Department location: Factor for Airbnb user’s valuation perception

Ubicación del departamento: factor para la valoración percibida por los usuarios de Airbnb

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ABSTRACT

The objective is to analyze the impact of the location in the quality perception of customers. Data was obtained from the stars-based valuation of Airbnb website, considering a standardized option of accommodation just apartments of one room up to two guest maximum, with an average cost of USD 50 per night and located in four cities: New York and Miami in USA, and Mexico City and Cancun in Mexico, using a chi-square analysis to identify if there is a difference in quality perception considering if the destination place have beach or not. The results showed than departments located in New York had the most significant difference in valuation of quality of hosts.

Keywords: Airbnb, global accommodation, platform economy, collaborative economy.

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RESUMEN

El objetivo es analizar el impacto de la ubicación en la percepción de los consumidores. Los datos fueron obtenidos de la evaluación basada en estrellas del sitio de internet de Airbnb, considerando como opciones de alojamiento apartamentos de una sola habitación para uno o dos huéspedes máximo, con un costo promedio de USD 50 por noche y ubicados en cuatro ciudades: Nueva York y Miami en EUA y la Ciudad de México y Cancún en México, utilizando un análisis de Chi cuadrada para identificar si hay una diferencia en la percepción de la calidad considerando destinos que cuentan con playa o no. Los resultados mostraron que los departamentos ubicados en la ciudad de Nueva York tienen la diferencia más significativa en la percepción de la calidad por parte de los huéspedes.

Palabras clave: Airbnb, alojamiento global, economía de plataforma, economía colaborativa.

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INTRODUCTION

Sharing economy, or collaborative economy, has been defined as a new concept of trading between peers that can be summarized with the following phrase “What is mine is yours, for a fee”, driven mainly because of the rise of some technologies of information and communication. The digital evolution that emerged as a result of rapid technological developments has brought this concept forward, creating opportunities for individuals to turn their talents to money and benefit from underutilized resources (Bozdoganoglu, 2017).

This trend of the economy has been defined as an interaction between two or more individuals, through using or not of digital media, that satisfy a need (real or perceived) to one or more people. In that sense, digital platforms established a framework that facilitates exchanges with lucrative ends among users, whom can interact by selecting a variant participation role (either client or supplier), or else in a multiple role sense, being sometimes users and sometimes providers of a good or service.

The definition for “collaborative economy” may be interpreted under different labels: collaborative consumption, shared economy, on-demand economy, peer-to-peer economy, zero-marginal cost economy, and crowd-based capitalism are just some examples of the different interpretations that are currently interconnected to the notion of sharing economy (Selloni, 2017).

One of the key characteristics of the collaborative economy is that provides an economic opportunity for individuals to trade their underutilized assets with other individuals through intermediaries that match supply and demand in an efficient way (Petropoulos, 2017) taking advantage of technologies available in the internet and the greatly broad scope for business using the web to reach a substantial amount of potential clients around the world.

Digital technologies enable sharing what people traditionally do not use full-time, considering assets such as houses, departments, cars and even people’s free-time, in the form of labor potential to do specific tasks. These technology allows performing practices that promote the use and exploitation of properties, promoting the re-use and access instead of purchasing ownership (Grifoni et al., 2018).

Peer-to-peer accommodation platforms for example, are significantly changing consumption patterns, with the social and economic appeals of this new phenomenon affecting expansion in destination selection, increase in travel frequency, length of stay, and the range of activities
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The activity related to sharing resources using digital tools facilitate temporary non-ownership of resources seeking monetary rewards, can be considered as a differentiator between the latest generation of platform businesses and their predecessors (Breidbach & Brodie, 2017).

Literature review

The concept of renting or sharing is changed for a more efficient way of consuming in a new mode of consumption, were consumers do not have to own everything they need, but instead is oriented to a new cultural concept of the possession of goods. This creates a form of collaborative consumption that includes processes, such as the production (crowdsourcing, collective innovation, open software, co-working, user-generated content), financing (crowdfunding) or consumption for goods and services (Palos-Sanchez & Correia, 2018).

