Critical Success Factors (CSFs) for Luxury Cars: an empirical study

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Abstract: Luxury cars represent an important segment of Luxury, and since vehicles are quite complex product with respect to "high-end furniture" "personal luxury goods" or "fine dining" they are quite peculiar from a business perspective. This research aims to understand whether there could be peculiar Critical Success Factors (CSFs) for luxury car manufacturers, and eventually know how they differ from the list of CSFs provided by literature for the general luxury market. Moreover, the study investigate whether there are possible distinct clusters of consumers which show a common pattern in valuing these CSFs. The study has been able to craft a new model where Critical Successful Factors for luxury cars are presented, meaning those characteristics essential for winning competition of other companies that also constitute as differentiators from the mass market vehicles. The validity of the model has been tested on more than 400 real luxury car owners that confirmed the importance of the attributes included. Further analysis of the collected responses has allowed to identify five key factors that encapsulate the meaning of all the variables introduced. The factors identified are the following: technical aspects, social appeal, brand origin, uniqueness and innovation. Leveraging on these findings, it has been possible to structure the model in a new layout on two levels. On the first one there are only the five key factors and provide a macro perspective, while on the second level there is a group of CSFs for each factor describing luxury car characteristics with an additional level of detail. Interesting implications for academics as well as managers have been discussed, together with limitations and future suggestions for research.

Keywords: Automotive; Luxury; Survey; Critical Success Factors (CSFs)

I. INTRODUCTION

The luxury market in 2022 is worth about 1.3 trillion dollars and in the last few decades it has proven to be one of the fastest growing sectors globally. Despite the 2008 crisis, it has recorded an average year-on-year increase of around 6% from 1995 to 2019 (Bain &C., 2019). Even with respect to the Covid-19 pandemic, already in 2021 the market was able to recover pre-pandemic volumes (Bain & C., 2021).

The automotive industry is one of the most important luxury sectors as well as one of the most important manufacturing sectors for the global economy. In the Luxury domain, the car accounts for about 50% of the total value, and together with personal goods and hospitality accounts for about 80% according to Bain, 2021).

Even today it is difficult to give a definition of luxury, but over the years various academics have tried to outline some peculiar attributes of products and services belonging to this dimension and are still considered as a reference today (e.g. premium quality, brand reputation, rarity, prestige, heritage of craftmanship et cetera).

In this study we want to investigate whether the list of attributes associated with luxury is still valid for the specific context of luxury cars, given

The importance of the segment within the category, and possibly identify which are the most relevant critical success factors to date.

The empirical study conducted is based on a survey that was specifically designed and distributed to hundreds of consumers around the world. Despite the limitations of the methodology adopted, the study covers a significant gap in the literature and important contributions emerge for the luxury car sector.

The manuscript is divided as explained below. The second chapter reports how Luxury is described in the literature, along with a deepening study about luxury cars market. Subsequently, in the third chapter the theoretical gap and the objective of the work are introduced, with details about methodological tools used.

The fourth chapter provides a preview of the results of the study, with a hint of the theoretical and managerial implications. In the conclusions, we present some possible limitations of the study and some ideas for further research.

II. THEORETICAL BACKGROUND

I.

B.A. Luxury industry

The word "luxury" is difficult to define for two reasons. On the one hand, what makes "luxury" is quite subjective, as it happens when we say that something is "good" or "beautiful" ("de gustibus non disputandum est", is a Latin maxim meaning that in matters of taste, there can be no disputes).

But even if we could objectively reach a consensus on the meaning of this word "luxury", we would realize that the meaning could change over time as has already happened over the past centuries. In ancient Greece it had a negative meaning, while for the Romans "luxus" meant "soft or extravagant living, sumptuousness, opulence" (Brun and Castelli, 2013).

After the French revolution, it was the emergence of the bourgeoisie that radically transformed its meaning, so that the concept of luxury was associated with a status symbol, a sense of contentment and satisfaction of non-fundamental needs for human life. In fact, it was in the nineteenth century that this kind of products spread in Europe, distinguishing from the mass market for some particular characteristics (e.g. high quality) to satisfy the lifestyle of the elite of the population of the time.

Then, after industrialization, brand value emerged, and the desire of customers to be involved in memorable experiences increased (Brun & Castelli, 2008). At the same time, luxury has become more democratic, but also more complex in its articulations. It becomes increasingly dependent on the context in which it is offered (Wiedmann et al., 2009), while maintaining a strong subjective dimension (Kapferer & Laurent, 2015).

