Understanding Restaurant Clients’ Intention to Use Mobile Applications: A Comparative Study of France and Russia

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ABSTRACT

Smartphones impact consumer behavior by providing new technology - mobile applications. To better understand the intention to use mobile applications, in the context of restaurant guides, this study mobilizes the constructs of usability, loyalty, trust and the intention to use. A total sample of 244 respondents (123 from Paris and 121 from Moscow) was collected and analyzed using SmartPLS3. This research fills a gap regarding the comparison of mobile application users’ behavior in France and Russia. Indeed, the analysis indicates that Russian users are more sensitive toward variable of trust, while French users are more impacted by mobile application usability. The results of this study can be relevant for practitioners, developers of mobile applications and restaurant managers.

Keywords: Mobile Application, Intention to Use, Restaurant Industry, Usability, Loyalty, Trust

INTRODUCTION

Smartphones and their applications have invaded people’s life to a great extent. Mobile banking, gaming, booking, shopping, tourist guides are available through mobile applications (MA), which are installed directly on users’ devices. Mobile food/restaurant guides, including the function of table booking, are part of tourist city guides, such as TripAdvisor or independent services, such as Just eat or Tablein. Nevertheless, independent services are often better known and used by local users than by tourists. Numerous studies have attempted to investigate technology acceptance in developed
countries (Al-Otaibi, Aljohani, Hoque, & Alotaibi, 2018; Bansal, Zahedi, & Gefen, 2016; Belanche, Casaló, & Guinalíu, 2012; Davis, 1993; Venkatesh, Morris, Davis, & Davis, 2003). At the same time, the growth in the use of technology has aroused interest toward developing and emerging countries (Al-Otaibi et al., 2018; Li & Yeh, 2010).

The digitalization of people’s life brought issues to practitioners of all industries, including restaurant managers. The relationship between a restaurant and a client has been for long time personal. Word-of-mouth is one of the most powerful marketing tools to acquire new clients, to make and to keep them loyal (Balasubramanian & Mahajan, 2001; Trusov, Bucklin, & Pauwels, 2009). Today, the restaurant’s management should be in trend with new technologies. One of the ways is to participate in the digital mobile restaurants’ guides, where the user can find information (menus and contacts details). In addition, restaurants can use social media tools to provide users with the capability to review, comment, rate, and book a table without personal contacts. MAs propose useful functionalities that can drastically influence a consumer’s choice, as they are considered as independent. The aim of this research is mainly (1) to identify the reasons why users could decide to use mobile applications and (2) to measure the cultural impact on users’ behavior. The study focusses on two popular mobile application in France and Russia with similar functionalities and developed to cover the local users’ needs or expectations.

The central concept of this study is the “intention to use,” which is a determinant of technology adoption (Davis, 1993; Im, Hong, & Kang, 2011;). Several frameworks and models have been developed to explain the behavioral intention to use technology, such as the technology acceptance model (TAM) (Davis, 1985) and its extension TAM2 (Venkatesh & Davis, 2000), the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003) and the extended UTAUT2 (Venkatesh, Thong, & Xu, 2012). Behavioral intention is defined as the individual’s decision about the use of technology. Strong intention to use can be developed based on: (1) The financial and nonfinancial benefits or price value (Hsu & Lin, 2015; Venkatesh et al., 2012); (2) the use of trusted brands of MAs (Li & Yeh, 2010); (3) the technical support or facilitating conditions (Venkatesh et al., 2012); (4) the appropriate functionality and design or MA usability (Hoehle & Venkatesh, 2015); (5) the loyalty programs (Balakrishnan & Griffiths, 2018). For the purpose of this research, three variables are mobilized to measure their impact on intention to use: usability, trust, and loyalty.

