THE INFLUENCE OF PERCEIVED VALUE ON SATISFACTION IN E-HAILING SERVICES: TIME AS MODERATING EFFECT

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Abstract:
In the last couple of years, Millennials have emerged as the largest user segment of e-hailing services. Although e-hailing services have prospered, there is not much research that fully explores Millennial users’ satisfaction, particularly on e-hailing services. One of the most influential factors leading to users’ satisfaction in e-hailing services is perceived value. The purpose of this study is to determine the aspects of perceived value (economic value, convenience value, symbolic value, sustainability value and hedonic value) that lead to users’ satisfaction and whether time availability moderates the relationship between convenience value and satisfaction. The Partial Least Squares analysis on the data collected from 493 Millennials revealed that economic value, convenience value, sustainability value and hedonic value had a significant impact on satisfaction but not symbolic value. Interestingly, time availability was not found to moderate the relationship between convenience value and satisfaction. The findings are duly discussed in this paper.

Keywords:
Collaborative Consumption, Time Availability, Satisfaction

Introduction
The advancement in mobile technologies has provided users with a new way of hailing their transport from one destination to another. The organisation has taken the advantages of mobile technologies and offer users a platform to get their transport. Instead of hailing a transport at the bus stop or by the roadside, users could stay at any place convenient to them wait for their ride to arrive at their doorstep. Today, e-hailing services in Southeast Asia has been forecasted to reach $20.1 billion in revenue by 2025 (Newcomer & Lee, 2018). Such figure not only pose
how profitable the e-hailing services are but also pose adoption opportunities of e-hailing services in both developed or developing countries in Southeast Asia.

Although e-hailing has attracted a diverse group of consumers, Millennials who are born between 1980 to 2000 (Gurau, 2012) is the generation who uses collaborative consumption especially e-hailing services the most (Hwang & Griffiths, 2017; Mittendorf, 2018). Despite being the generation who have adopted e-hailing services, the Millennials have their characteristics. They have the highest expectation for the brand as compared to other generation cohorts (Solomon, 2018). Due to this, to satisfy them as compared to other generation will be more difficult. Besides, they could not tolerate tolerance for delays (Sweeney, 2006) because time is very precious for them. Due to this, they expect services are instant when they needed the services. Recent research publications have identified users’ motivation towards other collaborative consumption services such as car-sharing and home-sharing (Arteaga-sánchez, Belda-ruiz, Ros-galvez, & Rosa-garcia, 2018; Möhlmann, 2015). Although these publications have identified users’ motivation in using collaborative consumption and its impact on users’ satisfaction, however, there are minimal empirical studies dedicated to e-hailing services, especially those focusing Millennials.

Therefore, this study aims to

1. Examine the relationship between perceived value (economic value, convenience value, symbolic value, sustainability value and hedonic value) and users’ satisfaction; and;
2. To investigate the impact of users time, which either accentuate or reduce the impact of convenience value on satisfaction.

Two research questions were proposed in line with the above aim:
RQ1: What is the relationship between perceived value (economic value, convenience value, symbolic value, sustainability value and hedonic value) and users’ satisfaction?
RQ2: Does time moderate the relationship between convenience value and satisfaction.

Underlying Theory and Development of Research Framework
Perceived value is an established concept introduced in consumer behaviour (Gallarza, Arteaga, Del Chiappa, Gil-Saura, & Holbrook, 2017). According to Zeithaml (1988), perceived value is defined as “consumer’s overall assessment of the utility of a product based on the perception of what is received and what is given” (p.14). Initially, the perceived value was introduced by Sheth, Newman and Gross (1991) and known as Theory of Consumption Value. This theory dominates the conceptualisation of perceived value. It stipulates that the multifaceted consumer choice of whether to buy or not to buy, to choose or not to choose one product or services over another and to choose one brand over another brand constitute a variety of forms of value. Based on the Theory of Consumption Value, Sweeney and Soutar in the year 2001 developed the PERVAL Theory which introduces four dimensions of perceived value namely price value, quality value, social value and emotional value. In other words, consumers assess products or services not just the functional terms of expected performance, value for money and versatility but also in terms of the enjoyment or pleasure derived from the product and more importantly the social consequences of what the product communicates to others. These dimensions include both utilitarian and hedonic components. This combination is important as both products, and services appeal is an “amalgam of rational and emotional factors” (Sweeney & Soutar, 2001). As a result, PERVAL Theory is more relevant to be applied
in CC services because PERVAL Theory can capture both pre and post experiences of a consumer in terms of utilitarian and hedonic components. Besides, PERVAL Theory is one of the theories that tend to have flexibility and better reliability for measuring users' perceived value.