The literature review followed a non-systematic process, but it allowed us to outline a quite exhaustive list of attributes to characterize what is "luxury" today. The attributes are as follows:

- Premium quality (e.g. using superior materials and maintaining elevated standards of conformity along the whole Supply Chain);

- Heritage of craftmanship (i.e. leveraging on expertise and a human touch in production);

- Exclusivity (e.g. using naturally scarce materials, creating limited editions, creation of waiting lists, restricted distribution);

- Emotional appeal (i.e. triggering a sense of dream, enhanced shopping experience);

- Uniqueness (i.e. making every product different from each other using extreme personalization and hand-made details);

- Brand reputation (i.e. conveying the idea of world-class excellence);

- Superior performance (i.e. distinguishing from mass market goods and services, e.g. best-in-class technical performance and innovation);

- Country or region of origin (as a signal of excellence for a certain product categories);

- Style and design (as a distinctive product characteristic, e.g. recognizable product thanks to iconic timeless designs, patterns & colours);

- Creation of a lifestyle that embodies the values and the personality of the brand.

- Brand authenticity (i.e. referring to being trustworthy and consistent with the mission of the Maison).

These attributes are not always present in a luxury product/service. In some segments such as fashion, the brand could be very important, while in other sectors such as hospitality, the extreme quality of

service and exclusivity could play a more decisive role. Furthermore, even in the same segment someone could find brands that offer products that could still belong to luxury, but which have very different value attributes, due to the different positioning or strategy of the brand.

On the one hand, Marketing defines them as "attributes that consumers associate with luxury", and they are important to study the reasons to buy (Kapferer & Michaut, 2016; Sjostrom et al., 2016). On the other hand, the world of Operations and Supply Chain Management considers them critical success factors (CSF) (Brun & Castelli, 2013). In this case, the perspective adopted is the corporate-managerial one, and therefore the attention is focused on the choices that a company should make. Thus, CSFs could be defined as product or service design features that a company must pursue to succeed in a specific market (Rockart, 1986).

~~C.~~B.   *Luxury cars*

The automotive sector is one of the most important in the world from an economic point of view as more than 90 million vehicles are sold each year (OICA, 2019). Furthermore, it has a significant impact on the mechanisms that regulate the markets, in the field of energy consumption and environmental emissions, on the safety of travel and also it characterizes the social status of a person (Nieuwenhuis & Wells, 2015).

For these reasons, even in the luxury market, cars represent about 50% of the total value of the luxury industry (Bain & C., 2021).

From the analysis of the literature it emerges that the attributes for luxury (and for luxury cars, consequently) can be described on a multi-layered model, as follows:

A1. Technical

    B1. Performance

    B2. Premium Quality

    B3. Craftmanship

        C1. Pure craftmanship

        C2. Innovative Production

    B4 Advanced Technology

A2. Exclusivity

    B5. Price

    B6. Limited Edition

    B7. Scarcity of materials

    B8. Personalization

A3. Emotional Appeal

    B9. Collaborations

    B10. Service Level

    B11. Community Belonging

    B12. Embodyment of a lifestyle

    B13. Style & Design

    B14. Global Reputation

    B15. Nostalgia

    B12. Pedigree

        C3. Country of Origin

        C4. Heritage

        C5. Results in competitions

        C6. Founder's story

~~II.~~III.   OBJECTIVE AND METHODS

Although luxury is studied from different perspectives (e.g. marketing vs operations & supply chain), it seems that there is a lack of specific contributions for different product/service segments (e.g. cars vs personal goods). For example, to the best of the authors' knowledge, a list of specific attributes (or Critical Success Factors) for the automotive world seems to be missing. For example, the behavioral differences described more than 10 years ago by Castelli and Brun (2013) have never been validated in the specific context of luxury cars.

This study addresses these issues by trying to cover this gap, and proposes to validate a model that describes the motivations that drive a person to consume a luxury car (see Chapter II.b). Therefore, from a luxury car consumer perspective, we will try to understand if the results can be influenced by the type of car, the geographical origin of the customers and/or the car parent company.

In light of the gaps exposed and the objectives of the study, two main research questions drives the research:

RQ1: What are the specific Critical Success Factor for luxury car manufacturers? How are they different from the list of attributes we can find in the literature about the general luxury market?

RQ2: Is it possible to identify distinct clusters of consumers which show a common pattern in valuing the single attributes?

To answer these questions, the most appropriate research method is the survey, which makes it possible to analyze a sufficiently large sample so

that the results can be generalized to the entire population (Creswell, 2014).

The questionnaire is divided into 3 main parts. In the first part, some personal information is requested, obviously in compliance with privacy requirements: age, country of origin, specific info about the car they own. In the second part, the attributes of the model to be validated are presented, for which the interviewee should give a vote of importance according to a Likert scale. The Likert scales (usually with marks expressed from 1 to 5 or from 1 to 7) are a tool that is traditionally used in cases where the researcher wants to measure the relevance of one factor compared to others, in a quantitative way. In the last part of the questionnaire, interviewees were asked if there could be other important factors driving the purchase of a luxury car, which were not included in the list of attributes of our model, presented in the second part of the questionnaire. For this reason, this third part is composed of an open question where the respondent can express his or her thoughts.