**BACKGROUND**

Il faut ajouter ici des éléments pour expliquer le choix des deux pays, villes et applications; on ne le voit que beaucoup trop tard

**Intention to Use a Mobile Application**

The central concept of this study is the “intention to use,” which is a determinant of technology adoption (Davis, 1993; Im, Hong, & Kang, 2011;). Several frameworks and models have been developed to explain the behavioral intention to use technology, such as the technology acceptance model (TAM) (Davis, 1985) and its extension TAM2 (Venkatesh & Davis, 2000), the unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003) and the extended UTAUT2 (Venkatesh, Thong, & Xu, 2012). Behavioral intention is defined as the individual’s decision about the use of technology. Strong intention to use can be developed based on: (1) The financial and nonfinancial benefits or price value (Hsu & Lin, 2015; Venkatesh et al., 2012); (2) the use of trusted brands of MAs (Li & Yeh, 2010); (3) the technical support or facilitating conditions (Venkatesh et al., 2012); (4) the appropriate functionality and design or MA usability (Hoehle & Venkatesh, 2015); (5) the loyalty programs (Balakrishnan & Griffiths, 2018). For the purpose of this research, three variables are mobilized to measure their impact on intention to use: usability, trust, and loyalty.

**Usability**
MAs can influence customers’ experiences by providing them with information to answer their needs. System quality, information quality, and interface design are shown to influence the intention to use a MA (Hoehle & Venkatesh, 2015). Thus, usability impacts user behavior both in technology adoption and context of use by providing the basis for standardization, which might eliminate boundaries between countries. MA usability is defined as “the extent to which a mobile application can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use” (Hoehle & Venkatesh, 2015, p.437). This research focuses on MAs users in Paris and Moscow (specified users), using the application to search a restaurant and/or to book a table (specified goals) in restaurants (specified context). Restaurant guides on MA are task-oriented (table booking) and can be considered as utilitarian. Therefore, usability might be key for the user such as easy start, automatic registration with email or social network account, and location-based technology. Users can evaluate these design elements within two seconds; longer usage is needed to evaluate the information’s structure and perceived usability impacts the preference of users for one MA compared to another one, or other booking or searching tools such as website, phone … (Ryan & Gonsalves, 2005; Venkatesh & Ramesh, 2006).

If the users have developed positive attitude toward the technology, its usability is a strong predictor of loyalty (Hoehle & Venkatesh, 2015). Features such as a localization, data storage or instant start not only impact the intention to use, but also induce the intention to use it again by developing loyalty. MA loyalty is key for practitioners, especially in a competitive industry if the MA is free of charge (Wang et al., 2016). The authors postulate that:

**H1:** Usability impacts positively the intention to use the MA.

**H4:** Usability impacts positively loyalty.

**Trust**

As the use of mobile technology often involves the disclosure of personal data, many researchers have investigated trust as a relevant construct for technology adoption models (Bansal et al., 2016; Venkatesh, Thong, Chan, Hu, & Brown, 2011). The conceptualization of trust on internet has emerged in studies of e-commerce, when the user was obliged to disclose private information (credit card numbers). Nevertheless, the importance of trust depends on context; for example, trust is key for the acceptance of mobile banking applications. In mobile restaurant guides the importance of trust is directly linked to the level of information required such as name, e-mail address, phone number and to the localization application used. Therefore, the user can perceive risks that his/her data could be used in inappropriate way (e.g.: spam, rent of email list to third party etc.), or his/her account hacked. This paper considers trust in the context of the commitment-trust theory in relationship marketing (Sirdeshmukh Singh, & Sabol, 2002; Vivek, Beatty, & Morgan, 2012), in which trust is defined as “confidence in an exchange partner’s reliability and integrity” (Morgan & Hunt, 1994, p.23). The use of a MA in the restaurant industry for table booking involves multilevel relationships (Palmatier, 2008): interfirm, individual-to-firm, and interpersonal. The user addresses three different levels of trust: trust in the smartphone, in service providers, in other clients and in restaurant marketers (Yadav et al., 2016). Trust developed about the MA will usually expand to all the restaurants which are listed in the application (the users believe that the reviews are fair, and the ratings are independent). Conversely, users can lose trust in the restaurant, if false information is published on the MA, or if the service received is poor. Gefen (2000) pointed out the importance of trust and its influence on behavioral intention as users will select an application they rely on. Loyalty as an attitudinal concept depends on users’ trust in a product or service (Cossio-Silva et al., 2016). Many studies focused on the relationship between trust and
loyalty (Baloglu et al., 2014), two significant predictors of intention to use. Trust is a direct antecedent of loyalty behavior (Baloglu et al., 2014) and a significant predictor of intentions to revisit and spread positive word-of-mouth messages (about users experience in a restaurant) (Han & Jeong, 2013). So, the authors postulate:

H2: Trust impacts positively the behavioral intention to use the MA.
H5: Trust impacts positively on loyalty.

