lane et al., 2015). Lane's study surveyed 820 homebuyers and was comprised of a 3x2 between-subjects experimental design in which there were three variations of virtual staging ranging from fully furnished home to empty home, and two types of wall color, purple and neutral (Lane et al., 2015). Although staging does not appear to result in a higher selling price according to Lane et al. (2015), both real estate agents and homebuyers falsely believe that proper staging conditions will lead to higher price valuations. This false belief gets at the difference between stated and revealed conscious preferences. In a follow up to Lane's experiment, homeowners thought other homeowners would pay more for a

properly staged home and a lot less for a home with unattractive paint colors and no staging (Lane et al., 2015) . The difference in homeowners' views of staging versus no staging is relevant because there is a discrepancy between stated and revealed preferences as people falsely believe that they would pay less for a poorly staged home, when it actuality they would pay the same price (Lane et al., 2015, p. 23). Lane's experiment did find that prospective homebuyers had more positive impressions of the home when they saw properly staged homes with neutral wall colors (Lane et al., 2015).

Although Lane et al. (2015) did not show staging had an effect on the bottom line regarding sale price, the Real Estate Staging Association (RESA) emphasized that 52% of buyers' agents as well as 67% of sellers' agents believe staging homes increases the dollar value buyers are willing to offer ("2015 Profile of Home Staging," 2015). Based on a study by RESA, homes that were staged before listing sold 87% faster, averaging 26 days on the market compared to 198 total days (Real Estate Staging Association, 2012). This reduction in time on market likely explains why many sellers perceive staging as a means to decrease time on market and increase appeal. Although the majority of buyers' and sellers' agents have a misconception about the impact of staging on sale price, many people still continue to utilize staging for its other benefits outside of sale price such as decreased time on market. Many brokers believe staging increases the ability to close the sale quickly, which does add value.

Staging is a more cost effective alternative during the sale process compared to embarking on an expensive renovation (Goldstein, 2016). Goldstein reiterates that many realtors view staging as a tool to help homebuyers envision themselves in a home as well as what they might be able to create in different rooms throughout a home (Goldstein, 2016). Staging can

increase presence because people are more likely to be able to imagine themselves in the home, which may lead people to put an offer in quicker.

The cost of staging can differ depending on the state and square footage of the property, but usually an initial consultation with a written plan can be anywhere from $250 to $750 for an average single family house around 3,000 square feet (Goldstein, 2016). According to RESA, staging a single family home can cost anywhere from $975 to $5,500 per month depending on where the home is located geographically (Goldstein, 2016). Moreover, Estrin emphasizes that many realtors feel that staging can help depersonalize a home, which can help turn potential negatives into positives (Estrin, 2014). Staging can help cover up potential flaws in the home by drawing homebuyers attention to a home's key selling points such as a fireplace, hardwood floors, and exterior curb appeal (Khalfani, 2007). On one hand, some realtors view staging as a way to differentiate a home especially in a cold market with lots of homes on the market (Estrin, 2014). On the other hand, some realtors think that staging is not a necessary expense in hot markets where homes sell quickly (Estrin, 2014). Although staging may not directly impact the sale price of a home, it is apparent that industry professionals view it as a core part of the sale process, but at times also have differing views depending on the type of market.

According to the 2015 Profile of Home Staging (2015), 81% of people surveyed said staging made it easier to visualize the property as a future home and 45% of people thought staging would positively impact home value. Additionally, Connie Brown, a staging professional says that the goal of is staging is for "potential buyers to come in and visualize themselves in the house", which can be done by increasing a home's curb appeal and depersonalizing the home by removing specific items unique to the seller (Khalfani, 2007, p. 97). Overall, there is a continued

debate regarding the effectiveness of staging given the difference in stated versus revealed preferences such as in Lane et al. (2015) study. Nevertheless, staging still remains a key part of the residential real estate industry and is frequently utilized by industry professionals in the sale process.

VR and Role of Presence in Decision Making

Presence is fundamental to the success of VR because without presence a user will not truly embrace a virtual environment (VE). There is no one correct definition of presence, but there is a common view that "presence is the sense of being in a VE rather than the place in which the participant's body is located" (Sanchez-Vives & Slater, 2005). Witmer and Singer (1998) explain that two psychological states are necessary in order to achieve presence. Involvement represents the "psychological state experienced as a consequence of focusing one's energy and attention on a coherent set of stimuli or meaningfully related activities and events" whereas immersion is a "psychological state characterized by perceiving oneself to be enveloped by, included in, and interacting with an environment that provides a continuous stream of stimuli and experiences" (Witmer & Singer, 1998, p. 227). There is an interesting relationship with involvement and presence given that as someone focuses more attention on the VE, they become more involved within it and ultimately have a higher presence in that VE (Witmer & Singer, 1998). Additionally, an increased state of immersion leads to higher sense of presence in the VE (Witmer & Singer, 1998). If a VE can isolate the user from their physical environment it will increase the amount of immersion the user will feel in the VE (Witmer & Singer, 1998, p. 227). Essentially, the goal of VE's is to immerse people in a virtual simulated environment, which explains why VE's have the ability to produce presence (Witmer & Singer, 1998, p. 227). There

are a wide range of VR platforms that will be discussed later, but a helmet-mounted display (HMD) – think headset, is integral for the immersive experience that VE's are supposed to provide.

Presence is fundamental for a user to feel emotions in a virtual environment. Riva et al. (2007) had participants view three different virtual parks each with a different design in order to determine the role of emotions and presence in VR. The researchers used a repeated measures design as participants saw all three parks: one park design was relaxing, the second was anxiety provoking, and the last was neutral (Riva et al., 2007). The researchers concluded that VR is an "affective medium" because VR has the ability to create presence in a "computer-generated world" such as in the virtual parks (Riva et al., 2007, p. 46). Moreover, Riva et al., (2007) determined that both presence and emotion influence one another. Emotions are determined by level of presence (for instance, emotions will be weaker with less presence) and more presence will be seen in emotional virtual situations (Riva et al., 2007). Sanchez-Vives and Slater (2005) emphasize that immersion in a VE entails one's consciousness transferring over to that virtual environment so someone can feel and responds to events like they are truly in that virtual world. In the area of real estate, homebuyers can navigate walking from room to room creating a more intimate experience viewing a property than they would by viewing pictures of the same property.

Point of view is pivotal to immersion in VE because point of view can impact how realistic the VE is. Research by Kallinen, Salminen, Ravaja, Kedzior, & Sääksjärvi (2007) illustrates that the 1st person view led subjects to feel more immersed in the video game compared to the 3rd person view. The results of this study concluded that there was more

cognitive involvement and spatial awareness, which is relevant because it supports the notion that 1st person view generates more presence than 3rd person view (Kallinen et al., 2007). Point of view is relevant to VR because people who utilize HMD's such as Facebook's Oculus Rift will have a more immersive experience and in turn feel more present.