For instance, a product or service systems, allows members to share multiple products that are owned by companies or by private persons. Examples of product-service systems are car-sharing services (Zipcar) and peer-to-peer sharing platforms (Zilok.com), while Trends in tangible assets include the rise of household names such as Airbnb and Uber.

Another option is related to redistribution markets, peer-to-peer matching or social networks allow the re-ownership of a product (NeighborGoods.com and thredUP.com). Access also can be derived through collaborative lifestyles in which people share similar interests and help each other with less tangible assets such as money, space or time; this sharing is mostly enabled through digital technology (Roh, 2016). Online home-sharing is part of a growing range of practices described variously as the “peer to peer”, or “sharing economy”, where participants engage in “collaborative consumption” by “borrowing/renting” rather than “buying/selling” (Hamari, Sjöklint, & Ukkonen, 2016).

This collaborative or “shared” economy represents a human activity that seeks to generate public value functioning by new forms of work organization, based on a kind of organization that is more horizontal designed, that is based mainly in value creation via sharing of goods, spaces and tools (usage rather than ownership) for citizens’ 'networks' or communities and, generally, intermediation by internet platforms (David, Chalon, & Yin, 2016).

The current dissemination and uptake of sharing economy platforms and services are praised for allowing various idle resources such as homes, tools, clothes and vehicles to be used more
effectively for bringing people together, for encouraging the development of more user-centered services and for constituting new forms of entrepreneurship around the world (Bradley & Pargman, 2017), with more than one hundred different companies already listing a wide variety of products including car rentals, parking spaces, high end sports, photography equipment, musical instruments, and lodging accommodations (Wiles & Crawford, 2017).

As part of this collaborative economy, there is a tendency to take advantage of the innovation in some information and communication technologies that creates what is been called as a “platform economy”, considered as a new but fast-growing phenomenon, given the potential for platforms to facilitate economic growth and mediate access to various markets. (European Commission, 2015 cited by Kilhoffer, Lenaerts, & Beblavý, 2017).

The distinction between labor and capital platforms can be traced to the value creation for potential and actual clients, where the first allow sellers to be paid for a single task or good at a time, the second is focused to let participants to sell goods or rent assets, making possible a connection among workers and sellers directly to customers and allowing people to work when they want while payment passes through the platform (Scher et al., 2016). As a result of the diffusion of digital technologies, particularly the Internet and smart phones applications, sharing platforms have become sufficiently scalable to generate a critical mass of users worldwide (Constantiou, Marton & Tuunainen, 2017).

In terms of labor, the opportunities created through platforms allowed that a sub tantial number of people to use apps, platforms, and websites to find and perform jobs. There are at least seven million platform workers that live all over the world, doing work valued at US$5 billion per year outsourced via platforms or apps (Kuek et al., 2015; Heeks, 2017 cited by Graham & Woodcock, 2018).

According to Kilhoffer et al. (2017), a platform encompasses two essential characteristics. First, a platform contains a common “core” or “architecture” with certain essential functions, which can be the basis of development of new products or services (e.g. Gawer, 2007; Tiwana et al. 2010 cited by Kilhoffer et al. 2017). Second, a platform is capable of a “positive feedback loop” among its users, which is known as the networked effect (Eisenmann et al., 2011; Gawer 2011; Ghazawneh and Henfridsson, 2013 cited by Han et al. 2016). In order to reduce uncertainty and facilitate trust among participants, sharing economy companies have developed platforms that make public information about the service providers available for free consultation at any given time (Ye, Alahmad, Pierce, & Robert, 2017).
According to World Economic Forum, there are some related concepts to sharing economy that often are a source of confusion and do not represent a truly economy in the market, just a way of interactions among participants who use one platform in search of a given good, and offers a distinction considering the following examples based on trends in the market (WEF & PWC, 2017):

**On demand economy:** Economic transactions that use an online platform that facilitates the interaction of suppliers and demanders in real times, as well as the delivery of products or services (Spotify, Netflix).

**Collaborative consumption:** Economic model that is based on sharing idle assets, products or services, enabling access over ownership and continuous interaction instead of the traditional relationship buyer/seller (Thred Up, Helpling).

