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**RESEARCH ARTICLE/ ARAŞTIRMA MAKALESİ**

# AN EVALUATION MODEL BASED ON SUSTAINABLE DEVELOPMENT FOR THE ISTANBUL SHOPPING CENTER MARKET

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## Abstract

Istanbul shopping center market is currently facing considerable internal and external socioeconomic challenges. After the recent shopping center investment rush, problems (not only in the commercial sphere, but also in social and environmental spheres) have become more visible. In this study, an evaluative multi factor model for the Istanbul market that is based on the principles of "sustainable development" has been put forward. After the identification of the three major pillars (i.e. Commercial, Social and Environmental Pillars), what they mean for the shopping center business and their industry-related sub-factors (three for each pillar, nine in total) through literature review, valuable primary data has been gathered from two sources. First source is the face-to-face surveys based on the analytical hierarchy process model (AHP) conducted with the top decision-makers of twenty-one out of twenty-five members of the Council of Shopping Centers – Turkey (AYD) which have at least one self-developed Istanbul shopping center. The pre-determined pillars and sub-factors have been offered to AYD participants for pair-wise comparison and they strongly prioritized the Commercial Pillar (with 58.1%) above Social and Environmental Pillars. In the light of this outcome, a second primary research layer in the form of an expert panel to re-think the commercial stance of AYD participants is conducted. Accordingly, structured face-to-face interviews that contained two open-ended questions are realized with three sustainability experts. Their insights are in line with the findings of the literature review. This has led to assigning ethical protection to the Social and Environmental Pillars of the model against the risks created by the commercial practices.

**Keywords:** Shopping Centers, İstanbul, Sustainable Development, AHP, Decision-making.



# İSTANBUL ALIŞVERİŞ MERKEZİ PİYASASI İÇİN SÜRDÜRÜLEBİLİR KALKINMAYA DAYALI BİR DEĞERLENDİRME MODELİ

## Öz

Günümüzde İstanbul alışveriş merkezi piyasası çok ciddi iç ve dış sosyoekonomik güçlükler ile karşı karşıyadır. Yakın geçmişte yaşanan alışveriş merkezi yatırımı akınının ardından, sadece ticaret katmanıyla kısıtlı

kalmayacak şekilde, sosyal ve çevresel katmanlarda da sorunlar daha görünür hale gelmiştir. Bu çalışmada, İstanbul piyasası için "sürdürülebilir kalkınma" prensiplerine dayanan bir çoklu faktör değerlendirme modeli ortaya koyulmaktadır. Üç ana sacayağının (Ticari, Sosyal ve Çevresel Sacayakları) tespitinin, bunların alışveriş merkezi sektörü için ne anlama geldiklerinin ve sektör özelindeki alt başlıklarının (her bir sacayağı için üçer adet olmak üzere toplamda dokuz adet) literatür taraması vasıtasıyla belirlenmesinin akabinde, iki farklı kaynaktan değerli birincil veriler elde edilmiştir. İlk kaynaktan gelen veriler, analitik hiyerarşi prosesi modeliyle (AHP) kurgulanan anketlerin yüz yüze görüşme metoduyla Alışveriş Merkezleri ve Yatırımcıları Derneği (AYD) üyesi olan ve uhdelerinde en az bir adet kendi geliştirdikleri, İstanbul'da yer alan alışveriş merkezi bulunan şirketlerin üst düzey yöneticilerine uygulanmasıyla elde edilmiştir. Bu tanıma uyan yirmi beş şirketin yirmi biri ile bu süreç tamamlanmıştır. Önceden belirlenmiş sacayakları ve alt başlıklar, AYD katılımcılarına işbu ikili karşılaştırma yaklaşımı ile sunulmuş ve katılımcıların güçlü bir şekilde (%58,1 oranında) Ticari Sacayağını, Sosyal ve Çevresel Sacayaklarına karşı önceledikleri görülmüştür. Bu sonucun ışığında, AYD katılımcılarının baskın ticari duruşunu tekrar irdeleyebilmek için ek bir birincil araştırma daha kurgulanmıştır. Bu sefer bir uzman paneli oluşturulmuştur. Panel katılımcısı üç sürdürülebilirlik uzmanına, yüz yüze yapılandırılmış mülakat yöntemi ile iki açık uçlu soru yöneltilmiştir. Uzmanların yapıcı yorumlarının, en baştaki literatür taramasının sonuçları ile aynı düzlemde ilerlediği tespit edilmiştir. Bunun sonucunda, ticari uygulamaların yarattığı risklere karşı, geliştirilen modelde yer alan Sosyal ve Çevresel Sacayaklarına bir etik koruma tanımlanması yoluna gidilmiştir.

**Anahtar Kelimeler:** Alışveriş Merkezleri, İstanbul, Sürdürülebilir Kalkınma, AHP, Karar Süreçleri.



## 1- INTRODUCTION

A new, comprehensive and inclusive strategy is needed for the Istanbul shopping center market which poses a line of structural problems in the equally important commercial, social and environmental aspects. In order to support the realization of this new strategy, this article presents its own evaluative multi-factor model which is based on the principles of sustainable development. Distinctive from most of the existing evaluation methods, this new model is not solely focusing on the commercial metrics for private investors' sake (like a standard investment calculator) but, instead, acts as a wide-ranging, publicly-available and practical analysis tool for all stakeholders of the Istanbul shopping center market. Its main components are developed through extensive literature review –with more depth being generated through two unique primary research endeavors.

The model is comprised of two elements; (1) a simple visualization that also includes the necessary supplementary materials for understanding the model's inner structures and (2) a practical project checklist that is comprised of three major pillars (i.e. Commercial, Social and Environmental Pillars), their industry-related sub-factors (three for each pillar, nine in total) and twenty-six underlying headlines that are positioned below their respective sub-factors. Pillars, sub-factors and headlines are determined through literature review. These project variables correspond to a maximum checklist point of thirty-six. With a protective focus on Social and Environmental Pillars, it is suggested that a two-thirds qualified majority threshold (i.e. at least twenty-four points out of thirty-six) shall generate a rather sustainable outlook for future investment evaluations.

Primary data has been gathered from two sources; (1) a unique industry-wide survey that is based on Saaty's (2008) analytical hierarchy process (AHP) model and applied face-to-face to the majority of the top private decision-makers in the Istanbul shopping center market (which resulted in a heavily commercial outcome and a desire to keep the status quo) and (2) a sustainability expert panel realized through face-to-face structured interviews which included two open-ended questions (which led to a strong correlation with the preceding literature review findings). In the end, both through primary and secondary research, it has become visible that the model's sustainability-based components would improve the existing decision-making approaches (e.g. private sector dominance, top-down approaches, commercial focus).