Besides PERVAL Theory's four dimensions, it is also crucial to add sustainability value, especially in CC services. According to Botsman and Rogers (2011), sustainability value is relevant in the CC context. It could decrease the environment's negative impact by reducing end products' production and utilising raw materials. Interestingly, sustainability value was scarcely mention nor tested empirically in many CC services studies with the exception of Benoit, Baker, Bolton, Gruber and Kandampully (2017); Hamari, Sjoklint, and Ukkonen (2016); and; Möhlmann, (2016). Therefore, instead of concentrating merely on the four PERVAL dimensions, sustainability value was also added into this study.

In understanding CC Services, the notions underlying PERVAL theory showed that perceived value is one of the determinants that could lead to customer satisfaction. The relationship between perceived value and satisfaction has been discussed by researchers ‘in recent decades’ (Prebensen, Kim, & Uysal, 2015). In other words, whether a consumer is satisfied with the product or services would be driven by one’s beliefs regarding the value(s) that can be derived from the consumption (Yeap, Ong, Yapp, & Ooi, 2019). Therefore, what are the benefits that could be derived from using CC services.

Economic Value
According to Hamari et al. (2016) and Mohlmann (2015), economic value is one of the motivation and benefits consumers gain while using CC services compared to other traditional services. Therefore, economic value has a positive influence on satisfaction. 

H1: Economic value is positively related to satisfaction with e-hailing services

Convenience Value
Convenience value has become a significant attractor, especially for mobile technology-related services because technology helps to fulfil users’ tasks efficiently (Anderson & Srinivasan, 2003). E-hailing services are instant, and people appreciate the rapid access to services compare to traditional services. Therefore, convenience value will contribute towards customers’ satisfaction.

H2: Convenience value is positively related to satisfaction with e-hailing services

Symbolic Value
Symbolic value is one of the positive outcomes in CC services (Hwang & Griffiths, 2017). According to Mohlmann (2015), consumers who seek for symbolic value were more likely to be satisfied with the CC services. Therefore, symbolic value will have a positive influence on satisfaction.

H3: Symbolic value is positively related to satisfaction with e-hailing services

Sustainability Value
According to Hamari et al. (2016), sustainability value is an essential factor for users who are environmentally concerned. Sustainability is taken into consideration in this study the Millennials who use e-hailing services are generally concerned about sustainability value (Naderi & Van Steenburg, 2018) will lead towards satisfaction when they use e-hailing...
services. Thus, the following hypothesis is proposed:

**H4:** Sustainability value is positively related to satisfaction with e-hailing services

**Hedonic Value**

E-hailing services allow users to enjoy the car ride with their family and friends and experience riding in different types of car from one destination to another destination. These pleasurable and fun experiences evoke pleasant and positive feelings that will lead to a higher degree of satisfaction. (Hsiao, Chang, & Tang, 2016). Therefore, it can be surmised that hedonic value will have a positive influence towards satisfaction.

**H5:** Hedonic value is positively related to satisfaction will e-hailing services

**Time**

Time is being described as the “ultimate resource” because once it is spent, it cannot be replaced (Moon & Chen, 2013). Users who have limited time consider themselves busy. E-haling services enable users to reach to their destination faster and allow users to estimate their time upon arrival as well as depart from the destination (Wang, He, Yang, Oliver Gao, & Gao, 2016). In other words, e-hailing services save users time and enhance their satisfaction. Furthermore, as e-hailing provide users with convenience value that lead to users’ satisfaction, this relationship will be strengthened especially for users who have limited time availability. Therefore, the effect of convenience value and satisfaction will be stronger for those users who have limited time.

**H6:** The positive relationship between convenience value and satisfaction will be stronger when the time availability is low.

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Figure 1: Research Framework
Research Methodology

Sample
The sample for this study consist of Generation Y or Millennials who were born between 1980 to 2000 (Gurau, 2012) and are aged between 19-39 year old as of 2019. Millennials were chosen for this research because this generation is the segment that most appealing towards collaborative consumption (Hwang & Griffiths, 2017). The Millennials experience in using GrabCar will be the context of the study because GrabCar is one of the oldest e-hailing services provider in Malaysia compared to other e-hailing services.

Measurement
The items/measures of this study were adapted from several resources – perceived value: economic value (Tussyadiah, 2015); convenience value (Sigala, 2006); symbolic value (Teo & Pok, 2003); sustainability value (Hamari et al., 2016); hedonic value (Sweeney & Soutar, 2001); satisfaction (Ruiz, Gremler, Washburn, & Carrión, 2008) and time (Verhoef & Langerak, 2001). All the items for perceived value and satisfaction were measured using a 5-point Likert scale ranging from 1=strongly disagree and 5=strongly agree. On the other hand, time as a moderator was measured using a 7-point scale ranging from 1=strongly disagree to 7= strongly agree.