**Crowd economy:** Participants connected through a platform in order to achieve a goal of shared interest (Amazon, MyCrowd QA).

**Gig economy:** Platforms that allow connection among people searching for a job with employers looking to occupy temporary contract-based activities (Udemy, Featly).

**Peer-2-Peer economy:** Decentralized economic model directly dependent on an online P2P platform (EasyRoomate).
**Collaborative economy**: Builds on P2P platforms to include “economic systems of decentralized networks and marketplace that unlock the value of underused assets by matching needs and haves, bypassing traditional institutions” (Peerby, ParkFlyRent).

Among the community sharing practices, the aspect related to “Trust-verification” allows people to build trust through a model that facilitate transacting partners to limit counterparty verification and liability expenses while reaping the benefits of sharing. Peer review ratings, third-party validation and liability insurance are the most common ways of establishing such trust between users and the platform and also among users themselves (WEF & PWC, 2017), where many transactions rely on the peer-to-peer relationships between customers and product/service providers (Yang, Song, Chen, & Xia, 2017).

**Figure 2**
Community transactions practices in capital sharing economy

In that sense, a validation process based on star ratings functions in a double-way sense, not only the customers and potential client can use that information to make a decision regarding which supplier is the best option for accommodation services, but also the people who are opening their spaces to strangers can use it in order to decide open the doors to some random people, even without further knowledge, but using a trust verification system accepted for all the participants. This trust verification systems is one fundamental basis for the business model of Airbnb and other companies in collaborative economy, as well as capitalizing on idle capacity and the use of technology, as the figure 2 shows.
Airbnb business model

Airbnb is a company and a software platform dedicated to offer accommodation to individuals and tourists, that counts with and approximated offer of two million properties, located in 192 countries and 33 thousand cities. It was founded in November 2008, in the city of San Francisco, California, according to the information in the website\(^1\). The company maintains an alternative offer to the traditional accommodation services such as chains of hotels, staying as a competitor that generates profits in a business model that can be defined as part of the collaborative economy, as a subset of capital economy, where is a part of businesses based in what is being considered as platform economy.

This model of business, operated via online platform, allowing that both provider and customer have access to certain means to grant a “grade” or “stars based valuation” for his counterpart, a valuation that in the case of the supplier of the service makes easy the selection process that the consumer does because it is one of the main criteria that people takes into account at the time of making decisions when selecting a product or service using the internet.

Platform economy companies have developed at a pace beyond the ability of all levels of government to pass laws and regulations to capture tax revenues from either the corporate entities, such as Uber or Airbnb, or the service providers who drive the cars and rent out the rooms (Virginia Municipal League & Center for State and Local Government Leadership at George Mason University, 2015).

When the guest search for listings in Airbnb, swift trust is developed before their peer-to-peer interaction. Due to the lack of personal knowledge about the trustees before sufficient interaction, trustors have to use simple heuristics, such as the trustee’s social categories, roles and third party information to forming trust (Hung, Dennis, and Robert, 2004 cited by Ye, Alahmad, Pierce, & Robert, 2017), and because people often have a personal interaction with the owner of assets they tend to be more considerate when using those assets. (Stemler, 2016).

Decision making of accommodation services consumers

From a destination point of view, the fact that Airbnb represents a substitute for other types of traditional accommodation, means that Airbnb could decrease the amount of money which travelers spend in a destination. According to Airbnb, visitors are spending their savings in the destination, meaning that they end up helping the economy of the community and also the local tourist industry at the destination (Speranta, 2017).

A study conducted by Varma, Jukic, Pestek, Shultz, & Nestorov (2016) revealed that when it comes to the factors used by customers in their selection of a lodging facility, aspects like

\(^1\)https://airbnb.mx

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importance of location, past experience, image, reputation were considered as determinant, as well as importance of security, cleaning, loyalty programs and recommendations.