Loyalty

Loyalty is a complex concept, it involves relationships between user and MA as technology, between user and MA as a specific brand, and even between user and restaurant establishments. Loyalty is conceptualized as behavioral or attitudinal, or as a combination of both (Almeida-Santana & Moreno-Gil, 2018). Behavioral loyalty is found in repeated purchases and recommendations. Regarding new technologies, researchers consider e-loyalty as key to drive revisits to a website/MA or repurchases from e- or m-vendors (Ozturk, Nusair, Okumus, & Singh, 2017). The context of MA usage can also influence behavioral loyalty (Balakrishnan & Griffiths, 2018; Gupta, Pansari, & Kumar, 2018). Hoehle and Venkatesh (2015) define loyalty as the degree to which a user has a deeply held commitment to re-patronize a MA. In the situation of booking a table in a restaurant, user has several ways to do it: by going to the restaurant, by phone, by using search engine on mobile devices, or by using a MA. If the user has developed loyalty toward one tool, his/her intention to use this tool will be higher. As recommended by Hoehle and Venkatesh (2015), the research will focus on the Intention to use MA, and not to measure the brand impact of a MA. The authors postulate that:

H3: Loyalty impacts positively the behavioral intention to use the MA.

Moderating Effect of Culture

Cultural backgrounds are relevant when determining how consumers meet their needs and their expectations (Ko, Seo, & Jung, 2015; Monga & John, 2008). Traditionally, researchers compare Western and Asian cultures. Russia sits in the middle of the two major streams of world history—the East and the West (Berdyaev & Bamford, 1992). Therefore, Russian society is often characterized by a combination of the values of both Western and Asian cultures. However, a philosophy known as the “special way,” a particularly Russian national idea (Belyaev, 2012), has emerged to replace perceptions of the country as backward, both economically and politically (Miller, 2012). As a tourist destination, the image and reputation of the country are keys, particularly when it comes to destinations such as Russia, which is in crisis or recovering from crisis, with limited official information made available to potential visitors (Andrades & Dimanche, 2017). As to cultural differences in technology acceptance, Gefen (2000) discussed different perceptions of website quality. In the field of tourism, websites from various sectors have been analyzed in depth, particularly in the restaurant industry (Johnson & Vanetti, 2005; Moreo et al., 2007). Daries, Cristobal-Fransi, Ferrer-Rosell, and Marine-Roig (2018) found few differences between restaurant websites in Italy, Spain, and France. In their study, Italian restaurants stood out more for services, such as the announcement of news and events, whereas Spanish restaurants provided more
information (e.g., location and parking). French establishments focused on prices and tourist information for the local area (Daries et al., 2018). Culture impacts MA usability, as it has an influence on users’ expectations about MA structure and design.

**Hypothesis One of moderating effect:** Culture impacts the relationship between trust (Hm1a), usability (Hm1b), and loyalty (Hm1c), on the intention to use.

**Hypothesis Two of moderating effect:** Culture impacts the relationship between trust (Hm2a) and usability (Hm2b) on loyalty.

All hypotheses are presented in the figure 1.

*Je pense qu’il est préférable d’utiliser le même format que précédemment.*

*Mettre hypothesis 1 and 2 est bizarre car en fait on a 4 hypothèses de modération*

*Figure 1. Global research model*

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**METHODODOLOGY**

The authors collected data in two capitals: Paris (France) and Moscow (Russia). The choice of survey destinations was based on context analysis of restaurant industry in these two areas. There are some
similarities and differences that the authors founded and that can help understanding the users’ behavior. The period of data collection comprises spring of 2017, where both countries witnessed recovery after the recession in the restaurant industry. Affected by the decline linked to the terrorist attacks, the French restaurant industry showed the loss in turnover between 3% and 4.5% in 2015. Paris and the Côte d’Azur are the most affected areas. The GNI reported in quarterly economic report a decrease in turnover of restaurateurs of around 4.5% in 2016 as well with a stabilization beginning of 2017. By the end of 2014, the total Russian foodservice decreased by 8%. One of the main reasons was a weak consumer purchasing power of the population. With a falling economy and depreciation ruble, consumers rather preferred to save money. Moscow restaurateurs noticed a drop of average check by 20-25 percent. Mid-range restaurants with average price at 2,000 rubles (27EUR) are the ones having the biggest drop in clientele while the lower cost restaurant (fast food) were reporting good sales (Rosstat, 2017).