VR has gained momentum and established credibility in several different areas. An example of this is from its use in clinical studies. There have been several studies that have looked at VR's impact on phobias such as acrophobia (fear of heights) as well as fear of flying. For instance, Hodges et al. (1995) utilized graded exposure therapy in a VE within three different environments: an elevator, a series of balconies, and a series of bridges. Participants showed acrophobic symptoms in the VE and in turn higher degree of presence, which is relevant because people can now use virtual reality exposure (VRE) as an alternative to classical behavioral therapies in order to help reduce anxiety around fear of heights (Hodges et al., 1995). VRE is different from other types of therapies in that it exposes someone to a potential fear in a computer-generated world rather than in real life (Maltby, Kirsch, Mayers, & Allen, 2002). In another study by Maltby et al. (2002), researchers found that subjects in the VRE group had significantly greater improvement in many aspects of anxiety toward flying compared to the control group. VRE has been shown to also work in addressing post-traumatic stress disorder (PTSD) and pain distraction (Difede & Hoffman, 2002; Gershon, Zimand, Pickering, Rothbaum, & Hodges, 2004). Overall, VRE has become an effective technique in addressing phobias.

VR also has gained momentum because of the significant impact it has on users' decision making and moral judgement. Slater et al. (2006) attempted to recreate Stanley Milgram's 1960's study that observed participants' willingness to follow instructions and electrically shock

a stranger (Slater et al., 2006). Given that Milgram's study could not be done today in real life for ethical reasons, these researchers used a similar model to Milgram's, but in a virtual world (Slater et al., 2006). The key conclusion from the study is that humans will tend to respond realistically in a VE, which ties back into immersion and presence role in enabling a VE to replicate a real world situation (Slater et al., 2006). Additionally, Skulmowski, Bunge, Kaspar, & Pipa (2014) addressed the trolley dilemma, which has been utilized to analyze decision-making and moral judgment. These researchers found that people reacted with similar thoughts and emotions to the virtual environment scenario further proving the effectiveness of VR (Skulmowski et al., 2014). VR has enabled researchers to conduct experiments that would otherwise be deemed ethically unacceptable in non-VR environments. Both of these studies show that participants' behavioral and physiological responses in the VR setting mimic their behavior in a real world setting.

The effects of VR may also influence presence in the context of real estate. For example, if a person views a property in the 1st person using a headset such as the Oculus Rift, he or she will be more present and immersed in the VE and in turn will view the virtual walkthrough of the property as feeling more real than simply viewing pictures of that same property on a real estate website . Alternatively, seeing pictures of a property on a real estate website may not cause the same presence and immersion in that property. The experiments in this study attempt to address the role of virtual reality on single-family home staging and its impact on potential buyers' likelihood of wanting to visit a home.

Characteristics People Look for in a Home (Luxury vs. Non-Luxury)

There have been several studies that have analyzed what people desire in a home as well as how the layout of a home can impact a potential buyer. There is substantial agreement in regards to the expressive qualities of a home, which include characteristics such as privacy, safety, personalization, and freedom to name a few (Lane et al., 2015; Zanjani et al., 2016).

Understanding what homebuyers look for in the United States today is critical because there is a growing difference in the wants of young technology oriented buyers versus older buyers. According to a recent survey by Better Homes & Gardens Real Estate, 77% of Gen X and Gen Y homebuyers want technology immersed within their home (Zillow, 2013). People are desiring smart homes with more automation, larger closets, home offices, hardwood floors (Zillow, 2013). Moreover, according to the National Association of Home Builders' 2016 Housing preferences Across Generations report, 92% of homebuyers want a laundry room, 90% wanted exterior lighting (the most wanted outdoor feature), 90% want energy efficient appliances, 82% want hardwood floors, and 81% would like garage storage space. Clearly, not all homebuyers depending on their budget can afford all of these features, but that is what begins to differentiate luxury from non-luxury homes (Taylor, 2016).

Christie's International Real Estate stated that based on 80 prestige real estate markets, "the average starting price for a luxury home across all markets is around $2 million, ranging to $750,000 in markets such as Durban in South Africa, and an astounding $8 million in Beverly Hills" (Christie's International Real Estate, 2015b). According to Sid Ford Real Estate, an affiliate of Christie's, luxury homes tend to be in desirable locations and have characteristics such as great views and security (Sid Ford, 2014). Additionally, Sid Ford emphasizes that 39%

of homebuyers prioritize floor plan when looking at a luxury home, while 32% of them wanted a fully-automated home environment (Sid Ford, 2014). Christie's International Real Estate underscores different qualities that define luxury such as experiential, ultimate privacy, collectible, and turnkey-ready to name a few (Christie's International Real Estate, 2015a). Moreover, a lot of online real estate marketplaces view curb appeal as just one of many factors that people look for in luxury homes (Sherman, 2014). Nick Segal, President and Founding partner of Los Angeles brokerage Partners Trust, stated that "luxury is lifestyle" and that there is a move toward "de-mansionization", which entails building vertically at times rather than sprawled out over lots of land with open space (Sherman, 2014). Overall, the definition of luxury homes already started changing based on the wants and needs of a new generation of homebuyers and will continue to change in the future. These two categories of homes are first and foremost distinguished by price and then secondarily by types of amenities and technology.

The Role of Hot Versus Cold Market

The type of market is relevant to VR because a hot market appears to change the role that VR plays in staging because "serious buyers are often willing to pay more than list price", underscoring the importance of VR staging in regards to buyer's overall impression of the home and its livability (Lane et al., 2015; Weintraub, 2016, para. 4). Moreover, the type of market appears to influence staging as some realtors do not always view staging as necessary within a hot market while others feel that staging in a cold market can help a home sell quicker by standing out from other listings (Goldstein, 2016). The type of market appears to play an integral role in helping determine when to utilize staging.

The real estate market as a whole is often metaphorically referred to temperature as either being hot or cold (Local Agent Finder, 2015). On one hand, a cold real estate market will favor buyers because there are a higher numbers of homes on the market compared to prior years, listing prices are lower than previous sale prices, and average house prices are falling (Local Agent Finder, 2015). On the other hand, Elizabeth Weintraub, a top real estate broker in Sacramento, CA, emphasizes that a hot market is defined through rising average home prices, higher listing prices compared to prior sales, quicker home sales (decreased time on market), and higher volume of home sales compared to the average (Weintraub, 2016). Trulia, an online residential real estate website, further defines a hot market as "one where most homes sell faster than two months" (Agadoni, 2016). Specifically, homes in hot markets such as Denver and San Jose are selling in 25 and 18 days respectively (Agadoni, 2016). Trulia views inventory as a major part of a hot market because fewer (Agadoni, 2016) homes on the market increases demand and in turn homes will sell quicker . An example of a hot market would be San Francisco, CA versus Pomona, CA, which would represent a cold market.

The United States overall is currently in the midst of a hot market overall. A housing market with six months of supply is viewed as neutral between buyers and sellers (Weintraub, 2016). In turn, the fewer months of supply favors sellers in turn creating a lot more competition amongst buyers and conversely more months of unsold supply favors buyers (Starace, 2016). According to the National Association of Realtors, pending sales of existing homes are at a 9-year high and sales of new homes are at a 7-year high (Esswein, 2015). According to the U.S. Census Bureau, the United States averaged around 5.5 months of inventory for 12-month period ending March 2016 (Nerd Wallet, 2016). Some of today's hottest markets are San Francisco and

San Diego, which have around two to three months of unsold inventory (Nerd Wallet, 2016). Hot markets may not always require staging, however staging in cold markets can differentiate a home from other unsold listings (Estrin, 2014). Overall, the type of market can play a critical role in determining when it is most effective to use staging.