Data analysis
Before hypothesis testing, SPSS 23 was used to identify outliers and compute the descriptive statistics for the demographic profile. This was then followed by SmartPLS version 3.2.8 for the partial least squares analysis (Ringle, Smith, & Becker, 2015)

Results

Respondents’ Profile
Out of 493 respondents, 64.3% of the respondents are female and 35.7% percent are male. Most of the respondents are Malay (66.5%), Chinese (19.1%), others ethnic (9.3%) and Indian (5.1%). As for GrabCar usage experience, more than half of the respondents (51.3%) have 1-2 years experiences in using Grab car, while both less than 1 year experience is 23.1% and 3-4 year experience carries 23.3%. However, only 2.2% of the respondents have more than 4 years of experience in using GrabCar services.

Common Method Bias
As data was collected from a single source (experienced users of e-hailing services), there is a need to identify whether common method bias has occurred (Tehseen, Ramayah, & Sajilan, 2017). Due to this, several questions about users’ cognitive rigidity (Oreg, 2003) were collected. However, this study shows no evidence of common method bias because the differences between these R² is 0.002.

Measurement Model
The measurement model of the construct validity was assessed through convergent and discriminant validity. All indicator loading were above 0.50 (Byrne, 2016); Average variance extracted (AVE) for each latent variable exceeded the threshold value of more than 0.50 (Hair, Hult, Ringle, & Sarstedt, 2017); and the composite reliability scores exceeded 0.70 (Hair et al., 2017). Table 1 shows the results of the convergent validity assessment.
### Table 1: Convergent Validity Assessment

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Loading</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience Value</td>
<td>CV1</td>
<td>0.719</td>
<td>0.882</td>
<td>0.652</td>
</tr>
<tr>
<td></td>
<td>CV2</td>
<td>0.820</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CV3</td>
<td>0.871</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CV4</td>
<td>0.813</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic Value</td>
<td>EV1</td>
<td>0.863</td>
<td>0.918</td>
<td>0.736</td>
</tr>
<tr>
<td></td>
<td>EV2</td>
<td>0.890</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EV3</td>
<td>0.806</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EV4</td>
<td>0.872</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hedonic Value</td>
<td>HV1</td>
<td>0.795</td>
<td>0.914</td>
<td>0.679</td>
</tr>
<tr>
<td></td>
<td>HV2</td>
<td>0.824</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HV3</td>
<td>0.813</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>HV4</td>
<td>0.850</td>
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<tr>
<td></td>
<td>HV5</td>
<td>0.838</td>
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</tr>
<tr>
<td>Satisfaction</td>
<td>SAT1</td>
<td>0.782</td>
<td>0.911</td>
<td>0.631</td>
</tr>
<tr>
<td></td>
<td>SAT2</td>
<td>0.825</td>
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<tr>
<td></td>
<td>SAT3</td>
<td>0.813</td>
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<tr>
<td></td>
<td>SAT4</td>
<td>0.749</td>
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<td></td>
<td>SAT5</td>
<td>0.833</td>
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<td></td>
<td>SAT6</td>
<td>0.760</td>
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</tr>
<tr>
<td>Sustainability</td>
<td>STV1</td>
<td>0.852</td>
<td>0.922</td>
<td>0.702</td>
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<tr>
<td>Value</td>
<td>STV2</td>
<td>0.828</td>
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<td></td>
<td>STV3</td>
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<td></td>
<td>STV4</td>
<td>0.804</td>
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<td></td>
<td>STV5</td>
<td>0.824</td>
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<td></td>
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<tr>
<td>Symbolic Value</td>
<td>SV1</td>
<td>0.814</td>
<td>0.882</td>
<td>0.605</td>
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<tr>
<td></td>
<td>SV2</td>
<td>0.822</td>
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<td></td>
<td>SV3</td>
<td>0.836</td>
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<td></td>
<td>SV4</td>
<td>0.545</td>
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<tr>
<td></td>
<td>SV5</td>
<td>0.830</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>TIME1</td>
<td>0.918</td>
<td>0.902</td>
<td>0.754</td>
</tr>
<tr>
<td></td>
<td>TIME2</td>
<td>0.884</td>
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</tr>
<tr>
<td></td>
<td>TIME3</td>
<td>0.800</td>
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</tbody>
</table>

To ascertain discriminant validity of the measurement model, Heterotrait-Monotrait ratio of correlations (HTMT) was used and all the inter-construct correlations were less than the threshold value 0.85 (Kline, 2015). Table 2 shows the results of the discriminant validity.
Table 2: Discriminant Validity