Sample

For the sampling strategy, the authors used a non-probability convenience sample. The researchers collected data in cooperation with MA providers in Paris, for France, and in Moscow, for Russia. In order to reach the users of the MA, they included a self-administered online survey in the newsletters of both companies and published it on Facebook and VK (a Russian social network). The authors collected a sample of 244 responses from MA users (123 from Paris/Paris area and 121 from Moscow and its suburbs) for analysis. Table 1 details the social characteristics of the sample. Most respondents (around 55%) were digital natives, born after 1980 and employed (close to 70%). The researchers conducted a quantitative research with a PLS-SEM approach (Hair, Ringle, & Sarstedt, 2011), to analyze the relationships of the model, using the SmartPLS3 software (Ringle, Wende, & Becker, 2014). The SmartPLS3 software enables analysis of the global model and of subgroups, even in case of small sample sizes using the multi-group-analysis. Two subgroups were identified by country (France and Russia).

Table 1. Professional occupation and age of the responders

<table>
<thead>
<tr>
<th>Social characteristics</th>
<th>Type</th>
<th>France</th>
<th>%</th>
<th>Russia</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>18-24</td>
<td>20</td>
<td>16%</td>
<td>21</td>
<td>17%</td>
<td>41</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>25-34</td>
<td>46</td>
<td>38%</td>
<td>50</td>
<td>41%</td>
<td>96</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td>35-49</td>
<td>28</td>
<td>23%</td>
<td>48</td>
<td>40%</td>
<td>76</td>
<td>31%</td>
</tr>
<tr>
<td></td>
<td>≥ 50</td>
<td>29</td>
<td>23%</td>
<td>2</td>
<td>2%</td>
<td>31</td>
<td>13%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>123</td>
<td>100%</td>
<td>121</td>
<td>100%</td>
<td>244</td>
<td>100%</td>
</tr>
<tr>
<td>Occupation</td>
<td>Manager/Entrepreneur</td>
<td>21</td>
<td>17%</td>
<td>69</td>
<td>57%</td>
<td>90</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>Employee</td>
<td>67</td>
<td>54%</td>
<td>14</td>
<td>11%</td>
<td>81</td>
<td>33%</td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td>21</td>
<td>17%</td>
<td>23</td>
<td>19%</td>
<td>44</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>No activity</td>
<td>2</td>
<td>2%</td>
<td>6</td>
<td>5%</td>
<td>8</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>10</td>
<td>8%</td>
<td>11</td>
<td>8%</td>
<td>21</td>
<td>9%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>123</td>
<td>100%</td>
<td>121</td>
<td>100%</td>
<td>244</td>
<td>100%</td>
</tr>
</tbody>
</table>
Measurement Items

The authors adopted measurement items from prior research to build the model (Table A.1). The researchers mobilised Venkatesh et al.’s (2012) scale to measure intention to use, Hoehle and Venkatesh’s (2015) scale for usability and Morgan and Hunt’s (1994) and Venkatesh et al.’s (2011) studies for trust. The measurement items were adapted to the context of the MA use in the restaurant business. The items were translated into Russian and French. The questionnaire used two types of scales: (i) A five-point Likert agreement scale (strongly agree—strongly disagree); (ii) a five-point Likert frequency scale. Griffin, Babin, and Christensen (2004) indicated that the important issue of measurement items in cross-cultural studies is in the translation equivalence. Questions were checked by bilingual researchers specialized in marketing for each country: English/French and English/Russian. In addition, academic researchers prechecked the measurement items.

RESULTS AND FINDINGS

Reliability

The authors checked the reliability of the outer model by verifying that the Cronbach’s alpha is above the recommended threshold of 0.7 and, as Fornell and Larcker (1981) recommended, that the composite reliability values are all above 0.5 (Table 2).