These research findings and the resulting multi factor model are important because shopping centers have become one of the most dominant forces in Istanbul's complex urban fabric during the past decades. This dominance is also visible in the 2018 year-end figures. By that time, there were 431 shopping centers in Turkey that corresponded to 12.92 million $m^2$ gross leasable area (GLA) and 123 of those (4.75 million $m^2$ GLA, 37% of the entire national supply) were in Istanbul (JLL 2019). These gigantic proportions are mostly a result of the investment streak of 2000s (48 projects opened in a decade) but the supply side has also remained strong afterwards. However, the demand side is becoming increasingly problematic as a result of larger internal and external shifts (e.g. the subprime mortgage crisis, the following local and global tensions and the eventual stagnation of Turkish real estate ecosystem). Accordingly, the investment trend is also expected to slow down. Strengthening such expectations, September 2018 Presidential Resolution has put a hold on foreign currency lease contracts; removing the most important selling point of Turkish shopping centers as a stable hard currency income generator. Combined with the growing risk of market saturation (e.g. Levent-Maslak CBD and Bakırköy sub-markets), stagnant turnover figures, shattering rent levels and investment yields and rising operational costs, the commercial outlook looks bleak and in need of a comprehensive restructuring.



However, risks are not only limited to the commercial aspects. It is a common mistake to evaluate such investments solely through the lens of their investors, financiers, service providers and tenants. This half-done approach also tends to see urban dwellers simply as customers, while leaving the environmental concerns almost totally outside of the equation. Actually, Istanbulites (both as individuals and as members of various communities) and the environment are crucial stakeholders that must be more visible in the issues concerning the future of the city. This is why the principles of sustainable development (i.e. an integrated combination of new social, environmental and economic targets for attaining a just future for the sustainable coexistence of all stakeholders) must also play a part in the ongoing theoretical and practical quests for improvement. Relatedly, the topic of negative externalities is also crucial. These externalities occur when the individual benefits and costs resulted in production and consumption scenarios differ from their gross environmental and social burden.

Sustainable development's prominence has been globally increasing because of the mounting social (e.g. lack of egalitarianism, loss of urban form and function, diminishing health and happiness) and environmental (e.g. urban sprawl, urban-nature balance, depleting natural resources, waste, pollution and $CO_2$) challenges. Concurrently, as a chaotic member of the global system, Istanbul is getting closer to its limits. It must be noted that, both socially and environmentally, heavily standardized and commercialized

building typologies (such as shopping centers) and urbanization processes also play a substantial role in this excess (Erdem 2016, İlhan 2018, Korkut and Kiper 2016, Şentürk 2012). This is why this study's model proposes a new, sustainable and stakeholder-based approach.

## 2- MATERIALS AND METHODS

Regardless of a potential stabilization in the macroeconomic outlook, the multi-faceted problems of the Istanbul shopping center market would still require a special focus. Accordingly, this study's model serves as an evaluative multi-factor decision-making tool that can be utilized by all stakeholders.

In order to determine the model parameters, a two-tier literature review process has been conducted. In the first, more conceptual tier, the following fields of research are analyzed; (1) weak vs. strong sustainability, (2) negative externalities, (3) sustainable development, (4) impacts of shopping centers and (5) the trajectory of Istanbul and its shopping center market. Through the second literature review tier, industry-specific sub-factors and headlines corresponding to the major pillars of sustainable development (i.e. commercial, social and environmental) are determined and elaborated on.

As stated before, this study is not solely dependent on literature review but it also utilizes the merits of two primary research endeavors. In their own ways, each of these has led to crucial revelations and possibilities for the research topic.

| Commercial Pillar | |
|---|---|
| ***Project Location*** | ***main premise*** |
| Asturias 2004 | private car accessibility is crucial for a project location's future prospects |
| Berio et al. 2018 | public transportation connectivity is necessary for integration into the urban life |
| Brown 1974 | all urban goods and services would have (to create their own) central locations in a city |
| Davies 2013 | current and future potential of a target location shall determine its long-term success |
| Fanning et al. 1995 | retail attractiveness primarily analyzed through project location |
| Huff 1964 | the seminal trading area concept is based on a project location's impact characteristics |
| McClain 2000 | pedestrian comfort (also for the disabled people) is an important element |
| Nichols 1945 | selection, analysis and concept development processes are crucial for choosing the right location |
| Sivitanidou 2011 | location is one of the key variables of retail attractiveness |
| ***Concept*** | ***main premise*** |
| Beyard et al. 2007 | design must reflect the wants and needs of a building's target audience |
| Coburn et al. 2017 | a good combination of form and function is needed for a stronger concept |
| Gudonaviciene and Alijosiene 2013 | shopping preferences change from region to region and concept must reflect these unique elements |
| Kronenburg 2007 | flexible design for future changes and more usage variety are crucial for long-term relevance |
| McKinsey 2014 | flexible design for future changes and more usage variety are crucial for long-term relevance |
| Ortegon-Cortazar and Royo-Vela 2017 | shopping center attractiveness is strongly connected to concept-related variables |
| Rigby 2011 | innovative concept approaches are needed to survive the stagnating traditional retail |
| Stoltman et al. 1991 | shopping center attractiveness is strongly connected to concept- and location-related variables |
| Weinswig 2017 | innovative concept approaches are needed to survive the stagnating traditional retail |
| ***Feasibility*** | ***main premise*** |
| Ferman and İlhan 2018 | plot, financing, construction and consultancy are the four main cost items for commercial real estate |
| Hofman 2016 | at the income side, net operating income (NOI) is important and it is dependent on performance |
| Hoover 2004 | exit strategy must be clearly and realistically formulated before the actual investment |
| Maverick 2019 | commercial real estate is a long-term investment with varying return-on-investment (ROI) figures |
| Plazzi 2010 | commercial real estate is a long-term investment with varying return-on-investment (ROI) figures |
| Poorvu 2003 | feasibility model must be able to successfully forecast the future |
| Smith 1980 | one must be able to get the best feasibility structure out of a project location |

| Social Pillar | |
|---|---|
| ***Integration into Decision-Making*** | ***main premise*** |
| Dreier 1996 | community is a strong force that can bring the hidden potential out within the urban context |
| Lerner 2015 | economic prosperity would only be complete with integrative approaches and quality of life |
| Li 2006 | top-down policy-making can create substantially varying results for communities |
| Pratchett et al. 2009 | community involvement can have various degrees (from limited petitions to full asset transfer) |
| Ramasubramanian 1999 | urban development would be more positive when the communities are involved |
| Salingaros 2014 | changes that do not take into consideration the socio-cultural structures are more likely to fail |
| ULI 2004 | strategic community development and encouragement would be helpful for urban development |
| ***Urban Value and Function*** | ***main premise*** |
| Aysev and Akpınar 2011 | globalization is pushing for standard urbanization approaches that are dangerous for intrinsic values |
| DESK 2016 | urban dwellers want function that is strongly tied to their intangible requirements and tastes (i.e. form) |
| İlhan and Kasap 2018 | cities are not only providing shelter and security but also have vast intangible values for humanity |
| Metin 2008 | oversupply, lack of strategy and inadequate regulations pose long-term risks for shopping centers |
| Özaydın 2009 | there is a lack of harmony between shopping centers and their urban surroundings |
| Sassen 2018 | urban context is not a blank slate for profit but a complex web of deep-rooted elements |
| Sınmaz and Özdemir 2016 | each region has its own unique built environment approaches that must be cherished |
| Uzun et al. 2017 | Turkish shopping centers are dangerously designed for certain target groups and for profit relations |
| ***Society's Health and Happiness*** | ***main premise*** |
| BREEAM 2016 | the sustainability certification has items dedicated to society's health and happiness |
| de Botton 2008 | urban development should not be top-down but it should reflect people's wants and needs |
| Howard 2017 | bad designs can make us physically and mentally ill; we need an active, natural life provision |
| Living Building Challenge 2019 | in addition to green elements, it also has civilized, healthy, beautiful, natural and happy built environments |
| USGBC 2018 | the sustainability certification has items dedicated to society's health and happiness |
| Valapour 2018 | instead of GDP, happiness indexes can create more representative social and economic benefits |
| WELL 2019 | a design guide specifically focusing on enhancing society's health and happiness |