What is VR

Virtual reality is "the computer-generated simulation of three-dimensional images of an environment or sequence of events that someone using special electronic equipment may view, as on a video screen, and interact with in a seemingly physical way" (Kim, Wang, Love, Li, & Kang, 2013, p. 279). Additionally, virtual reality can also be defined as a system that people can interact with in real time (Kim et al., 2013). Fundamentally, there are a variety of VR devices and each can be used to create different virtual realities with various purposes and capabilities (Kim et al., 2013). The complexity and capability of VR depends on the hardware and software systems, but every system needs at least a feedback display and an interactive device like a headset (Kim et al., 2013).

VR's Use Cases (Development)

Although VR has many different use cases, this paper focuses on VR's impact on real estate and more specifically with regards to the staging and sale process of single family homes. Even though this paper focuses on VR's impact on selling single-family homes, it is important to acknowledge VR's huge influence on real estate development (Oksman, 2016). VR has let developers virtually design and create single-family homes, apartment buildings and large commercial properties. VR not only lets developers better visualize and plan construction, but also showcases their properties to potential buyers, receive early offers and make changes before

the construction begins. For example, one company, ArX Solutions, creates virtual designs of apartment buildings before developers even begin construction (Oksman, 2016). Nonetheless, VR has begun to transform the entire real estate market and process of selling properties.

VR Categories

VR's impact breaks down into two categories: VR videos and models without a headset and then VR as an immersive experience with a headset. Before analyzing what each impact is, it is important to understand how VR works generally. Fundamentally, one must film a property with 360-degree-cameras (Foster, 2016). After filming the property, the files must be converted to VR and then appropriately used for videos, models, or a fully immersive experience with a headset (Foster, 2016). Some real estate companies buy the necessary cameras to film themselves, whereas others use companies like Matterport, a company with their own trained photographers (Foster, 2016). Even though the experiments in this paper focus on the role that a VR headset has in regards to staging and likelihood of visiting a home, it is important to also identify and explain VR's additional factors to understand the big picture.

Non-Headset VR: 360 Degree Videos and 3D Models

VR 360 degree videos and 3D models are the two methods real estate companies and agents use to sell a property without an actual VR headset. A 360-degree video tour is essentially comparable to a guided property tour through a home. The buyers can go on a website and watch the video that takes them through the property (Looking Glass, 2015). A 3D model is like a self-guided tour where buyers interact with the model and click to travel through the property (Looking Glass, 2015). These 3D models have floor plans and a dollhouse view so buyers can see the entire property and floor plan in one image (Looking Glass, 2015). HouseLens is one

company that specializes in both 360 video tours as well as 3D and 2D interactive models. Through their products, HouseLens strives to "help real estate agents and brokers harness the power of visual marketing to win more listings, sell homes faster, attract better-quality leads and grow their businesses" (HouseLens, 2016b). More specifically though, HouseLens believes that through their video tours, real estate agents can practically have 24/7 open houses without any extra effort and let buyers experience the real layout of the property (HouseLens, 2016c). Finally, HouseLens' 3D models let buyers take the initiative to look at properties at their own leisure, which saves everyone time and money (HouseLens, 2016a). HouseLens is one of several major players in the VR real estate space, but it is important to highlight their objective in order to understand what these types of companies are doing. This company along with the VR real estate industry as a whole is disrupting real estate as the world knows it today.

VR Headsets: Main Impact and Key Players

Although these other VR capabilities help real estate agents, VR's main impact is through its headsets. Many major technology companies have worked rapidly to produce their own VR headsets. Between Samsung's Gear VR, Microsoft' HoloLens, Google's VR cardboard boxes, LG's 360 VR, and Facebook's Oculus Rift, the race to produce VR headsets continues. Although each company produces headsets, each VR headset is specialized in their own ways (Gajsek, 2016). Each one of these headsets essentially have different capabilities given that some are more expensive and higher quality while others are lower quality and cheaper. In terms of real estate, VR headsets provide a fully immersive experience for potential buyers of properties. Companies like Google want to put VR into as many hands as possible and have their users

download their VR app and use it with their own cheaper cardboard headsets (Gajsek, 2016; Start VR, 2015).

For example, Common Floor Retina, another VR real estate company, has their own cardboard headsets that can be combined with their mobile application to let potential buyers experience property from the comfort of their own homes ("CommonFloor Virtual Reality," n.d.). Some real estate companies actually want potential buyers to come to their office and use their most advanced headsets to view properties in this immersive experience. For instance, Sotheby's International Realty in Los Angeles utilizes VR by letting potential buyers tour multimillion-dollar properties with their company-owned Samsung Gear VR headset (Tracey, 2016). Matthew Hood, an employee of the company, explained how his clients seamlessly view $6.95 million ocean-side Malibu property in 3-D through his VR headset and have a completely immersive experience (Tracey, 2016). According to Start VR CEO, Kain Tietzel, regardless of what type of headset, the power of VR is that "it's emotional" and engaging first-hand experience (Start VR, 2015, para. 14). VR headset users are able to feel and react to their potential new home in a way comparable to visiting the home (Start VR, 2015). Without a doubt, Tietzel believes that VR increases sales as it gives buyers more confidence in their purchases (Start VR, 2015, para. 14). VR headsets provide the user a first person point of view that enables the user to feel more present and immersed compared to other mediums such as non-headset VR (Kallinen et al., 2007).

Experiment 1

VR can increase immersion and has been used in numerous other psychological domains (Sanchez-Vives & Slater, 2005). Experiment 1 sets out to determine whether VR can change

people's cognitions about home buying by increasing a participant's desire to go see a home more so than when viewing another medium such as pictures of staging. Generally, staging can increase appeal of a home and decrease the time on market (Real Estate Staging Association, 2012). Staging also makes prospective buyers visualize the property as a future home more easily, which can also lead to decreased time on market (Estrin, 2014). This experiment utilizes two independent variables: type of staging, VR versus pictures, and type of market, hot versus cold, as well as one dependent variable, desire to go see the home on a 0-100 ratio measure scale. Participants will view 10 total homes, in which they will first see 5 homes with picture staging followed by 5 homes with VR staging. Participants will view a home in a hot or cold market because in order to help determine the impact that type of market may have on a prospective real estate buyer. Given a hot market, which has a constrained supply and high demand, VR staging could lead to an even stronger desire to want to go see the home compared to the cold market. Within a hot market, the scarcity effect might obviate looking at the house overall while VR creates immersion and further reduces the need to see the home (Worchel, Lee, & Adewole, 1975). Staging may not be necessary in a hot market given that homes sell quicker (Estrin, 2014). This experiment attempts to address the impact of market type and role of staging on likelihood of wanting to visit a home.

Method

Participants. The experiment will recruit 60 individuals from the greater Los Angeles area for this study. Quota sampling will be used to select these individuals from the American Housing Survey. The study will be conducted in a real estate office in which participants will also view a fake real estate website with phony property listings.