In an analysis that made a comparison among Airbnb and Hotels performance in 13 different places such as: Barcelona, Boston, London, Los Angeles, Mexico City, Miami, New Orleans, Paris, San Francisco, Seattle, Sidney, Tokyo and Washington D.C., showed that Airbnb occupancy levels were higher in places with high hotel occupancy rates, the shares of market demand and revenue for Airbnb was generally below 4% and 3% respectively, the rates of the platform were lower than hotels (16$ lower considering the U.S. markets) (STR, 2017).

One of the main characteristics for this type of business is the possibility to create trust between buyers and sellers and to build trust and facilitate transactions, online markets typically present information not only about products, but also about the people offering the products (Edelman & Luca, 2014), which is a factor that can drive the intention and preferences of potential consumers before making a decision.

The present research seeks to contribute with evidence that supports the hypothesis that relates location as a factor that influences in decision making process at the time to select an option for allocation. Research question for the present work is: The location of an accommodation service influences the perception of the service quality in customers?

METHODOLOGY ANALYSIS

Data was obtained via the website of Airbnb.mx, accessed the day September 25th, 2018, with and randomized mode of collecting the information based in the number of stars assigned to each object of study, which functions as a rating system that shows the valuation regarding the experience of the guest, and also gives some useful information for potential guest in order to make a decision.

**Dependent variable:** Perception of the quality in accommodation service, measured and identified by evaluation that the users of the platform provide in the Airbnb system, rated in a scope from 1 to 5 stars, and is a result of the combination of service quality factors that groups particular validation of the following factors: Veracity, Communication, Cleanness, Location, Arriving and Quality.

**Independent variable:** 4 kinds of accommodation options are considered to the analysis of the present work:
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- **Accommodation type 1**: Department, 1 or 2 guest, 1 or 2 beds, 1 bathroom, average price per night equivalent to USD 50 approximately, located in Cancun, Mexico.

- **Accommodation type 2**: Department, 1 or 2 guest, 1 or 2 beds, 1 bathroom, average price per night equivalent to USD 50 approximately, located in Miami, United States.

- **Accommodation type 3**: 1 or 2 guest, 1 or 2 beds, 1 bathroom, average price per night equivalent to USD 50 approximately, located in Mexico City, Mexico.

- **Accommodation type 4**: 1 or 2 guest, 1 or 2 beds, 1 bathroom, average price per night equivalent to USD 50 approximately, located in New York, United States.

For each accommodation type and criteria, 8 places were considered, which in total are 96 different places.

With the information obtained in the website of Airbnb, a non-parametric analysis using Chi-squared was conducted to analyze the valuations that are registered in the platform of Airbnb, considering 96 different accommodation options located considering beach destinations in Mexico and USA, as well as cities that received both business and leisure tourism.

**Table 1**

| Data collected in Airbnb website, with types of apartments and valuation of host |
|---|---|---|---|---|---|---|---|---|---|
| | Regular host | Good Host | Superhost | Regular host | Good Host | Superhost |
| **Type 1** | 78 | 103 | 215 | Type 3 | 78 | 44 | 261 |
| | 77 | 69 | 90 | | 32 | 262 | 156 |
| | 9 | 13 | 82 | | 83 | 153 | 213 |
| | 16 | 29 | 51 | | 52 | 77 | 212 |
| | 57 | 63 | 77 | | 78 | 205 | 60 |
| | 4 | 18 | 89 | | 28 | 293 | 221 |
| | 9 | 36 | 55 | | 31 | 103 | 169 |
| | 7 | 44 | 63 | | 57 | 120 | 188 |
| **Type 2** | 209 | 239 | 230 | Type 4 | 187 | 152 | 76 |
| | 143 | 109 | 137 | | 227 | 95 | 72 |
| | 4 | 173 | 260 | | 219 | 131 | 40 |
| | 12 | 244 | 146 | | 4 | 143 | 58 |
| | 75 | 148 | 143 | | 17 | 279 | 53 |
| | 45 | 227 | 86 | | 24 | 83 | 55 |
| | 42 | 231 | 56 | | 4 | 68 | 91 |
| | 22 | 196 | 39 | | 20 | 132 | 43 |

Source: Authors, based on data obtained in http://Airbnb.mx

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Those places were included considering a valuation based on 3 different criteria: *Superhost*, *Good Host* and *Normal Host*, as follows:

- **Superhost**: Valuation of 4.7 stars or more on average.
- **Good host**: Valuation between 4.1 to 4.6 stars on average.
- **Normal Host**: Valuation of 4 stars or less.