Table 2. Reliability

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s alpha</th>
<th>Composite reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Global model</td>
<td>France</td>
</tr>
<tr>
<td>Intention to use</td>
<td>0.790</td>
<td>0.806</td>
</tr>
<tr>
<td>Loyalty</td>
<td>0.909</td>
<td>0.898</td>
</tr>
<tr>
<td>Trust</td>
<td>0.870</td>
<td>0.830</td>
</tr>
<tr>
<td>Usability</td>
<td>0.902</td>
<td>0.849</td>
</tr>
</tbody>
</table>

Validity

The average value extracted, all above the threshold of 0.5, confirmed the convergent validity of the outer model (Table A.2). As recommended by Hair, Sarstedt, Ringle, and Mena (2012), the authors controlled discriminant validity by verifying that no indicators are loading higher on an opposite variable and by using the Fornell-Larcker criterion (1981) (Table A.3). Results confirm the validity and reliability of the outer model.

Inner Model

Figure 2. Research global model results
In order to test the inner model, the $R^2$, $f^2$ and $Q^2$ values of the variables are controlled. The relationship between the variables are estimated by analyzing that the path coefficients ($\beta$) are above 0.200, t-value are $>$ at 1.96 and p-value below 0.05 (Figure 2). The model explains 55.1% of intention to use determined by loyalty ($\beta=0.660$, $t=9.895$, $p=0.000$), but not by trust ($\beta=0.038$, $t=0.569$, $p=0.570$) and usability ($\beta=0.086$, $t=1.193$, $p=0.234$). The size effect value $f^2$ at 0.502 confirms the huge impact of loyalty on intention to use. Therefore, H3 is validated, and H1 and 2 are rejected (Table 3).

The $R^2$ (0.483) indicates that the model explains a significant amount of the variance of loyalty determined by trust ($\beta=0.502$, $t=7.744$, $p=0.000$) and usability constructs ($\beta=0.242$, $t=3.438$, $p=0.001$). Nevertheless, the impact of trust is higher ($f^2=0.245$) than that of usability ($f^2=0.057$). H5 and H4 are both validated. The $Q^2$, all above 0 (Henseler, Ringle, & Sinkovics, 2009), confirm the good predictive relevance of the model intention to use (0.426) and loyalty (0.330). The quality of the hypothetical model is both confirmed by the standardized root mean square residual at 0.056, below the recommended threshold of 0.1 (Henseler, Hubona, & Ray, 2016) and by the goodness of fit at 0.66 (Latan & Ghozali, 2012).

Table 3. Test of the hypotheses (O=rejected, X=validated)

<table>
<thead>
<tr>
<th>Construct</th>
<th>Predictor</th>
<th>$R^2$</th>
<th>$f^2$</th>
<th>$\beta$</th>
<th>t-value</th>
<th>p-value</th>
<th>$Q^2$</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention to use</td>
<td>Loyalty</td>
<td>0.551</td>
<td>0.502</td>
<td>0.660</td>
<td>9.895</td>
<td>0.000</td>
<td>0.426</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Trust</td>
<td>0.001</td>
<td>0.038</td>
<td>0.569</td>
<td>0.570</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
On the five hypotheses, three are validated and two rejected. Préciser qu'on ne parle ici que des hypothèses principales.

### Moderating Effect of Country

The authors used the bootstrapping procedure to measure the impact of a country on all the relationships of the model. Table 4 summarizes the results. The impact of loyalty on intention to use is positive, direct, and significant, even if the $\beta$ is higher in France (0.856) than in Russia (0.319). Therefore, $H_{m1c}$ is rejected. The impact of usability on intention to use is rejected by both countries, as the $\beta$ and the t-values are below the recommended thresholds and the p-values are above 0.05 (France: $\beta$=0.042, t=0.791, p=0.429; Russia: $\beta$=0.015, t=0.115, p=0.909). Thus, $H_{m1b}$ is rejected.