Materials. The experiment will take place in a 15' by 15' room that will have a 30" by 72" rectangular table with two office chairs. The room will contain a 21.5-inch iMac located on the rectangular table. The researcher will act as a real estate agent and in turn will show participants a fake website that will contain 10 properties. Each property will have both a staged virtual reality tour as well as pictures of the staged home. The researcher will have an Oculus virtual reality headset in his office that participants will use to view the staged virtual properties. The real estate agent will reiterate that the 10 homes on the website are all within a certain price range of $350,000 to $650,000 and all have 3 beds, 2.5 bathrooms, and are between 1500 to 2250 square feet. For the purposes of the fake website, the prices that were listed for the houses were adjusted for that market (hot or cold). Additionally, a hot market will be defined through rising prices, quicker home sales (decreased time on market), and higher volume of home sales than average (Krainer, 2001; Weintraub, 2016). An example of a hot market would be Highland Park, Ca versus Pomona, Ca which would represent a cold market. In a cold market, the situation is reversed as prices tend to be declining, fewer home sales compared to the average, and homes sit on the market longer (Krainer, 2001; Weintraub, 2016).

Design. This experiment is a 2x2 mixed design. The presentation of staging has two levels, virtual reality and pictures, and is within subjects. Participants will view 10 total homes randomly selected for which 5 will be seen first with pictures and then the remaining 5 with virtual reality. The type of market has two levels, hot and cold, and is between subjects. The 10 homes viewed in the experiment will be the same in both the hot and cold markets. The dependent variable is measured with a 0 to 100 ratio scale with 0 meaning "no chance" to 100 meaning "definitely" wanting to view the property physically.

Procedure. Following recruitment, the participant will enter the room as the researcher acting as a real estate agent greets him or her. The participant will sit in an office chair directly facing the real estate agent who will instruct the participant to view the made-up website. The real estate agent will tell the participant to go through the houses on the desktop, while the agent takes a call, which will require stepping out of the office and allowing the participant to view the properties on the website independently during the fictitious phone call. Each property will have both a staged virtual reality tour as well as photographs of the staged home. The participant will first view 5 randomly selected properties with photographs and then the remaining 5 properties with virtual reality utilizing the Oculus headset. The participant will either be viewing these 10 properties within either the hot market or the cold market depending on what group she or he is in. That said the 10 houses would remain the same in both markets. The website has an option for the rating after viewing the property which participants will answer after viewing each property. After the participant completes the tour of all the properties on the desktop and submits the final rating of the final property the participant has completed the experiment.

Results

All statistical tests will use a Type I error rate of .05. Primary statistical analyses will examine differences for dependent variable for the 2 (staging: virtual reality and photographs) x 2 (type of market: hot and cold) mixed design. The dependent variable, desire to go physically view the home, will be measured using a ratio scale measure of 0 to 100 with 0 meaning "no chance" and 100 meaning "yes chance".

A 2 x 2 mixed-model ANOVA will analyze staging type (virtual reality and photographs) and type of market (hot and cold) and the effect on likelihood to go view the home. If VR

increases a participant's presence leading to a better impression of the home and its livability, then there may be a main effect of staging such that people who view virtual reality staging will be more likely to want to see the home compared to those that saw pictures of staging. Based on what defines a hot market: rising prices, quicker home sales (decreased time on market), and higher volume of home sales than average**,** there will also be another expected significant result, which is a main effect of type of market such that people who are told it is a hot market will be more likely to want to see the home than those who are told it is a cold market (Krainer, 2001; Weintraub, 2016). An interaction between staging and type of market is expected such that VR staging relative to picture staging will increase desire to see a house more in a hot market.

These results are shown in Figure 1, which highlight both main effects that VR is greater than pictures of staging in both markets as well as that the hot market leads to stronger desire to see home compared to cold market no matter what the medium is. VR may increase immersion, which may lead participants to feel more connected and present especially given the first person point of view within a HMD (Kallinen et al., 2007). An interaction is seen as well in Figure 1 given that VR increases desire to see the house more in the hot market, where prices are rising and homes are on the market for shorter periods of time. In turn, participants may provide higher ratings for the homes in the hot market, which they will view as more attractive, given that there is limited supply, but increased demand (Verhallen & Robben, 1994).

Given the constrained supply in a hot market, different results could occur do to a scarcity effect (See Figure 2). According to Worchel et al. (1975), scarcity will increase the perceived value of a product because it is highly demanded with limited supply. Essentially, scarcity obviates looking at the house overall, but that VR creates immersion and reduces the

need to see the house within the hot market. The scarcity effect leads people to think the they do not have time to visit the home in a hot market and need to put an offer in immediately given that there is a high demand for a reduced supply (Worchel et al., 1975). Moreover, pictures of staging do not create the same level of immersion within VR, therefore participants have a stronger desire to see the home to verify it is to their liking. It is worth noting that these results in Figures 1 and 2 could be statistically significant based on the order that participants viewed the properties.

Discussion

Experiment 1 attempts to address the roles that market type and staging have on a participant's desire to go physically see the home. Essentially, participants saw the staged photographs first before viewing the other five properties with virtual reality. A contrast effect can occur when an anchored stimuli, such as a heavy weight, is presented immediately before the other stimuli, a light weight, which will lead a person to view the lighter weight as lighter than it actually is (Plous, 1993; Sherif, Taub, & Hovland, 1958). There could be a contrast effect in this study given that the virtual reality always came last and is more stimulating and realistic to the participant (Plous, 1993; Sherif et al., 1958). Additionally, Sanchez Vives and Slater (2005) emphasize the importance of presence in regards to virtual environments because people can feel immersed in a VE even though their physical body is not located there (Sanchez-Vives & Slater, 2005). Experiment 1 highlights that VR staging compared to picture staging leads to increased likelihood of wanting to see the home regardless of market type. However, a key limitation of this study is that it could be potentially confounded.

Therefore, Experiment 2 attempts to address this limitation by controlling for the confound effect on staging and will in turn enable us to determine whether or not the role of VR is truly statistically significant when it is intermixed with photographs of staged properties.

Experiment 2

Methods

Participants. Experiment 2 will apply the same criteria used for finding participants in Experiment 1.

Materials. Experiment 2 will use the same materials used in Experiment 1. The only key difference will be that type of staging will now become between-subjects. In turn, participants will either view 5 properties with VR staging or 5 properties with pictures of staging.

Design. This experiment is a 2x2 mixed design. The presentation of staging has two levels, virtual reality and pictures, and is between subjects. Participants will view only 5 homes, either 5 in VR or 5 with pictures. The type of market has two levels, hot and cold, and is between subjects. The 10 homes viewed in the experiment will be the same in both the hot and cold markets. The dependent variable is measured with a 0 to 100 ratio scale with 0 meaning "no chance" to 100 meaning "definitely" wanting to view the property physically.