The gathered data of the valuation stars for each type of Department and the validation of host quality catalogued in different types served as the key information to interpret the valuation of users of Airbnb in terms of the classification for each kind of host, as the table 1. The distribution regarding data about valuation of criteria for each host shows the graph 1, 2,3, and 4.

**Graph 1**

*Quantity of data valuation for each department in each kind of host (Using D as short of Department)*

Source: Authors, based on data obtained in http://Airbnb.mx
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Graph 2
Valuation for normal host in each type of apartment

Source: Own elaboration, based on data obtained in http://Airbnb.mx

Graph 3
Valuation for good host in each type of apartment

Source: Own elaboration, based on data obtained in http://Airbnb.mx
Graph 4
Valuation for superhost in each type of apartment

Source: Authors, based on data obtained in http://Airbnb.mx

Chi-square test
The complete gathered information was ordered in an observed frequency table in order to make the Chi-square analysis using Excel program of Microsoft Office Suite. The results obtained in the analysis showed in the table 2 (observed, expected and calculation of test statistics value).

Table 2
Observed frequency of the data obtained

<table>
<thead>
<tr>
<th>Expected frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
</tr>
<tr>
<td>Type 1: Cancun</td>
</tr>
<tr>
<td>Type 2: Miami</td>
</tr>
<tr>
<td>Type 3: Mexico city</td>
</tr>
<tr>
<td>Type 4: New York</td>
</tr>
<tr>
<td>Sum</td>
</tr>
</tbody>
</table>

Source: http://Airbnb.mx
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Chart 5
Observed frequency by type of accommodation place and classification of Host

Table 3
Expected frequency table

<table>
<thead>
<tr>
<th>Department</th>
<th>Regular Host</th>
<th>Good Host</th>
<th>Superhost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1: Cancun</td>
<td>266.78</td>
<td>576.96</td>
<td>510.26</td>
</tr>
<tr>
<td>Type 2: Miami</td>
<td>633.66</td>
<td>1370.38</td>
<td>1211.96</td>
</tr>
<tr>
<td>Type 3: Mexico city</td>
<td>631.69</td>
<td>1366.12</td>
<td>1208.19</td>
</tr>
<tr>
<td>Type 4: New York</td>
<td>447.86</td>
<td>968.55</td>
<td>856.59</td>
</tr>
<tr>
<td>Sum</td>
<td>1980</td>
<td>4282</td>
<td>3787</td>
</tr>
</tbody>
</table>

Source: Authors, 2018.
Table 4
Outcome frequency estimated table

<table>
<thead>
<tr>
<th>Department</th>
<th>Regular Host</th>
<th>Good Host</th>
<th>Superhost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1: Cancun</td>
<td>0.36</td>
<td>70.69</td>
<td>87.87</td>
</tr>
<tr>
<td>Type 2: Miami</td>
<td>10.52</td>
<td>28.21</td>
<td>10.9</td>
</tr>
<tr>
<td>Type 3: Mexico city</td>
<td>41.90</td>
<td>8.72</td>
<td>61.15</td>
</tr>
<tr>
<td>Type 4: New York</td>
<td>144.21</td>
<td>13.52</td>
<td>158.6</td>
</tr>
<tr>
<td>Sum</td>
<td>197</td>
<td>121.14</td>
<td>318.52</td>
</tr>
</tbody>
</table>

Source: Authors, 2018.

Value for Chi-squared (95% probability considering 6 degrees of freedom): **12.591587**
A post-hoc analysis was performed with the intention to deepen understand the weight of each option in comparison with the chi-square critic value, with is show as the table 5.