Trust has a positive, significant, and direct impact on loyalty for France ($\beta$=0.327, t=3.677, p=0.000) and Russia ($\beta$=0.682, t=5.703, p=0.000), therefore, the hypotheses $H_{m2a}$ is rejected. The $\beta$ in Russia (0.682) is higher than in France (0.327). The researchers identified differences in results, highlighted in grey in Table 4: (1) The impact of trust on intention to use is positive, direct, and significant in Russia ($\beta$=0.425, t=2.961, p=0.003), but has been rejected in France ($\beta$= -0.044, t=0.687, p=0.492). Thus, $H_{m1a}$ is validated; (2) the impact of usability on loyalty is positive, direct, and significant in France ($\beta$=0.362, t=3.608, p=0.000), but not in Russia, where the $\beta$ (0.083) is below 0.200, the t-value (0.640) below 1.96, and the p-value (0.523) is above 0.05. Therefore, $H_{m2b}$ is validated.

<table>
<thead>
<tr>
<th></th>
<th>Path coefficient</th>
<th>t-values</th>
<th>p-values</th>
<th>H</th>
<th>Path coefficient</th>
<th>t-values</th>
<th>p-values</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Loyalty→Intention to Use</strong></td>
<td>0.856</td>
<td>17.829</td>
<td>0.000</td>
<td>X</td>
<td>0.319</td>
<td>2.343</td>
<td>0.019</td>
<td>X</td>
</tr>
<tr>
<td><strong>Trust→Intention to Use</strong></td>
<td>-0.044</td>
<td>0.687</td>
<td>0.492</td>
<td>O</td>
<td>0.425</td>
<td>2.961</td>
<td>0.003</td>
<td>X</td>
</tr>
<tr>
<td><strong>Trust→Loyalty</strong></td>
<td>0.327</td>
<td>3.677</td>
<td>0.000</td>
<td>X</td>
<td>0.682</td>
<td>5.703</td>
<td>0.000</td>
<td>X</td>
</tr>
<tr>
<td><strong>Usability→Intention to Use</strong></td>
<td>0.042</td>
<td>0.791</td>
<td>0.429</td>
<td>O</td>
<td>0.015</td>
<td>0.115</td>
<td>0.909</td>
<td>O</td>
</tr>
<tr>
<td><strong>Usability→Loyalty</strong></td>
<td>0.362</td>
<td>3.608</td>
<td>0.000</td>
<td>X</td>
<td>0.083</td>
<td>0.640</td>
<td>0.523</td>
<td>O</td>
</tr>
</tbody>
</table>

On the five hypotheses measuring moderating effect of culture on all relationships of the model, three are rejected as no difference has been identified ($H_{m1b}$, $H_{m1c}$ and $H_{m2a}$) and two validated ($H_{m1a}$ and $H_{m2b}$).
DISCUSSION

This paper addresses the theoretical background of a MA in the restaurant industry, mainly related to users’ intention to use. Few studies have examined the adoption of mobile technology in different contexts (Kim, Kim, & Wachter, 2013; Silic & Back, 2016). One of the predictors of the intention to use discussed is usability, considered key for the success of a MA (Shitkova, Holler, Heide, Clever, & Becker, 2015). Usability allows individuals to use products and services more easily. Poor usability reduces the user’s productivity and enjoyment (Shitkova et al., 2015). Even the most loyal user will stop using a MA in the case of poor usability or design issues (Hoehle & Venkatesh, 2015). Hoehle and Venkatesh (2015) found the positive effect of usability on continued intention to use MA. Some authors found that usability will not necessarily result in a positive impact on intention to use (Chen & Yen, 2004), depending on complexity and design. This paper confirms that usability doesn’t influence intention to use MA for the global sample. Application are simple to use and obvious. Nevertheless, we found a direct link between usability and loyalty, confirming study done by Hoehle and Venkatesh (2015). A non-significant relationship between usability and intention to use implies that intention to use a MA might depend on other factors than usability (Belanche et al., 2012). Many researchers in different contexts (i.e., m-banking and m-commerce) tested and confirmed the impact of trust on technology adoption and use (Bansal et al., 2016; Venkatesh et al., 2011). The development of mobile technology has resulted in privacy concerns about the disclosure of personal data (Bansal et al., 2016). However, the booking of a table using mobile devices requires a minimum of personal data. Therefore, the impact of trust on the intention to use is not significant, indeed, users perceive little risk when using the MA as no financial transaction is required (Hillman & Neustaedter, 2017). On the other hand, this study confirms the impact of trust on loyalty in accordance with previous studies (Hong & Cho, 2011; Hong, 2018). Furthermore, the positive effect of loyalty on intention to use is confirmed, thus, as expected, loyal users intend to use a product or service more likely (Balakrishnan & Griffiths, 2018). Researchers who have empirically examined the relationship between trust and loyalty found that trust is a key determinant of brand loyalty (Chaudhuri & Holbrook, 2001; Flavián, Guinalíu, & Gurrea, 2006; Lin & Wang, 2006). In line with m-commerce studies, prior research in m-booking has suggested that users will not become involved in MA use, if they do not trust them, and that trust plays a major role in users’ attitudes and loyalty (Ozturk et al., 2017). This paper also presents an analysis of the moderating role of culture. Indeed, the originality of this research lies in the cross-cultural comparison of French and Russian users. The two countries are different by their economic development, purchasing power of population, number of smartphones users, and number of restaurants but applications studied propose similar features.