Procedure. The participant will enter the room as the researcher acting as a real estate agent greets him or her. The participant will sit in an office chair directly facing the real estate agent who will instruct the participant to view the made-up website. The real estate agent will tell the participant to go through the houses on the desktop, while the agent takes a call, which will require stepping out of the office and allowing the participant to view the properties on the website independently during the fictitious phone call. Each property will have both a staged

virtual reality tour as well as photographs of the staged home. Participants then will only see 5 homes (either 5 in VR or 5 with photographs), as this is the only way to truly eliminate the contrast effect on type of staging. The participants viewing the homes in VR will use the Oculus headset. The participant will view these 5 properties within either the hot market or the cold market depending on what group she or he is in. That said the 10 houses would remain the same in both markets. The website has an option for the rating after viewing the property. The participant will in turn rate each property after viewing it. After the participant completes the tour of all the properties on the desktop and submits the final rating of the final property the participant has completed experiment.

Results

All statistical tests will use a Type 1 error rate of .05. Primary statistical analyses will examine differences for dependent variable for the 2 (staging: virtual reality and photographs) x 2 (type of market: hot and cold) between-subjects design. The dependent variable, desire of going to physically view the home, will be measured using a ratio scale measure of 0 to 100 with 0 meaning "no chance" and 100 meaning "yes chance".

A between-subjects 2x2 ANOVA will be used to analyze staging type (virtual reality and photographs) and type of market (hot and cold) and the effect on likelihood to go view the home. It is important to note that the only impact that the contrast effect could have is on staging in Experiment 1. Therefore, if the difference still exists between VR staging and picture staging after removing the confound, it will become apparent in Experiment 2 that this difference can be attributed solely to VR rather than the order of which the properties were presented. In turn, Experiment 2 should have the same exact results as Experiment 1. If VR increases participants

presence leading to a better impression of the home and its livability, then there may be a main effect of staging such that people who view virtual reality staging will be more likely to want to see the home compared to those that saw pictures. Therefore, assuming the contrast effect did not matter with regards to staging, the results from either Figure 1 or 2 would hold. In turn, the same pattern of data would hold, which would show there is a general effect of VR staging no matter which order the properties are presented. However, if the contrast effect did matter it is possible that the differences could be bigger or smaller. The order of the pictures first followed by VR could make the VR staging even more appealing given the increased immersion one has with this medium (Riva et al., 2007).

Discussion

This experiment builds off of Experiment 1 as it seeks to remove the contrast effect by randomizing the type of staging. Assuming the contrast effect does not matter, the role of VR is truly statistically significant when it is randomly intermixed with photographs of staged properties. Therefore, one can conclude that VR staging is effective in increasing the likelihood that a prospective buyer visits an open house. The results from this experiment highlight the general effect of VR staging as well as the role of type of market.

Experiment 3

This experiment expands upon the first two experiments because it no longer deals with the type of market, but attempts to further the study by seeing if the type of staging has a greater impact on luxury versus non-luxury homes in regards to people wanting to go visit the home. VR has predominantly been used in the luxury home market due the cost of it, however it is just starting to become more mainstream with cheaper VR alternatives. In turn, it is important to

determine if VR staging is more beneficial in luxury homes versus non-luxury homes because otherwise homeowners might be spending unnecessary money on VR that they do not need to incur. Given that luxury homes are quite expensive, people may want to see the home regardless of the staging medium, which has major implications for the use of VR in the luxury home market. Additionally, VR can also lead to more immersion compared to pictures, which might contribute to more sight unseen purchases (South, 2016). Kozhevnikov (n.d.) has shown through her research that visualization ability is better with the use of headsets in VR rather than 2D or non-immersive 3D VR environments. Therefore, VR staging could be more relevant to non-luxury homes when compared to picture staging because buyers are more likely to imagine themselves in the home given increased immersion (Witmer & Singer, 1998). This experiment is relevant because homeowners and agents need to understand when to use VR. This final experiment will address the role of VR and type of home on increasing one's likelihood of wanting to visit the home.

Method

Participants. Experiment 3 will apply the same criteria used for finding participants in Experiment 1.

Materials. Experiment 3 will use the same materials used in Experiment 1. The only key difference will be that the IV, type of market (hot or cold), will be replaced by type of home (luxury or non-luxury). Similar to Experiment 2, type of staging will still manipulated between-subjects. In turn, participants will either view 5 properties with VR staging or 5 properties with photographs of staging. The participants viewing the homes in VR will use the Oculus headset.

Design. This experiment is a 2x2 mixed design. The presentation of staging has two levels, virtual reality and pictures, and is between subjects. Participants will view only 5 homes, either 5 in VR or 5 with pictures. The type of house has two levels, luxury and non-luxury, and is between subjects. The 10 homes viewed in the experiment will be the same in both the hot and cold markets. The dependent variable is measured with a 0 to 100 ratio scale with 0 meaning "no chance" to 100 meaning "definitely" wanting to view the property physically.

Procedure. The participant will enter the room as the researcher acting as a real estate agent greets him or her. The participant will sit in an office chair directly facing the real estate agent who will instruct the participant to view the made-up website. The real estate agent will tell the participant to go through the houses on the desktop, while the agent takes a call, which will require stepping out of the office and allowing the participant to view the properties on the website independently during the fictitious phone call. Each property will have both a staged virtual reality tour as well as photographs of the staged home. Participants then will only see 5 homes (either 5 in VR or 5 with photographs), given that this is the only way to truly eliminate the contrast effect on type of staging. The participants viewing the homes in VR will use the Oculus headset. The participant will either be viewing these 5 properties within the luxury home context or the non-luxury market context depending on what group she or he is in. The website has an option for the rating after viewing the property. The participant will in turn rate each property after viewing it. After the participant completes the tour of all the properties on the desktop and submits the final rating of the final property the participant has completed experiment.

Results

All statistical tests will use a Type 1 error rate of .05. Primary statistical analyses will examine differences for dependent variable for the 2 (staging: virtual reality and photographs) x 2 (type of house: luxury and non-luxury) between-subjects design. The dependent variable, desire of going to physically view the home, will be measured using a ratio scale measure of 0 to 100 with 0 meaning "no chance" and 100 meaning "yes chance".

A between-subjects 2x2 ANOVA will be used to analyze staging type (virtual reality and photographs) and type of house (luxury and non-luxury) and the effect on desire to go view the home. If VR increases participants presence and desirability of the home then there may be a main effect of staging that is presumably statistically significant such that people who view virtual reality staging will want to see homes more so than those who saw staged photographs regardless of type of home. Based on what defines a luxury home: strong curb appeal, great views, high security, increased technology throughout the home (smart home), there will also be another expected significant result, which is a main effect such that people who view luxury homes will be more likely to want to see those homes than those who view non-luxury homes. Given that luxury homes on average are priced around $2 million, there might be a stronger desire to want to see the home because of its cost as well as its allure and prestige (Christie's International Real Estate, 2015b). These results can be seen in Figure 3. The interaction between staging and type of home is expected such that the difference in staging, VR versus photographs, will be significantly greater in the non-luxury homes. People in the luxury home market will have the desire to want to see the home regardless of the staging medium because there is greater financial cost and allure. It is possible then that VR may not matter as much in the luxury homes in comparison to the non-luxury homes.