| Environmental Pillar | |
|---|---|
| ***Land Use*** | ***main premise*** |
| Cengiz 2013 | urbanization should be subject to strict regulations as damage to nature is not reversible |
| Hooke and Martin-Duque 2012 | humans have changed more than half of the world's ice-free land with serious consequences |
| Irwin and Geoghegan 2001 | urban land use cause serious environmental degradation in nature's realm and capital |
| Naab et al. 2013 | urbanization is powerful enough to occupy the much needed agricultural land |
| Özduru and Guldmann 2013 | creating more commercial areas for profit result in high economic, social and environmental burdens |
| Pearson and Hodgkin 2010 | urbanization is powerful enough to occupy the much needed agricultural land |
| Tachieva 2010 | urban sprawl must be fixed to improve brownfield areas and preserve greenfield areas |
| Vaughan 2016 | 10% of the world's wilderness had been lost between 1993 and 2016 (around 3.3 million km2) |
| ***Resource Use*** | ***main premise*** |
| Jowit 2008 | 75% of the global population live in countries that use much more than they have |
| OECD 2015 | our economy leads to over-extraction of resources, land demand, less social environmental quality |
| UN Environment Programme 2016 | inability and unwillingness of economic actors lead to social and environmental harm at various levels |
| Tatar 2013 | throughout the building life cycle, more local and greener materials must be used |
| Clemente 2019 | more urban dwellers mean more energy demand (22% and 66% more for oil and gas respectively soon) |
| Smith et al. 2017 | global transportation (options/habits) should become more efficient, safer and more sustainable |
| Richardson 2018 | we need 1.7 Earths to survive with our current pace according to Global Footprint Network |
| ***Waste, Pollution and CO2*** | ***main premise*** |
| McGrath 2019 | cities produce 2.1 billion tonnes of waste annually and only 16% is being recycled properly |
| Emas 2015 | overproduction, pollution and waste are major environmental inefficiencies in our economic system |
| Luo et al. 2015 | 59 countries will face high water stress or worse by 2040, if they shall not change their approaches |
| Peters 2017 | our atmosphere can only take another 20 years of continued CO2 emissions at this rate |
| Post 2019 | zero-energy buildings are necessary; the existing building stock is the most hazardous entity globally |
| Ritchie and Roser 2017 | CO2 emissions had increased by 3.2 thousand times since the Industrial Revolution |
| Rockström 2017 | current economic system was not developed with such devastating environmental problems in existence |
| Vidal 2016 | air pollution is increasing (taking 3 million lives annually and becoming the most deadly hazard) |
| WRI 2016 | buildings consume 32% of the global energy, while also causing 25% of all human-related CO2 emissions |

**Table 1.** Second Tier Literature Review for Model Parameters.

The model parameters (i.e. sustainable development sub-factors and the underlying headlines) that have been identified through literature review are the basis of this study's first primary research endeavor. As stated before, it is a survey based on Saaty's (2008) AHP model which is applied face-to-face to the top decision-makers of 84% (twenty-one companies replied out of twenty-five eligible ones) of AYD members which currently hold at least one self-developed Istanbul shopping center in their portfolio. The participating AYD members represent the institutionalized face of the Istanbul market and they own 43% of the entire supply in terms of $m^2$ gross leasable area (2.03 million $m^2$ out of a total of 4.75 million $m^2$).

At its core, AHP is a multi-criteria decision analysis tool –suitable for understanding which sub-factors are more important for the AYD participants for their investments. AHP is based on constructing matrices that shall enable pair-wise comparison (i.e. comparing all elements in a research endeavor in pairs) that are then used to assign different weights (i.e. graded in a 1-9 scale, where 1 means that both elements in a pair have "equal importance" and 9 means that one element has "extreme importance" when compared to another) to all related elements to see which of these have relative priority (Saaty 2008). Even though consistency can become a problem especially when the number of criteria ("n") increases, Saaty sticks to a maximum consistency acceptance ratio of 0.1 (Alonso and Lamata 2006). Yet, since there are just three sub-factors under its individual sustainability pillars, the model's exposure to such consistency problems is fairly limited.



The model's AHP structure is constructed in Microsoft Excel and it is based on Goepel's (2013) work on transforming AHP into a standardized method of multi-criteria decision-making for companies. Goepel's (2018) latest template has been used for calculating and distributing the weights of the relevant sustainability pillars and their sub-factors; through Saaty's linear setup (with his consistency acceptance ratio of 0.1). There is an individual Microsoft Excel sheet for each participant; later to be combined to attain the final results.

Face-to-face interviews were conducted between February and May 2019. Participants had the liberty to modify their previous answers until a consistency acceptance ratio equal to or below the 0.1 mark could be reached. The same information pamphlet (see "Table 3") was provided to all participants for preserving academic objectivity. Each participant answered the same pair-wise comparison questions in the same order (i.e. commercial sub-factors, social sub-factors, environmental sub-factors and the major pillars).

| | AHP Survey Participants | | | | | |
|---|---|---|---|---|---|---|
| # | Date | Company | Assets | $m^2$ GLA | Executive | Position |
| 1 | 2/13/2019 | **TSKB REIT** | Pendorya | 30,500 | Hüseyin Tiken | General Manager |
| 2 | 2/14/2019 | **Orjin Group** | İstinyePark | 87,000 | Hakan Kurt | General Coordinator |
| 3 | 2/18/2019 | **Zorlu Real Estate** | Zorlu Center | 73,000 | Didem Aydın | General Manager |
| 4 | 2/21/2019 | **Artaş Group** | Vadistanbul, ArmoniPark, Arenapark, Carousel | 204,000 | Aydın Ayçenk | Tema Istanbul General Manager |
| 5 | 2/22/2019 | **Akiş REIT** | Akbatı, Akasya | 145,500 | Gökşin Durusoy | General Manager |
| 6 | 2/26/2019 | **Sur Yapı** | Axis Kağıthane, Metrogarden, Axis İstanbul | 115,000 | Münir Köndel | Deputy General Manager |
| 7 | 2/28/2019 | **Doğan Holding** | Trump | 42,500 | Bülent Kural | Trump Towers General Manager |
| 8 | 3/5/2019 | **Tepe Emlak** | Tepe Nautilus | 52,500 | Hayal Olcay | General Manager |
| 9 | 3/5/2019 | **Akmerkez REIT** | Akmerkez | 33,200 | Murat Kayman | General Manager |
| 10 | 3/5/2019 | **Metal Yapı** | Aqua Florya | 50,000 | Mert Durdağ | Deputy General Manager |
| 11 | 3/7/2019 | **Tahincioğlu** | Palladium Ataşehir | 40,000 | Elif Germirli | Member of the Board |
| 12 | 3/8/2019 | **MAYA** | Anatolium Marmara | 60,000 | Fuat Atalay | CEO |
| 13 | 3/12/2019 | **Canpark Holding** | Canpark | 40,000 | Cem Gür | Chairman |
| 14 | 3/15/2019 | **Emaar** | Emaar Square | 150,000 | Feyzi Tecellioğlu | CEO |
| 15 | 3/20/2019 | **VIA DMC** | Via/Port Asia, Via/Port Marina | 145,000 | Ogün Turanlı | General Manager |
| 16 | 3/27/2019 | **3S Kale** | Kale Outlet Center | 28,000 | Sema Gürün | Chairman |
| 17 | 5/8/2019 | **Multi Turkey** | Forum Istanbul, Marmara Forum | 310,000 | Pınar Yalçınkaya | CEO |
| 18 | 5/9/2019 | **IS REIT** | Kanyon | 40,000 | Gülfem Tandoğan | Head of Sales & Marketing |
| 19 | 5/10/2019 | **Nurol REIT** | Oasis Designer Outlet | 29,000 | Sena Ersoy | Project Development Director |
| 20 | 5/14/2019 | **Rönesans** | Piazza, Hilltown, Kozzy, Optimum, Maltepe Park | 253,500 | Murat Özgümüş | Member of the Board |
| 21 | 5/17/2019 | **ECE Türkiye** | Marmara Park | 100,000 | Stefan Zeiselmaier | CEO |
| | | | **Total $m^2$ GLA** | **2,028,700** | | |