The choice of the sample to interview is crucial, since we have to adopt the perspective of a real luxury car client, and not an ordinary person. Therefore, potential respondents were contacted through official owners clubs, private internet forums and private facebook groups where an administrator usually moderates discussions and ensures that the club is made up of real luxury car owners.

During the data collection campaign, 447 responses were collected from users aged between 18 and 74. Main countries of origin are North America and Europe, while it was difficult to collect contacts from other geographical areas such as Asia and the Middle East because communication and owners aggregation tools are different from Western ones.

Before the analyses, data were cleaned and several incomplete responses were excluded, reducing the number of valid responses to 439.

III. IV. DATA ANALYSIS

The study of collected data begins with a factorial analysis, i.e. a multivariate statistical method that allows to reduce the number of variables considered by grouping the latter into factors (Watkins, 2018). Subsequently and on the basis of the factor analysis, a cluster analysis was carried out to classify the customers on the basis of the answers given in the survey, in order to answer the second research question (RQ2).

A. Factor Analysis

Factor analysis can be exploratory or confirmatory. In this case an exploratory analysis was performed since it was not possible to define a relationship between the variables to be validated a priori. Therefore, the analysis begins with a factor extraction that was performed using the Principal Component Analysis (PCA) method, widely used in the literature. This process suggests keeping only the factors with eigenvalues greater than 1.

Many experts in this field criticize this criterion claiming that it is inaccurate (Costello & Osborne, 2005), therefore a scree test was performed, which is also based on the PCA scree plot (Fig. 1). It is noted that the curve flattens around the 4th factor, suggesting a number of factors from 4 to 6. The number 5 of factors to be considered was chosen because with 4 factors we would have had 3 attributes unaffected by any other factor, while in the 6-factor configuration there was one factor representing only a single variable ("price").

Subsequently, we decided to adopt a "varimax" orthogonal rotation method to simplify and clarify the data structure. The results of this phase of analysis are reported in Tab. 1. Subsequently, we adjusted that matrix to achieve more reliable results.

The validity of the results is supported by the fact that each factor is represented by a group of variables (Williams et al., 2010). Furthermore, the results show that no variable has a score higher than 0.5 for more than one factor, therefore it seems there are no cross-loading effects between factors and the interpretation of the results should be more robust (Costello & Osborne, 2005). The only variable that cannot be linked to any factor is the "price", because it has a too low loading factor. The issue related to this variable is relevant and probably due to the fact that the question was ambiguous; interpretations were different and now data cannot lead to reliable interpretations. For these reasons, we choose to exclude this variable from the analysis.
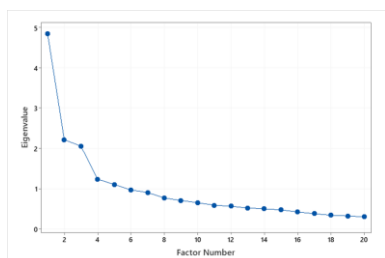
Fig. 1 – Scree Plot (PCA)

B. Cluster Analysis

Cluster analysis is a technique designed "to group similar observations into a number of clusters based on observed values of several variables for each individual" (Sinharay, 2010).

Thus, in this second chapter of analysis responses were analyzed with the aim of creating different clusters of luxury car customers, which show a similar behavior in front of the attributes presented to them.

The dataset used for this phase is represented by the matrix (439x5) obtained by multiplying the response matrix on the 20 attributes (439x20), with the load factor matrix (20x5) of the attributes for each factor identified during the factors analysis.

There are several methods to perform this analysis, in our case we choose to do it with a hierarchical method that does not require to pre-specify a number of clusters (Kassambara, 2017). Specifically, agglomerative clustering has been adopted, which operates according to a bottom-up approach: each object is considered a single cluster element, and iteratively the two most similar clusters are merged until a single large cluster is obtained (Bergman & Magnusson, 2001).

In this clustering operation, 3 choices must be made: similarity measurement, linkage method and final partition method.

To measure the similarity between two objects we choose to use the measure of the simple Euclidean distance. As linkage method, we choose the "complete" one (also called "furthest neighborhood method"), since it is one of the most common method and tends to create clusters with similar diameters. Finally, as a final partition method, it was chosen to stop the grouping iterations when the similarity level drops below a threshold of 50%.