Few research discuss the acceptance of technology in Russia (Ivanov, Webster, & Garenko, 2018), despite the ability of local developers to create different low-cost MAs. In terms of technology, Russia represents specific markets by having its own searching engine and social networks (Gokhberg & Sokolov, 2017). Only two relationships of the model are impacted by culture: (1) trust and intention to use (validated in Russia, rejected in France) and (2) usability and loyalty (validated in France and rejected in Russia). Culture is viewed from several different perspectives in technology use and adoption research (Hofstede, 2001; Hofstede & Minkov, 2010). The impact of trust on intention to use is closely connected with attitudes to privacy that differ from country to country (Lee & Rha, 2016; Wu et al., 2012). Smith Milberg and Burke (1996), by investigating cultural influences on attitudes to privacy, found that it depends on country’s privacy regulation. As a result, in countries with no privacy regulation but with high government involvement, concerns about privacy are at a low level. Thus, no trust is involved in the disclosure of personal data. When privacy regulation increases, privacy concerns also increase, up to the point where privacy regulation is at the
highest level. Privacy regulation in the European Union (Hodges, 2018) and France (Gauzente, 2003) confirms the results regarding the relationship between trust and intention to use. On the other hand, Russian privacy regulation (Gudkov, Dedkova, & Dudina, 2018) leaves a certain amount of room for interpretation, meaning that a high level of trust is needed to reduce privacy concerns, even if the use of a MA does not involve a financial transaction. In this research, the authors used two MAs. The difference in design, functionality, and branding (Stoll, Pina, Gary, & Amresh, 2017) significantly influenced attitudes toward MA usability and, consequently, the relation between usability and m-Loyalty (Hoehle & Venkatesh, 2015; Shitkova et al., 2015). The strong effect identified in the French group might depend on the greater usability – high in France and low in Russia—in relation to MA loyalty. French users’ loyalty correlates with level of satisfaction with an application and is in line with prior studies (Belanche et al., 2012; Kim & Eom, 2002). The authors found that no effect of usability on loyalty in the Russian group correlates with trust transfer (Yadav et al., 2016). In other words, attitudes toward a MA were positive because of generally positive attitudes toward the brand of the MA as a well-known brand for restaurant services.

CONCLUSIONS

The important approach of this research is a cross-cultural comparison between France and Russia in the restaurant industry. Indeed, this is the first study comparing Russia with Western country. The purpose of the research was mainly to analyze if cultural differences could affect the relationship between the variables of the model. Findings are useful for both theory development and practice. The study investigated (1) trust as an important variable for technology adoption; (2) loyalty, that is a desired marketing outcome; (3) usability, which is a major element of a MA. Each result was expressed for three groups: Global sample, Russian and French groups to explore potentials differences. From a theoretical point of view, the authors highlighted key roles, such as economic development, purchasing power, politic stability or the respondent’s profile (older in Russia and with management position). Results confirm that trust impacts intention to use (Bansal et al., 2016; Hillman & Neustaedter, 2017), but only for the Russian group, and not for the global sample and for the French group. Thus, stronger legal regulation in France decreased the concerns and significance of trust when less clear legislation in Russia requires trust in technology. On the opposite, usability impacts loyalty, as other researches confirmed (Belanche et al., 2012; Kim & Eom, 2002) for the global sample and the French group, but not the Russian one. From a managerial point of view, the understanding of usability constructs could help developers to improve MAs and understanding loyalty could help restaurant managers in their marketing decision making. Cultural comparison showed the similarities and differences of intention to use a MA, which might be interesting for international MA providers. However, this research has some limitations. First, in order to be consistent, the authors decided to submit the questionnaire to users from two major MAs (one in France and one in Russia) with identical functionalities, to guarantee that respondents would use the similar tool in their local country. Nevertheless, some specific design, characteristics and promotions of each MA can influence the user’s perception of the MA. Second, respondents are representatives of the middle and upper-middle classes in both countries surveyed, and they are therefore not representative of the global population. Finally, the study focused on only two countries and the two capitals, so results could differ in other countries with different cultures or in smaller cities.