A different set of results could occur, which can be seen in Figure 4. If VR leads to more immersion, it is possible that prospective buyers would not be as likely to want to go visit the luxury home. Additionally, given that pictures do not create immersion, one would want to go view the luxury house especially given the financial impact of buying it. In the context of non-luxury homes, VR staging relative to picture staging would motivate potential homebuyers to visit the home because they are more likely to be able to imagine themselves in it given increased immersion (Witmer & Singer, 1998; "2015 Profile of Home Staging", 2015).

Discussion

This final experiment attempted to further the study by seeing if the type of staging has a greater impact on luxury versus non-luxury homes in regards to people wanting to physically go view the house. It is important to recognize that people within the luxury and non-luxury markets have different desires for what they want and can afford in a home (Taylor, 2016). Additionally, the role of staging within a non-luxury home could potentially persuade prospective buyers to visit the home more when compared to luxury homes. So far, VR has been utilized more in luxury homes given the cost. However, VR is beginning to be more mainstream and in turn is starting to be utilized by real estate agents for various different types of homes ranging from non-luxury to luxury.

General Discussion

The experiments in the study highlighted VR's benefits toward residential real estate staging given that participants' had an increased desire to want to go visit the home. Even though staging does not impact the sale price of a home, many realtors, homebuyers, and sellers still view it as an integral part of the sale process because it can help people imagine a property

as a future home and decrease the time on market ("2015 Profile of Home Staging", 2015). Therefore, the use of VR furthers the benefits of staging given that VR leads to increased immersion and presence (Sanchez-Vives & Slater, 2005). Given that people are able to feel present in the VR staged home, they may not even have to visit the open house and in turn could put an offer on the home. Gill South (2016) reiterates that real estate agents are beginning to sell homes sight unseen especially in hot markets with foreign buyers. Additionally, VR can speed up the home sale process because it will increase demand amongst prospective buyers in all types of markets. However, in hot markets, the scarcity effect could play a major role in decreasing the time on market and increasing the amount of offers received (Worchel et al., 1975). Brehm (1972) found that objects become more attractive to consumers when they are deemed as unavailable. Worchel et al. (1975) emphasize that the best way to increase value of a product is to reduce its supply and state that this is caused by popular demand. Moreover, consumer competitiveness and social approval leads people to want popularly demanded scarce products (Verhallen & Robben, 1994). In turn, houses in a hot market could be associated with higher prices given the scarcity effect (Fromkin et al., 1971; Lynn, 1989). Essentially, prospective buyers may be willing to go over the asking price if others are putting in offers as well due to the constrained supply. Within hot markets with high demand and constrained supply, the scarcity effect will only further enhance the role that VR plays in the home sale process.

This study is relevant because it is important to address what VR has to offer in regards to residential real estate. Given that VR costs money, this study identified the utility of VR in home sales compared to more traditional ways to sell homes such as using staged photographs in

online brochures. Decreasing the time on market and maximizing sale price is critical to not only residential real estate, but also to commercial real estate. VR can serve as a platform to accomplish this by allowing prospective buyers to feel more immersed in a property (Lane et al., 2015). Moreover, the type of market and home can influence when it is most effective to utilize VR.

This study has a few apparent limitations. First of all, there is not a lot of academic research currently analyzing the role of virtual reality in residential real estate specifically on staging. Therefore, inferential leaps have been made by looking at other uses of VR and attempting to apply those findings to real estate. The markets selected for this experiment may differ from other hot and cold markets based on what information people weigh in making that decision. Despite the fact that these limitations exist, this study attempts to provide a series of potential experiments that will be influential in analyzing VR's role in home sales across different types of markets and property types.

This study could also be extended in several ways. A future experiment could look at more types of properties such as luxury versus ultra-luxury and apartments versus single-family homes. There could be a different pattern of results for these different types of properties. One could analyze the impact of VR on distance in terms of how far away people are from a property. Essentially, VR might completely reduce the chance of wanting to see a home if someone is very far away from the property, which in turn could lead to more sight unseen purchases (South, 2016). Additionally, one could compare VR staging using a headset to different mediums such as online video walkthroughs of a home and actual in-person walkthroughs to further determine the impact VR has on the residential real estate space. Also, different dependent variables could be

analyzed such as how much would one be willing to pay for a home and likelihood to make an offer. These types of DV's would provide more color to VR's role because they would help determine if VR might lead to increased offer prices.

VR Section

VR headsets will continue to transform the real estate market. Fundamentally, VR headsets have a distinct impact on buyers and real estate agents. Although VR's 360 degree videos and 3D plans have already impacted the real estate market, this paper focuses on the headset's influence motivating consumers to visit the prospective.

VR Impact on Real Estate Buyers

In terms of buyers, VR headsets drastically reduce the time consumers have to spend visiting homes and also provide an advanced solution for foreign buyers. When clients speak with their agents, they can show them various homes through the VR headset and provide them with an experience as if they were actually visiting the home. Through this process, VR actually enables clients to eliminate certain properties and choose ones they are extremely interested, which saves time and increases the likelihood of a purchase (Hah & Shekthman, 2016). It is important to acknowledge that video walkthroughs can also show a property, but it is no way comparable to the immersive experience of VR. With VR, buyers virtually walk through the home, can take their time and have the freedom to truly see the entire property just as if they were there (Champagne, 2016).

For example, Hood at The Matthew Hood Real Estate Group at Sotheby's International Realty, explains how Los Angeles is perfect for VR real estate tours as the traffic can make it take two days to visit a handful of houses (Gaudiosi, 2015). Hood explains how VR will

immensely decrease that time, which is extremely helpful for buyers (Gaudiosi, 2015).

Furthermore, VR headsets are revolutionizing how foreign buyers view property and saving those buyers huge amounts of time and money. Right now, extremely wealthy foreign buyers are investing their money away from their unstable home countries by purchasing a lot of luxurious property in New York and London (Oksman, 2016). Through VR headsets, foreign buyers no longer have to take time off work to travel across the world to view properties (Oksman, 2016). Fundamentally, VR headsets saves both the foreign buyers and real estate agents time and resources and can even add additional appeal as there is a lot of novelty and luxury with the concept of utilizing VR to buy homes (Hah & Shekthman, 2016; Oksman, 2016). Overall, VR headsets will continue to revolutionize how prospective buyers view real estate across the world, which in turn will increase their utility.

VR Impact on Real Estate Agents

VR headsets are transforming how real estate agents work as well as saving them both time and money. Real estate agents no longer have to take and manage thousands of photographs of various homes, but rather manage one file and use VR (Hah & Shekthman, 2016). Furthermore, real estate agents save huge amounts of time both when helping clients buy as well as sell properties. When a client comes in, the real estate agent can quickly show the various properties and save time to work on getting new clients, or selling other homes. In addition, real estate agents can now make homes for sale accessible 24/7 to potential buyers and do not have to prepare for open houses (Hah & Shekthman, 2016). To further that point, agents now do not have to worry about managing so many appointments as buyers want to see the home multiple times to see where their art or furniture would go (Foster, 2016). Through VR, buyers can view

the property as many times as they want and not burden the agent (Foster, 2016). The agent therefore has a higher chance of selling properties as well as having more time to work on other necessary tasks.