**Table 2.** AYD Participants and Their Istanbul Portfolios.

| |
|---|
| **Sustainable Development** perspective which aims to establish an integrated, reasonable coexistence between commercial, social and environmental aspects that shape our world. |
| **Paradigm of Strong Sustainability** which puts environment -and natural capital- at the heart of its structure as the most crucial and irreplaceable layer above social and commercial layers. |
| Through this tailor-made **analytical hierarchy process model (AHP)**, a pair-wise comparison structure that enables more precise and quantifiable weighted decisions, views of the top decision-makers of AYD members that have at least one self-developed Istanbul shopping center in their portfolio would be learned and studied for the first time. |
| Please take a look at the explanations of different components of the research model (major pillars and their sub-factors) that are provided to you below. Please also examine the documents titled, "Scoring System in AHP", "Survey Setup and Flow Chart" and "Sample Calculation for the Final Sub-factor Scores" before initiating the pair-wise comparison. If you have doubts, please consult to the researcher. |
| **Commercial Pillar**<br>No building should fail in its core purpose. This purpose is defined as offering the right combination of project location, concept and feasibility for the shopping centers; in order to sustain their position as a socio-commercial platform in the long run |
| **Project Location**<br>*Analyzing the catchment area demographics and lifestyle traits*<br>*Analyzing the competition (existing and pipeline entities)*<br>*Evaluating the plot accessibility (public and private transportation)*<br>*Evaluating the micro-location traits (e.g. plot shape, visibility and in-plot accessibility)*<br>**Concept**<br>*Reflecting target customers' wants and needs in the commercial concept*<br>*Innovation (for differentiation from competition and increased attractiveness for visitors)*<br>*Long-term flexible design (ability to respond smoothly to the socio-commercial changes)*<br>*Physical humane manifestation of the building (earthly, vivid approach towards design)*<br>**Feasibility**<br>*Attaining optimized cost (plot, financing, construction, services)*<br>*Attaining optimized income (NOI)*<br>*Long-term trustworthiness and stability of the sector and overall markets*<br>*Availability of a sound exit strategy in the calculable future* |
| **Social Pillar**<br>Urbanization should serve specific social and individual needs and ideals that demand constant harmony between form and function. Communities must be active in the decision-making processes not only for improving the urban form and function but also for generating healthy and happy living grounds for themselves |
| **Integration into Decision-Making**<br>*Community strength (before making decisions, communities must attain integrity and purpose)*<br>*Community's long-term cooperation potential as a major stakeholder of the project in hand*<br>**Urban Value and Function**<br>*Internal harmony of form and function (a combination of purpose and local aesthetics)*<br>*Suitability within the evolving urban fabric (no alien, directly-imported objects)*<br>**Society's Health and Happiness**<br>*Amenities and approaches for improving the physical wellbeing*<br>*Amenities and approaches for improving the psychological wellbeing* |
| **Environmental Pillar**<br>All human interactions are a part of a larger surrounding; the environment. For the whole building life cycle, focusing on urban-nature balance, the natural capital, all living organisms and natural formations are important for a sustainable future. |
| **Land Use**<br>*Focusing on Brownfield developments rather than the Greenfield developments*<br>*Utilizing the land in an optimum manner (no waste/degradation)*<br>**Resource Use**<br>*Sustainable planning and execution during initial development and construction*<br>*Sustainable planning and execution during operation and disposal*<br>**Waste, Pollution & $CO_2$**<br>*Sustainable waste management for preserving the environment*<br>*Supporting beyond plot borders to offset potential on-site damages*<br>*Offsetting project-related water, air and soil pollution at all stages*<br>*Offsetting project-related $CO_2$ emissions at all stages* |

**Table 3.** Information Pamphlet for AYD Participants.

| *criteria* **1** | *criteria* **2** | *choose* **1 or 2** | *magnitude* **1 to 9** |
|---|---|---|---|
| *Commercial Pillar Question Order* | | | |
| Project Location | Concept | | |
| Project Location | Feasibility | | |
| Concept | Feasibility | | |
| *Social Pillar Question Order* | | | |
| Integration into Decision-making | Urban Value & Function | | |
| Integration into Decision-making | Society's Health & Happiness | | |
| Urban Value & Function | Society's Health & Happiness | | |
| *Environmental Pillar Question Order* | | | |
| Land Use | Resource Use | | |
| Land Use | Waste, Pollution & $CO_2$ | | |
| Resource Use | Waste, Pollution & $CO_2$ | | |
| *Comparing the Major Pillars* | | | |
| Commercial Pillar | Social Pillar | | |
| Commercial Pillar | Environmental Pillar | | |
| Social Pillar | Environmental Pillar | | |



**Table 4.** AHP Survey Setup and Flow Used for all Participants.

For each survey, a sub-factor's final weight is calculated via multiplying its individual score (that it has received in comparison to other two sub-factors in the same pillar group) with its pillar's score (that is received in comparison to other two major pillars). With all twenty-one survey results in hand, the average stance of AYD participants (regarding the multi-factor model variables) is determined via arithmetic mean method.