FUTURE RESEARCH
It would be useful to test the model in other domains such as the tourism (e.g.: museums booking), the hospitality industry (e.g.: hotels booking) or the accompanying services (e.g.: taxi). Other research could also replicate the model using other MA for restaurants. In addition, the model should be tested in countries with different culture such as the Asian culture (China/Japan/South Korea) or the Anglo-Saxon culture (United States of America/United Kingdom).

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Key Figures 2018, Paris Ile-de-France CCI - IAU île-de-France -Paris/Region Entreprises


https://gni-region-sud.fr/
http://www.cci-paris-idf.fr/
### APPENDIX 1

**Table A.1. Measurement items**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Item</th>
<th>Question</th>
<th>Theoretical Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention to use</td>
<td>ITU1</td>
<td>1. I will always try to use a mobile application in my daily life.</td>
<td>Venkatesh, Thong, and Xu (2012).</td>
</tr>
<tr>
<td></td>
<td>ITU2</td>
<td>2. I plan to continue to use a mobile application frequently.</td>
<td></td>
</tr>
<tr>
<td>Usability</td>
<td>USABILITY1</td>
<td>1. Overall, I think the mobile application is designed well.</td>
<td>Hoehle and Venkatesh (2015); Venkatesh and Ramesh (2006).</td>
</tr>
<tr>
<td></td>
<td>USABILITY2</td>
<td>2. Overall, I think the mobile application structures information effectively.</td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>TRUST1</td>
<td>1. The information a mobile application provides is always honest.</td>
<td>Palmatier (2008).</td>
</tr>
<tr>
<td></td>
<td>TRUST2</td>
<td>2. The mobile application is trustworthy.</td>
<td></td>
</tr>
<tr>
<td>Loyalty</td>
<td>LOYALTY 1</td>
<td>1. I make more than 50% of my restaurant reservations using a mobile application.</td>
<td>Hoehle and Venkatesh (2015); Sirdeshmukh et al., (2002).</td>
</tr>
<tr>
<td></td>
<td>LOYALTY 2</td>
<td>2. I use a mobile application the very next time to choose a restaurant.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LOYALTY 3</td>
<td>3. I encourage friends and relatives to be customers of the mobile application.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LOYALTY 4</td>
<td>4. I will use more services the mobile application offers in the next few months/years.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LOYALTY 5</td>
<td>5. I consider the mobile application to be my first choice.</td>
<td></td>
</tr>
</tbody>
</table>

### APPENDIX 2

**Table A.2. Average value extracted**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Average Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention to Use</td>
<td>0.825</td>
</tr>
<tr>
<td>Loyalty</td>
<td>0.735</td>
</tr>
<tr>
<td>Trust</td>
<td>0.884</td>
</tr>
<tr>
<td>Usability</td>
<td>0.910</td>
</tr>
</tbody>
</table>

### APPENDIX 3
Table A.3. Fornell-Larcker criterion

<table>
<thead>
<tr>
<th></th>
<th>Intention to Use</th>
<th>Loyalty</th>
<th>Trust</th>
<th>Usability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention to Use</td>
<td>0.908</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loyalty</td>
<td>0.737</td>
<td>0.857</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>0.543</td>
<td>0.673</td>
<td>0.940</td>
<td></td>
</tr>
<tr>
<td>Usability</td>
<td>0.507</td>
<td>0.596</td>
<td>0.705</td>
<td>0.954</td>
</tr>
</tbody>
</table>

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