Future VR technologies, like spatial tagging, will increase the appeal of VR and make it even more realistic and beneficial to both buyers and agents. Matterport, a leading VR company in real estate, explains how spatial tagging will change everything (Champagne, 2016; South, 2016). Spatial tagging lets agents highlight features in a home while buyers are experiencing this virtual tour enabling agents to efficiently lead VR tours remotely. As the buyer is using VR, the agent can see what they are looking at and these spatial tags serve as a reminder for agents. For example, when a buyer in VR comes across a spatial tag on the kitchen counter, it reminds the agent to elaborate on the counter, as if they were doing an actual tour, and explain how the buyer could change it to their liking (Champagne, 2016). It is important to acknowledge that VR tours will not eliminate real estate agents' jobs. Agents are always needed to explain the details during a VR tour and also handle the fundamental processes of buying and selling homes. VR simply will increase the efficiency of the real estate business and increase business as a whole.

Fundamentally, VR has changed up parts of the real estate market, but its real impact is expected to take place in the near future as it becomes more widely used and the technology continues to advance.

VR's Potential in Residential Real Estate

Although there have been minimal academic studies on the direct impact of VR in terms of residential real estate sales to date, VR truly has the potential to immerse potential buyers in properties and ultimately convert them into actual buyers. In fact, VR tours utilized in other

domains demonstrate the potential impact on real estate. YouVisit, a company that provides VR tours of college campuses, caused a "30% increase in physical visit requests" for participating schools, that actually lead to a 12.3% conversion rate" to attend the school (Champagne, 2016). In terms of real estate though, according to Goldman Sachs, there is a potential market of 1.4 million registered real estate agents, and a commissions market of $107 billion (Hah & Shekthman, 2016). By 2020, Goldman Sachs expects 130,000 real estate agents to be using VR (Hah & Shekthman, 2016). In addition, VR will supposedly generate $750 million revenue by 2020, and $2.6 billion in 2025 (Hah & Shekthman, 2016). In fact, the value of a VR home listing ad will supposedly weight that of an online advertisement by 2025 (Hah & Shekthman, 2016).

Impact of Future Price Reductions on VR

As VR technology continues to advance over the next decade and its price reduces, VR is poised to become as common as smartphones (Foster, 2016). As VR becomes more mainstream, it will soon be used in lower priced homes and for every average day sale (Foster, 2016). This is extremely important because VR will therefore impact the entire real estate market and almost every buyer and agent. In terms of projections, a report from BI Intelligence forecasts a 99% compound annual growth rate from 2015 to 2020 for the shipment of VR headsets (Danova, 2015). With that type of growth, VR is poised to reach the masses and disrupt the entire market within the decade.

VR Increased Impact as Technology Advances in Future

VR will also continue to have a greater impact on the real estate market as its technology advances. Fundamentally, human interaction breaks down into five senses: vision, hearing, touch, proprioception and smell (Kim et al., 2013, p. 280). VR, through new technology, will

soon be able to mimic and portray these haptic senses to enhance the user's virtual experience (Miller, 2016). For example, haptic technology will eventually "let users see their own hands in the virtual world, allowing them to open closet doors and feel hot water from the faucet" (Miller, 2016). Essentially, when a user touches or hits with a haptic interfaces, the object will create a force feedback back on the user's hand to mimic actual feeling (Kim et al., 2013, p. 280). Overall, haptic technology will help users have even more presence and immersion in VR by mimicking real world senses.

Conclusion

Given all the impacts of VR listed throughout the section above, VR will likely play a role in guiding buyers and sellers home buying decisions. Because of these changes in the marketplace, studying the role of VR on decision making in general and in the context of buying behavior is a fruitful line of research. Based on this research it could help guide the entire real estate industry from agents to buyers to sellers. VR could perhaps overcome factors that limit people (time, distance, money) from making very important decisions in their lives such as buying a home.

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Figures

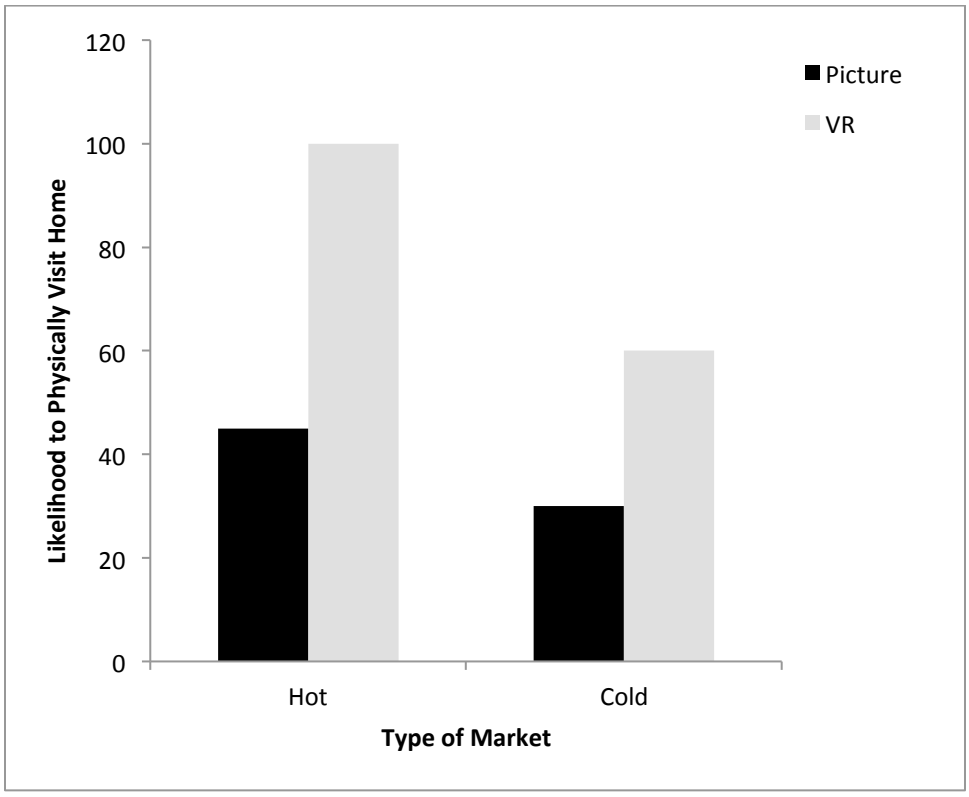

Figure 1. Mean likelihood of wanting to go visit home based on type of market and staging,