The necessity of further research has become apparent as a result of AYD participants' visibly commercial stance. Thus, in order to honor the findings of the preceding literature review, to give a stronger voice to society and environment and to bring more depth to the research endeavor, a sustainability expert panel is developed as an additional primary research layer.

| **Participating Expert** | **Profession** | **Affiliation** | **Nature** |
|---|---|---|---|
| **1. Faruk Göksu** | Urban Planner | Kentsel Strateji, TAK, Vizyon Atölyesi, Atölye Muğla | Private, NGO, University |
| **2. Prof. Dr. Murat Güvenç** | Urban Planner | Kadir Has University Istanbul Studies Center, TESEV, İlhan Tekeli Foundation | NGO, University |
| **3. Assoc. Prof. Dr. Duygu Erten** | Construction Engineer | TURKECO, ÇEDBİK, USGBC, Medipol University | Private, NGO, University |

**Table 5.** Sustainability Expert Panel Participants.

Sustainability expert panel is realized through individual structured face-to-face interviews that included two open-ended questions;

***1. Could you please describe the social and environmental impacts of shopping centers in Istanbul?***

***2. Could you please describe your suggestions regarding these impacts?***

Questions are intentionally neutral towards the otherwise controversial subject. The main idea here is to generate a free flow of ideas within the boundaries of the two predetermined questions. All sessions are recorded for further analysis.

**3- LITERATURE REVIEW FINDINGS & MODEL PARAMETERS**

For the first-tier literature review, the main documents for the debate on weak and strong sustainability are; (1) a brief by Pelenc and Ballet (2015) and an overview by Tutulmaz (2012). The former shows the shortcomings of weak sustainability (which defends that manufactured capital and natural capital are direct alternatives of each other and the value they shall create would not be different). Pelenc and Ballet (2015) has a three-step rationale against the defenders of weak sustainability; (1) the quality difference (i.e. while the manufactured capital is highly reproducible and its loss would not be unrecoverable, natural capital is the opposite –its essentiality and rareness making it an existential subject), (2) the incomplete transformation (i.e. natural capital is essential for creating manufactured capital and there is no way that the end product would substitute for the tangible biological and intangible social values of the natural capital) and (3) increased future problems (i.e. consumption of manufactured capital today shall create an even worse natural status quo for future generations). Tutulmaz (2012), on the other hand, acts as a general literature review.



Negative externalities are also a part of the first-tier literature review. Here, IMF division chief Thomas Helbling's (2010) overview of negative externalities and Barca's (2011) comparison between the post-Industrial Revolution economic narratives and the newer narratives developed by environmental historians are utilized. Helbling (2010) states that economic activities can also affect the parties that are not part of the actual transaction and these effects can be negative and not necessarily limited to the economic sphere either. He gives the example of pollution; as a polluter only thinks about the direct costs and opportunities and leaves out the indirect costs incurred by those outside of his/her business deal. Water, soil and air pollution generally harms those who have little or nothing to do with their source. Helbling also stresses the importance of public and environmental good and the ability to trace negative externalities back to their sources and quantifying them (e.g. in terms of additional taxation and/or burdens for the causing parties), while also accepting the fact that uncertainties would make these processes highly challenging. Barca (2011), on the other hand, argues that the economic growth narrative of the post-Industrial Revolution era has different meanings for different people – ranging between the two extremes of prosperity and disparity. Her comparison shows that energy and ownership play a crucial role at both sides.

| Mainstream Economic Narratives | Environmental Historians |
|---|---|
| Increase in energy consumption is a sign of modernity and a sizeable accomplishment for humanity | Need for more energy came with social and environmental costs (mass health problems and the depletion of large biological entities) |
| Technology have freed people both from the limits of natural (Earth's cycles) and un-natural (non-growth based, old moral economy) | Transforming nature into capital has showed us that there are actually limits and costs associated with economic growth |
| Individual ownership of land and resources have removed the uncertainty and fuelled growth | Energy setups are initiated and/or controlled by certain social classes or groups that use it as a basis of control and future advantage |
| Energy consumption and private property are the two interrelated, positive backbones of modern capitalism | A perspective change is needed in order to create a new, sustainable and egalitarian global system |
| Right institutions and technologies had come together and elevated the European societies to prosperity | There is an uneven distribution of the energy-related costs and benefits. This highly unequal exchange creates long-lasting poverty |
| Industrial Revolution is the starting point of a sea change which improved the lives of everyone | Industrial Revolution had required large sums of capital and technical specialization -creating a new sector that shall regulate the economy |

**Table 6.** Mainstream Narratives vs. Environmental Historians (Barca 2011)



For a better understanding of sustainable development, the United Nations' "2030 Agenda" (which is comprised of 17 wide-ranging sustainable development goals) is used as the main first-tier literature review source. Even though, four years on, they are seen more as rhetoric rather than the parts of an operable action plan (Kroll 2019), they still showcase the global headlines related to this study's interrelated economic, social and environmental challenges.

| | | |
|---|---|---|
| **1. No Poverty**<br>'783 million people live below the international poverty line of US$1.90 a day' | **7. Affordable & Clean Energy**<br>'13% of the world lacks access to electricity. Energy is crucial for climate change' | **13. Climate Action**<br>'Global emissions of carbon dioxide ($CO_2$) have increased by almost 50 per cent since 1990' |
| **2. Zero Hunger**<br>'Globally, one in nine people in the world today (815 million) are undernourished' | **8. Decent Work & Economic Growth**<br>'470 million jobs are needed globally for new workers between 2016 and 2030' | **14. Life Below Water**<br>'Levels of acidity have increased by 26 per cent since the start of the Industrial Revolution' |
| **3. Good Health & Well-being**<br>'Ensuring healthy lives and promoting the well-being at all ages is essential' | **9. Industries, Innovation, Infrastructure**<br>'Transport, irrigation, energy and information and communication technology are crucial' | **15. Life on Land**<br>'Forests are home to more than 80 per cent of all terrestrial species of animals, plants and insects' |
| **4. Quality Education**<br>'617 million youth worldwide lack basic mathematics and literacy skills' | **10. Reduced Inequalities**<br>'Economic growth is not sufficient to reduce the poverty if it is not inclusive' | **16. Peace, Justice & Strong Institutions**<br>'Corruption, bribery, theft and tax evasion cost some US $1.26 trillion for developing countries per year' |
| **5. Gender Equality**<br>'49 countries lack laws protecting women from domestic violence' | **11. Sustainable Cities & Communities**<br>'Urbanization pressures fresh water supplies, sewage, the living environment and public health' | **17. Partnership for the Goals**<br>'Agenda requires partnerships between governments, the private sector and civil society' |
| **6. Clean Water & Sanitation**<br>'3 in 10 people lack access to drinking water and 6 in 10 people lack access to sanitation' | **12. Responsible Consumption & Production**<br>'3 planets could be needed to keep up with our current lifestyles by 2050 and this is not sustainable' | |

**Table 7.** The United Nations Sustainable Development Goals (2018)

First-tier references for the socio-environmental impacts of shopping centers are as follows; (1) a WRI report (2016) that focuses on sustainable urban life, (2) Living Building Challenge 4.0 certification guidelines (2019) that alters the traditional approach of sustainable building certificates that focuses primarily on decreasing the negative impacts of buildings and instead introduces a new approach that advocates giving back more than initially taken from the communities and environment, (3) works by Herring and Wachter (1998) and Moore and Schindler (2015) on the speculative nature of real estate investments (e.g. real estate's transformation from a primary need into an investment instrument and the risks created by asset bubbles fueled by moral hazards and/or by footless market optimism), (4) İlhan and İlhan's (2018) study that demonstrates the proportions of the global shopping center market and its environmental risk potential, (5) Erkip and Ozduru's (2015) analysis that shows the distant standing of shopping centers towards low-income customers, elderly and people with disabilities and how they negatively affect the traditional social and commercial areas and (6) a recent UNESCO report (2016) which tackles the complexity behind the challenges faced by modern global commercial buildings to comply with the local cultural desires and aesthetics.