IV. V. RESULTS

Through the survey, a series of attributes taken from the literature of "luxury" (in general) have been validated in the ~~this~~ specific context of cars. From the data processing procedure, 5 critical success factors emerge for the luxury car market, which are as follows:

- Social Appeal: influenced by variables mostly belonging to the social dimension, it can somehow explain a well-known attitude of "buying and consuming brands to gain social approval" (Waterman, 1982);

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- Brand origin: it is influenced by factors that are not related to the car itself, but are intrinsic to the brand, its land of origin and its history of successes;

- Technical aspects: influenced by variables that refer to technical specificities of the product and/or service offered to the customer;

- Uniqueness: it is a factor supported by variables such as "rarity of materials", "limited editions", "personalization" and "collaboration". It is a dimension that attracts customers eager to have a product that represents their values, their personality, their beliefs;

- Innovation: the variables that characterize this factor are "advanced technology and safety" and "innovative production". These variables are linked to each other and attract the interest of customers for brands that demonstrate that they invest in innovation and dare to explore innovative solutions.

From the celustering analysis we test the existence of different types of behaviours among luxury car owners. By using a statistical software have emerged multiple groups of people with similar pattern in valuing the key factors. Then, after a manual process implemented to aggregate similar clusters, we achieve the final results. Thus, Luxury car owners could be classified in 5 macro groups of people: Status symbols, Visionaries, Enthusiasts, Tailor made and Collectors.

V.VI. CONCLUSIONS

The present study allowed to identify the critical success factors (CSFs) for the luxury car market, identifying 5 possible consumer clusters of this market, covering a significant gap in the literature.

In this last section we describe some possible limitations and suggestions for future directions of improvement.

First, despite the methodology an issue could be related to the fact that we could not assure that respondents were real owners as respondents just filled an online form shared with official owners clubs, private Facebook groups and forums.

Moreover, the value assigned by respondents to the questions are subjective and there is the risk that the scoring is influenced by temporary external factors.

The validity of the results obtained regarding CSFs and client classification, are strictly limited to luxury automotive industry. There might be certain

number of similarities with complex durable goods such as luxury motorcycles and yachts but they are not yet proven and future researches could investigate the differences.

Lastly it is worth indicating possible line of development starting from the findings on this thesis. There are some variables that have not been initially and explicitly included and emerged only after the gathering of owners suggestions (e.g. the topic of sustainability). These, could be furtherly examined in future years to understand if their relevance has risen both from clients and customer perspective. Moreover, some initial data on the relationship between country of origin and consumer behaviour have been collected. Nevertheless, the geographical analysis did not lead to any worth results, probably due to the restrained number of answers coming from different parts of the world. Therefore, another interesting field of study could bthe a detailed analysis and comparative on the perception of the CSFs identified with a significant sample of data obtained also from those far countries in Asia and Middle-East.

In conclusion, the scope of this research present thesis has been quite broad but it reflected the necessity to deliver results covering multiple domains with the final aim of establishing a ground base knowledge in such under-investigated field. Each of the fields address by the research should be examined more thoroughly to obtain a complete understanding of luxury automotive world.

VII. ACKNOWLEDGMENTS

VI.VIII. REFERENCES

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Appendix Tab. 1 - Rotated factor loading matrix

[19]

Appendix A. FIRST APPENDIX

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Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Performance	0.134	0.023	0.622	0.091	0.025
Premium quality	0.070	-0.016	0.832	-0.026	0.072
Craftmanship	0.058	-0.207	0.753	-0.081	-0.03
Advanced technology & safety	0.099	0.234	0.337	-0.099	0.714
Innovative production	0.154	-0.108	0.041	-0.279	0.727
Price	0.231	0.309	0.162	-0.388	-0.342
Rarity of materials	-0.063	-0.196	0.021	-0.766	0.088
Personalization	0.135	-0.102	0.175	-0.695	0.233
Collaboration	0.117	-0.112	-0.233	-0.559	0.386
Limited edition	0.123	-0.104	-0.01	-0.739	0.007
Service level	0.135	-0.03	0.548	-0.136	0.376
Community belonging	0.758	-0.268	0.083	-0.067	0.096
Global reputation	0.761	-0.127	0.268	-0.022	0.091
Lifestyle	0.755	-0.181	-0.066	-0.136	0.101
Style and design	0.748	-0.14	0.154	-0.095	0.054
Country of origin	0.251	-0.599	0.025	-0.100	-0.145
Heritage	0.56	-0.489	0.118	-0.046	-0.04
Results in competitions	0.254	-0.52	0.028	-0.162	0.261
Nostalgia	0.092	-0.701	0.116	-0.124	-0.045
Founder history	0.259	-0.746	0.008	-0.100	0.081
Variance	2.982	2.3347	2.3102	2.2947	1.6445
Tot % Var = 0,578	0.149	0.117	0.116	0.115	0.082

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