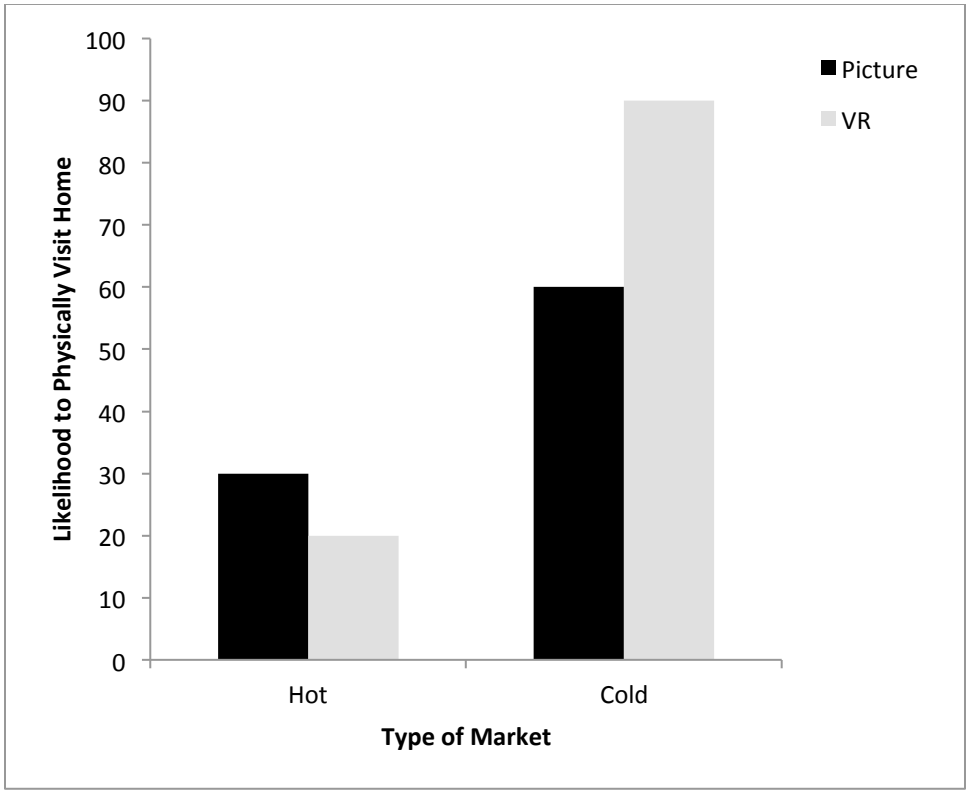

Figure 2. Mean likelihood of wanting to go visit home based on type of market and staging given scarcity effect.

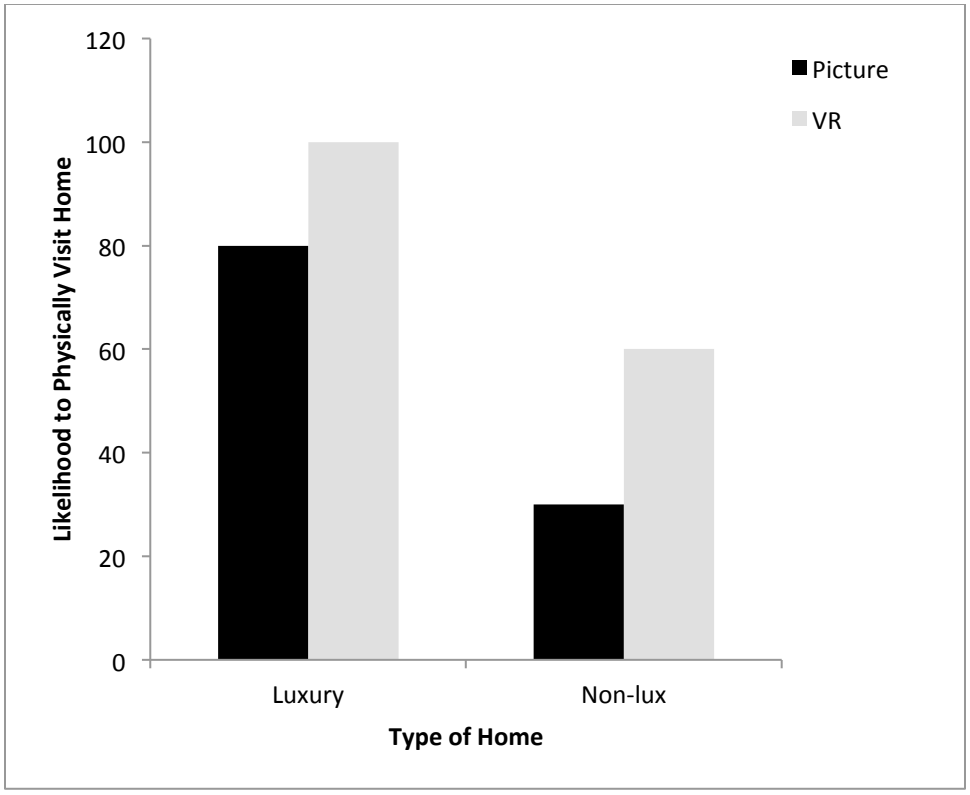

Figure 3. Mean likelihood of wanting to go visit home based on type of home and staging

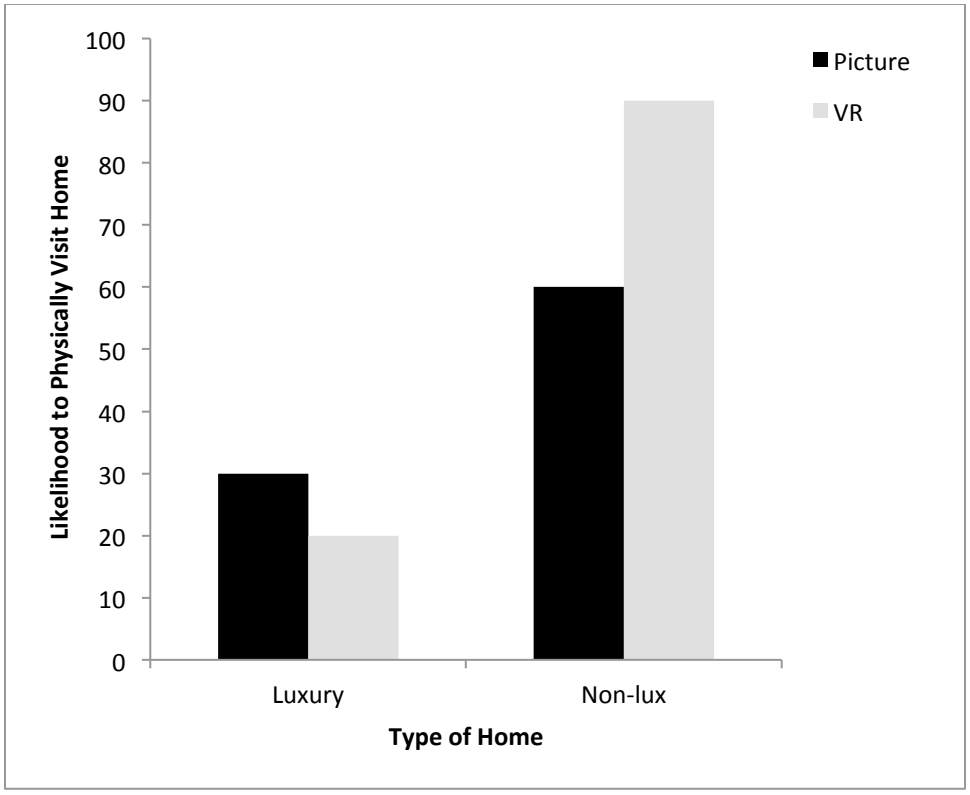

Figure 4. Mean likelihood of wanting to go visit home based on type of home and staging