For understanding the complexities surrounding Istanbul's urbanization, the following studies are consulted within the framework of first-tier literature review; (1) Sudjic (2009) for the city's dualities (e.g. its role as a cultural capital being in stark contrast with its concrete jungles) and its global importance, (2) Tekeli (2009) for the socio-political and economic "gecekondu" reality and the ongoing urban sprawl and (3) Gölbaşı (2014) for the large-scale planning inconsistencies in Istanbul (i.e. problems at plan hierarchies and the high rate of historical planning inconsistencies) that become more apparent when the city is compared with other major urban hubs.



For the trajectory of the Istanbul shopping centers, this study's major first-tier references are; (1) KPMG's (2018) report on Turkish retail that shows the rise of organized retail (e.g. with their larger reach and capital, manpower, economies of scale, omni-channel structures and their access to the means of technology and marketing) to the disadvantage of traditional retailers who have struggled with their inherent shortcomings and their inability to use different supply and sales channels and (2) JLL's (2019) Turkey commercial real estate market overview report that summarizes the rather stagnant national macroeconomic indicators alongside with the current shopping center density in Istanbul, the market correction in key performance indicators (e.g. approximately 33% drop in prime rents in hard currency terms) and the ongoing supply-demand mismatch (i.e. the shopping center supply is still increasing while demand and rent levels are going down).

As a result of the industry-specific second literature research tier, definitions of the model's major components are identified (see "Table 1" and "Table 3"). Commercial Pillar has the following sub-factors; (1) Project Location which determines the customer capture rate via looking at the catchment area (e.g. income, education, lifestyle preferences), commercial mix of and distances to the competitors, road and public transportation networks and micro traits such as plot visibility, shape and visitor accessibility, (2) Concept which is a combination of successfully reading the wants and needs of the target catchment area and reflecting these in all aspects of form and function for attaining long-term flexibility, humane surroundings, differentiation and attractiveness and (3) Feasibility (i.e. offering a long-term financial potential through healthy return on investment and the ability to realize an exit strategy).

Social Pillar contains the following sub-factors; (1) Integration into Decision-making (i.e. defining an operable middle ground for a more active and solution-minded participation by all stakeholders at all stages of the investment), (2) Urban Value and Function to showcase the internal and external harmony of a given building and the sustainable coexistence of form (i.e. a line of deep-rooted intangible requirements and taste elements) and function (i.e. a building's utility, ability and practicality) and (3) Society's Health and Happiness generated through equitable, civilized and healthy living grounds that are also connected to nature for improved physical and psychological affluence.

Through literature review, the model also identified the industry-specific sub-factors of the Environmental Pillar; (1) Land Use (i.e. the initial decision to build a shopping center that would be the starting point of all other environmental concerns, while also being a risky move in its own right for the already fragile urban-nature areal balance), (2) Resource Use (i.e. the impact of resource use during extracting, processing, transporting and implementing) for the entire building life cycle of a shopping center and (3) Waste, Pollution & $CO_2$ that can only be subjugated via sustainable waste management, support beyond plot borders and actively working on offsetting the pollution and carbon footprint of the project in hand.

## 4- PRIMARY RESEARCH RESULTS

AYD participants have overwhelmingly favored the Commercial Pillar with 58.1%. Thus, the survey results show the need for (1) establishing a proper stakeholder structure that also represents society and environment and (2) having a new project development checklist to be followed by all related parties for focusing much more on sustainable and integrative projects. Commercial Pillar is followed up by Social and Environmental Pillars (with 22.8% and 19.1% respectively). It should be noted that the percentages are rounded up. Of course, one can also argue that a different result would be the actual breaking news. After all, these men and women are steering their companies in the turbulent waters of Istanbul's commercial real estate market and their sole focus has been on creating commercially successful projects.



| Criteria | Weight |
|---|---|
| **COMMERCIAL PILLAR** | **58,1%** |
| *Project Location* | *21,6%* |
| *Concept* | *7,0%* |
| *Feasibility* | *29,4%* |
| **SOCIAL PILLAR** | **22,8%** |
| *Integration into Decision-making* | *3,7%* |
| *Urban Value & Function* | *9,4%* |
| *Society's Health & Happiness* | *9,6%* |
| **ENVIRONMENTAL PILLAR** | **19,1%** |
| *Land Use* | *6,1%* |
| *Resource Use* | *6,5%* |
| *Waste, Pollution & $CO_2$* | *6,5%* |
| **TOTAL** | **100,0%** |

**Table 8.** AYD Survey's Final Weights for Pillars and Sub-factors (rounded up)

The survey results are gripping. Out of all the social and environmental sub-factors, only Urban Value & Function (9.4%) alongside with Society's Health & Happiness (9.6%) have better scores than the least-favored sub-factor of the Commercial Pillar, Concept (7.0%). Even though existing literature upholds the headlines that are under this study's Concept sub-factor (i.e. wants and needs, long-term flexibility, humane design, innovation for differentiation and attractiveness), AYD participants oppose the idea that these can make up for the potential commercial downsides that shall be caused by a weak project location or bad finances. Thus, the most dominant driving forces of the participants are Project Location and Feasibility (21.6% and 29.4% respectively). For that matter, Feasibility singlehandedly weights stronger than the individual total scores of Social and Environmental Pillars; with Project Location also finishing a hair short of it. These two sub-factors add up to more than half of the total score –the clear priorities in the eyes of AYD participants.

The overall least-favored sub-factor has been Integration into Decision-making (3.7%); showing the clear distant stance of the AYD participants towards having a more interactive stakeholder structure. Even though the participants are not willing to share their decision-making powers, they are actually eager to create spaces that would offer health and happiness to the communities; as this sub-factor is the highest rated among the non-commercial ones. A similar comment can also be made for Urban Value & Function. The participants valued the superior city planning principles that would improve both form and function in the built environment. Therefore, the situation here is not black and white. AYD participants are aware of the fact that communities need the necessary elements and amenities for a better life. The problem is to establish an egalitarian power sharing structure with other stakeholders.



Environmental Pillar is the least favored major pillar in the survey but, pointwise, it has the most evenly distributed sub-factors. Not surprisingly, since land development is one of AYD participants' core businesses, Land Use sub-factor is not seen as a major threat (6.1%). Yet, Environmental Pillar's weak survey performance is an important revelation in its own right and can potentially lead to new research endeavors in the future.

It would be reasonable to argue that the decision-makers in the Istanbul shopping center market; (1) believe in a top-down approach (i.e. even though they may be willing to improve people's lives, they do not want to share their decision-making powers with the communities), (2) are understandably biased (i.e. they are looking at things through a business lens), (3) are not willing to identify their business practices as potential environmental hazards and correlatively (4) struggle to rationalize the extra effort needed for being more sustainable. On a positive note, with the commercial side's stance becoming quantifiable and visible for the first time, things shall start to change for the better. Keeping a distance and being pure evil are two radically different approaches. AYD survey results are not proofs of such pure evil. Instead, these results plainly show how dangerous it can be to have a distance between the business world and other crucial stakeholders. The importance of society and environment should increase in this debate.