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Convenience</td>
<td></td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Economic Value</td>
<td>0.213</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Hedonic Value</td>
<td>0.512</td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Satisfaction</td>
<td>0.522</td>
<td>0.447</td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Sustainability</td>
<td>0.171</td>
<td>0.469</td>
<td></td>
<td>0.477</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Symbolic Value</td>
<td>0.253</td>
<td>0.437</td>
<td>0.561</td>
<td>0.340</td>
<td>0.473</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Time</td>
<td>0.146</td>
<td>0.104</td>
<td>0.255</td>
<td>0.188</td>
<td>0.142</td>
<td>0.265</td>
<td></td>
</tr>
</tbody>
</table>

**Structural Model**

To obtain the path coefficients and the corresponding t-values, a bootstrapping procedure of 5000 samples was used. The variance inflation factor (VIF) scores for all the variables were within the threshold less or equal to 5 (Hair et al., 2017).

In this study, 51% of variance in satisfaction ($R^2=0.507$) can be explained by the model. The variables that are significant and have a positive effect on satisfaction were convenience value ($\beta=0.187; t=4.850$), economic value ($\beta=0.148; t=3.684$), hedonic value ($\beta=0.536; t=12.694$) and sustainability value ($\beta=0.073; t=1.890$). Although symbolic value ($\beta=-0.092; t=2.169$) was found to be significant, nevertheless, the relationship turned out to be an inverse one due to the negative sign, thus rendering the effect of symbolic value on satisfaction as not significant in this study. In this study, it was found that hedonic value has a medium effect ($f^2=0.332$) while convenience value ($f^2=0.056$) and economic value ($f^2=0.033$) have a small effect. However, sustainability value has no effect ($f^2=0.008$) on satisfaction. As for the moderator, convenience value and satisfaction is not moderate by user’s limited time availability. Time does not strengthen the relationship between convenience value and satisfaction.

**Discussions**

Hedonic value was found to be the most salient determinant towards satisfaction among the Millennials. This relationship indicates that the Millennials in Malaysia experience enjoyment and pleasure when riding on the GrabCar especially with their friends and family. Convenience value is consistent with the finding of previous researchers e.g. Hamari et al. (2016) and Milanova and Maas (2017). Economic value findings are consistent with Kim and Jin (2018) and Möhlmann (2016) in which the Millennial use e-hailing services due to cost saving. Sustainability value was found to have a significant effort on user satisfaction. This finding is consistent with previous researcher Arteaga-sánchez et al. (2018) where they also found that sustainability value lead to users’ satisfaction. The finding on symbolic value in this study contradicts findings of previous studies in which symbolic value was not found to result in users’ satisfaction. This may be due to the usage of GrabCar becoming a standard way of commuting among the Millennials to the extent of eliminating any sense of image enhancement that can provide symbolic value to the user.

The moderating result is consistent with Chang, Yan and Eckman (2014) that time does not have a moderating effect. One reason could be that the Millennials sampled in this study, on average, were 23 years of age, indicating that most of them are still relatively young college/university-going individuals who have yet to fully transition into busy working life. As of now, most of these individuals still experience a carefree and relaxed lifestyle instead
of a frantic lifestyle that comes with the pressures of working life. Hence, their perception of time availability may not have affected the positive impact of convenience value on satisfaction with e-hailing services. In short, these Millennial users have yet to reach a stage where time is precious for them (Chang et al., 2014; Macan, Shahani, Dipboye and Phillips, 1990).

**Theoretical and Managerial Implications**

Theoretically, the findings have shown that it is essential to include sustainability value into CC services, particularly in e-hailing services. In short, if future researchers want to focus on the CC perspective and use PERVAL theory as one of their underlying theories, they need to include sustainability value into their study. Furthermore, this study also proved empirically that economic value, hedonic value, and convenience value led to users’ satisfaction in e-hailing services.

The significant effect of perceived value on users’ satisfaction implies that service providers should take measures to develop user satisfaction by strengthening users’ perceived value. For example, the e-hailing organisation can emphasise the convenience, relaxed mode and pleasure as riding e-hailing services as part of their marketing communication strategies. Apart from that, the e-hailing organisations can partner with non-profit organisations on sustainability campaigns, offering rebate and promotion to appreciate the users.

**Future Research and Directions**

This study has a few limitations that should be borne in mind. As this study focused only on the Millennial generation cohort, future studies can consider other generation cohort and confirm whether the same values that result in satisfaction among the millennials apply. In addition, comparison studies can also be done between different generation cohorts in the same country or other countries because e-hailing is still growing rapidly.

**References**


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