Table 5
Results of distinct test performed with the data

<table>
<thead>
<tr>
<th>Test performed</th>
<th>Statistics test</th>
<th>Degrees of freedom</th>
<th>Critic Chi square</th>
<th>Biggest weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td>All host and all types</td>
<td>637</td>
<td>6</td>
<td>12.59</td>
</tr>
<tr>
<td>Test 2</td>
<td>All host and types 1,2,3</td>
<td>257</td>
<td>4</td>
<td>9.48</td>
</tr>
<tr>
<td>Test 3</td>
<td>All host and Type 2 and 3</td>
<td>98</td>
<td>2</td>
<td>5.99</td>
</tr>
<tr>
<td>Test 4</td>
<td>All types and Normal and Good Host</td>
<td>119</td>
<td>3</td>
<td>7.81</td>
</tr>
<tr>
<td>Test 5</td>
<td>Type 2,3,4 with Normal and Good Host</td>
<td>94</td>
<td>2</td>
<td>5.99</td>
</tr>
<tr>
<td>Test 6</td>
<td>Types 1,2,3 vs Type 4 with all Host</td>
<td>72</td>
<td>2</td>
<td>5.99</td>
</tr>
</tbody>
</table>

Source: Authors, 2018.
With the results obtained, it is noticeable that the difference between calculated chi-square and the critic value is considerable high, and that the higher the number, the greater the impact of the location of the accommodation place in the valuation received by users of Airbnb.

**DISCUSSION**

The most quantity of qualification available in Airbnb website was focused in *Good host*, located in Miami, USA, and the least quantity was for *Regular host* located in Cancun, México, with an average of qualifications in general of 662 qualifications received with a standard deviation of 325.62, out of a total of 7,954 qualifications considered in the present study.

Departments located in Miami and Mexico City received almost the same number of valuation, up to 3216 and 3206 respectively, considering all kind of host.

The most frequently valuated kind of host were *Good Host*, in all kind of types for apartments considered with 4282 valuations available for consultation in the site of Airbnb at the time the data was collected.

The observed frequency in the data analyzed showed an incremental trend for the accommodation type 3 located in Mexico City, that went from 469 (*Normal Host*), 1,257 (*Good Host*) to 1,480 (*Superhost*), and also for accommodation type 1, located in Cancun, Mexico, that went from 257 (*Normal Host*), 375 (*Good Host*), to 722 (*Superhost*).

The comparison between the critic value for the Chi-square and the calculated value of the test statistic was noticeable high, considering that the value for the first with 95% probability considering 6 degrees of freedom was of 12.591587, and the second one was of 637, showing that there is a definitive impact of the location in the valuation received by users, mainly in the validation of the services received in the apartment type 4, that is an apartment with 1 room, 1 or 2 beds, with a night fee of around USD50, located in New York, an international city with a large amount of people traveling to spend time with purposes either for pleasure and business.

In all the test considered in the extra analysis, apartment type 4 obtained the biggest weight when considered (test 1,4,5,6), being the last three with the *Normal Host* valuation the heaviest values.
CONCLUSIONS

The alternative hypothesis is accepted categorically, there are changes in the user perception regarding the location of the accommodation service, mainly among the guest that use the accommodation service in New York, that showed a determinant weight when calculating the chi-squared value in all the different test that were performed with the data.

The analysis in the gathered information also showed one case where the valuation of quality for the host had an increasing tendency, in the case of guest that used Airbnb services in Mexico, City, being the only one that showed that behavior in client´s perception.

The most common valuation was “good host”, adding all the results obtained in all the types of departments with similar characteristics such as price, quantity of rooms and beds, with a single differentiation factor that was location.

One factor that have to be taking into account is that the cost of the rent, in despise of being used as a way to give an equitable treatment to the information collected in the website of Airbnb, could be a determinant influence factor that affects the customer perception, considering that in big cities this kind of accommodation usually are located far from the city´s downtown, and that can be an explanation why the impact of the allocation in New York was the biggest factor in terms of the user valuation of both “normal host” and “superhost”.

One of the limitation of the analysis was the amount of accommodation options considering aspects as price, number of beds, location and number of guest allowed by host, perhaps the consideration of a wider range of options and cities could give more information of the consumer perception of the quality of service´s valuation.

REFERENCES


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