Sustainability expert panel, this study's second primary research endeavor, presents different results. Experts' input has been visibly in line with the preceding literature review findings; as they have also stressed the dire social and environmental impacts of urbanization and shopping centers and the ways and means to counter them. It is logical to bring their thoughts together (see "Table 9") because the majority of the individual ideas are highly correlative with one another. One expert has analyzed the topic through

a micro approach (i.e. each shopping center and its community to be evaluated separately), while the other two prefer macro approaches (e.g. shopping centers' role within the larger urban challenges and the broader retail world). Experts also highlight that uncontrolled growth of the market has led to; (1) commercial problems (both for shopping centers and small enterprises), (2) a burden on both the built (e.g. infrastructural problems) and natural (e.g. eroded urban-nature balance) environments, (3) overall subpar city-wide planning that affects numerous communities dearly and (4) some unsustainable center designs and management practices.

| Approaches |
|---|
| • Micro focus: analyzing the relationship of each shopping center with its close surroundings separately can be an option. Most centers try to cover some of the basic social needs (as semi-public spaces) but they lack the necessary planning and management traits<br>• Macro focus: shopping centers are modern extensions of Istanbul's long history of unregulated urban development / urban sprawl<br>• Macro focus: shopping centers cannot substantially change much on their own before the larger retail world becomes more sustainable. Customers are also increasingly demanding this |
| **Negative Impacts** |
| • Shopping centers are cannibalizing both each other and other small enterprises (high, uncontrolled and unjust competition)<br>• High levels of land use (further harming the urban-nature balance)<br>• Extra burden on the infrastructure and on the quality of life<br>• Bolstering up more subpar planning in the city<br>• Failing in giving back to the communities<br>• Some centers have unsustainable designs and management practices (e.g. energy consumption) but a sizeable portion of the harm actually comes from individual retailers |
| **Suggestions** |
| • Giving social and/or vocational education to the communities<br>• Trying to build the workforce from the surrounding communities<br>• Improving center designs and their management practices for better sustainability<br>• Creating special funds (reserving a pre-determined portion of the project income) to address the unique local problems (direct impact)<br>• Imposing a development tax for limiting the speculative oversupply<br>• Solve the planning problem: better city-wide and long-term planning and a stronger, consistent application of it are needed in Istanbul<br>• Solve the bottleneck effect: sustainability reform is needed at the retailers' side because shopping centers are platforms and their total impact is limited within the larger picture |

**Table 9.** Sustainability Expert Panel Results Overview.

One of the major expectations from shopping centers is to become more proactive, society-based and sustainable platforms that would be able to positively impact both their visitors' lives and their retailers' businesses. Expert panel findings show that this feat can be achieved through better collaboration, improved planning and management practices, new educational programs, social initiatives and amenities, closer employment relations and better retail world cooperation. Sustainability experts assume that if shopping centers can elevate themselves, all stakeholders would benefit from this wider, more inclusive setup. Shopping centers may even channel the retailers (that have their own shortcomings) and the overall urban status quo towards a more sustainable direction in the long-term.

## 5- MULTI-FACTOR MODEL

As stated before, the multi-factor model has two major components. The first component is comprised of the explanatory Simple Visualization (see "Figure 1") based on a stronger version of sustainable development and the supporting Information Pamphlet (see "Table 3"). While Simple Visualization is making the concept easier to understand, the Information Pamphlet gives valuable details to the potential users. There are two crucial elements in the Simple Visualization. First one is the concept of "ethical protection". This protection does not mean that all of the commercial requirements must be scrapped in favor of other pillars. As a socio-commercial building, a shopping center must be able to live up to its purpose. However, both the extensive literature review and the expert panel results have shown that social and environmental realms are facing serious threats because of the current economic system. Therefore, it is reasonable to highlight the existential importance of the related pillars.



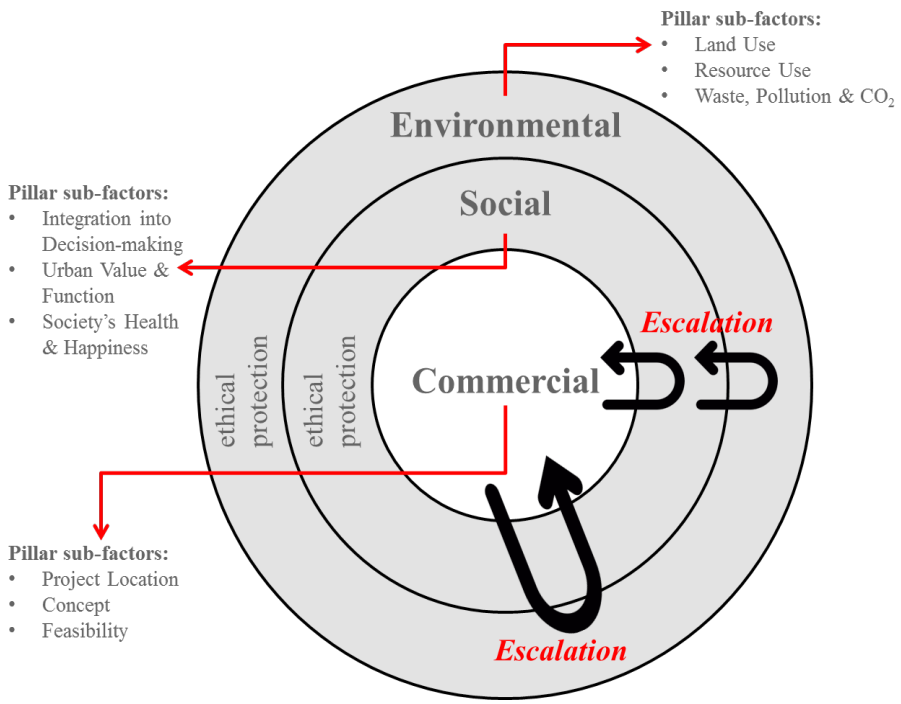


**Figure 1.** Simple Visualization of the Model.

Second one is the concept of "escalation". Any misconduct in one of the sustainability spheres (i.e. commercial, social and environmental spheres) can create a chain reaction by negatively impacting one or both of the other spheres. This would lead to an escalation effect by spreading and magnifying the impact of the initial misconduct. This perspective is visualized in the model through its genuine loop-back arrows.

The other major component of the multi-factor model is the Project Checklist (see "Table 10"). Each sub-factor has equal (i.e. four) maximum points for a potential total of thirty-six points for all three pillars combined. Some sub-factors have four headlines (i.e. one point each), while the others have two (i.e. two points each). All sub-factors and headlines are determined through literature review. Qualified majority approach is suggested for a potential "pass grade". While different governing bodies have different thresholds, the likes of the EU's post-2014 model that eliminates the practice of weighted voting and, instead, introduces a threshold of reflecting at least 65% (i.e. an almost two-thirds majority) of the population for approval can be offered as a suitable reference for this model. Just like the EU, this multi-factor model is also comprised of diverse but interconnected elements.

Accordingly, the proposed Project Checklist does not have a weighted average structure. Principally, each and every one of the sub-factors (which are linked to the major pillars of sustainable development) should have equal importance for a truly sustainable future. Of course, if this model would have been exclusively about the commercial side of the equation, AYD surveys results could have been directly applied (as a reference weighted calculation sheet). Instead, the Project Checklist for the multi-factor model is; (1) upholding all three pillars of sustainable development in an egalitarian fashion, (2) expecting a final cumulative score that would pass as a qualified majority (also without principally failing in any of the pillars) and (3) operating as an open source medium for all stakeholders of this research topic.

| Name of the Project, Investor, Service Provider and Opening Date: | | | |
|---|---|---|---|
| | | | |
| Tier 3 *(up to 30.000 $m^2$ GLA)*, Tier 2 (*30.000-60.000 $m^2$ GLA)*, Tier 1 *(+60.000 $m^2$ GLA)* | | | |
| **Commercial Pillar** | | | |
| **Project Location** | **-1** | **0** | **1** |
| *Catchment Area Demographics* | Bad | Average | Good |
| *Competition (Existing and Future)* | High | Average | Low |
| *Plot Accessibility* | Bad | Average | Good |
| *Micro-location Traits* | Bad | Average | Good |
| **Concept** | **-1** | **0** | **1** |
| *Reflecting Target Customers' Wants and Needs* | Bad | Average | Good |
| *Innovation (for Differentiation and Attractiveness)* | Bad | Average | Good |
| *Long-term Flexible Design* | Bad | Average | Good |
| *Physical Humane Manifestation of the Building* | Bad | Average | Good |
| **Feasibility** | **-1** | **0** | **1** |
| *Cost Side (Plot, Financing, Construction, Services)* | High | Average | Low |
| *Income Side (NOI)* | Low | Average | High |
| *Long-term Trustworthiness and Stability* | Low | Average | High |
| *Availability of a Sound Exit Strategy* | Low | Average | High |
| **Sub-total ( ) / 12 - minimum 8** | | | |
| **Social Pillar** | | | |
| **Integration into Decision-Making** | **-2** | **0** | **2** |
| *Current Community Strength* | Low | Average | High |
| *Long-term Cooperation Potential* | Low | Average | High |
| **Urban Value and Function** | **-2** | **0** | **2** |
| *Internal Harmony of Form and Function* | Bad | Average | Good |
| *Suitability within the Evolving Urban Fabric* | Bad | Average | Good |
| **Society's Health and Happiness** | **-2** | **0** | **2** |
| *Physical Amenities and Approaches* | Bad | Average | Good |
| *Psychological Amenities and Approaches* | Bad | Average | Good |
| **Sub-total ( ) / 12 - minimum 8** | | | |
| **Environmental Pillar** | | | |
| **Land Use** | **-2** | **0** | **2** |
| *Brownfield vs. Greenfield Development* | Greenfield | Partial | Brownfield |
| *Land Utilized in an Optimum Manner* | No | Average | Yes |
| **Resource Use** | **-2** | **0** | **2** |
| *During Initial Development and Construction* | Bad | Average | Good |
| *During Operation and Disposal* | Bad | Average | Good |
| **Waste, Pollution & $CO_2$** | **-1** | **0** | **1** |
| *Sustainable Waste Management* | Bad | Average | Good |
| *Support Beyond Plot Borders* | Not Done | Partial | Done |
| *Offsetting Water, Air and Soil Pollution* | Bad | Average | Good |
| *Offsetting $CO_2$ Emissions* | Bad | Average | Good |
| **Sub-total ( ) / 12 - minimum 8** | | | |
| **Total = ( ) / 36 - minimum 24** | | | |

**Table 10.** Project Checklist.

Project Checklist has two rows of identification; (1) basic information (i.e. name, companies involved and opening date) and (2) size. In the latter, the researcher would have three tiers to choose from; with the gross leasable area (GLA) ranges are established in accordance with the major size clusters observed in the Istanbul shopping center market. A larger size would lead to a stringent evaluation process (i.e. harder to justify the mounting social and environmental risks and the commercial merits).

## 6- CONCLUSION

The multi-factor model puts forward a practical toolkit (i.e. Simple Visualization and Project Checklist) for a more sustainable shopping center market in Istanbul. After establishing the Commercial, Social and Environmental Pillars (and their industry-related sub-factors and underlying headlines) through a two-tier literature review, an AHP-based survey has been conducted with the majority of the top decision-makers of the Istanbul shopping center market. The AYD participants favored the Commercial Pillar with 58.1%, while Social and Environmental Pillars lagged behind with 22.8% and 19.1% respectively. This outcome is in stark contrast to the preceding literature review findings. In this respect, another layer of primary research has been developed to re-evaluate this unbalanced private sector stance and to better elaborate on the earlier literature review findings. To that end, a sustainability expert panel comprised of three participants is put in motion. Through structured face-to-face interviews that contained two open-ended questions, valuable qualitative data is obtained. Expert panel results visibly counter the preceding private sector views just like the literature review findings beforehand and they have jointly enabled the multi-factor model to assign ethical protection to Social and Environmental Pillars.



The multi-factor model is visually and principally constructed on the principles of sustainable development. It aims to improve the current theoretical framework in three ways; (1) the addition of the escalation arrows and the concept of ethical protection as derivatives of the literature review findings and the sustainability expert panel interviews, (2) the discovery of industry-specific sub-factors and underlying headlines for each sustainability pillar primarily through extensive literature review and (3) the creation of a practical toolkit that shall act as a road-map for all stakeholders both for improving existing assets and for developing new shopping centers more sustainably. This study also presents, for the first time, a quantifiable and representable overview of the major Istanbul shopping center investors' ideas regarding project development through the lens of sustainable development. The heavily commercial outcome is a critical revelation in its own right.

Still, it is also clear that simultaneously having the AYD survey (i.e. AHP, quantitative data, fewer insights) and the sustainability expert panel (i.e. structured interviews, qualitative data, more insights) has already pushed this study and its multi-factor model to the edge. Against the backdrop of this apparent limitation, reaching out to other stakeholders (i.e. financiers, service providers and tenants at the commercial side, municipalities, central government and other public offices at the public sector's side and NGOs and specific communities at the civil society side) can still be a natural step for future researchers.

Another limitation is the lack of project-specific data (e.g. rent levels, room cost, footfall and sales figures) that could have been used to crosscheck and improve the multi-factor model. Aside from these limitations and ideas, working on a new urban sustainability platform would be this study's proposal as its main

future research topic. Ideally, such a platform would operate on cloud and would not require offices, physical meetings or bureaucracies. This platform can be developed as a "digital council" that shall include all stakeholders and all the necessary data for open, integrative discussions and for strategic decision-making processes.

It is clear that Istanbul is not the only city in the world that is facing grave commercial, social and environmental challenges. This is a global phenomenon and both primary and secondary research findings suggest that shopping centers are also a crucial part of these challenges. Still, burying shopping centers as the demonized physical manifestations of consumerism would be a huge waste of resources. A more fruitful way would be to re-invent the shopping center typology as a superior socio-commercial platform that also serves the public and preserves the environment. The multi-factor model shall support all related parties in this respect.

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