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## EVOLUTIONARY MECHANISMS OF IMPRINTING: EVIDENCE FROM TWO CASE STUDIES

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### ABSTRACT

**Purpose-** The aim of the study is to contribute to the recently developing field of evolutionary economic geography field by developing a synthetic theoretical framework to explain the evolutionary dynamics of regional clusters. The theoretical framework combines elements of multi-level imprinting theory and general Darwinism to model how hereditary factors and environmental influencers interact to render regional clusters more receptive or immune to triggering conditions.

**Methodology-** The study employs historical-comparative analysis (HCA) to highlight the influence of past events and reveal evolutionary mechanisms based on two cases of regional clusters from the empirical literature. Evidence from each case is used to identify the mediator and reinforcing mechanisms of imprints.

**Findings-** The analysis of two empirical case studies significantly corroborated our theoretical insights and displayed a considerable fit with our proposed analytical model. Not only our understanding towards variation, selection and retention mechanisms is enhanced, but also the conditions that affect the success of imprinting are identified.

**Conclusion-** Empirical cases illustrated that sensitive periods do not automatically result in evolution of a cluster. For a successful imprinting during a sensitive period, the presence of a VSR mechanism is necessary. VSR mechanism, on the other hand, is found to be affected by both environmental factors and genetic/hereditary factors. Additionally, MLIT should be revisited to include political influencers, which seems to be a potent environmental source of imprinting.

**Keywords:** General Darwinism, imprinting, economic geography, regional development history, regional growth.

**JEL Codes:** B25, B52, R11

## 1. INTRODUCTION

Over the past three decades, key theoretical developments have pushed the analysis of regional economic change and evolution to the center stage in the field of economic geography (Martin and Sunley, 2015). Particularly, economic geographers have moved away from the static interpretation of locational economic analysis and discovered insights from more dynamic forms outside the mainstream economics (see Martin and Sunley, 2001; Bathelt and Glückler, 2003; Martin and Sunley, 2017).

Since the early- to mid-1990s well known economist Paul Krugman and his followers formalized elegant economic growth models and labelled them as 'New Economic Geography', which explains the location choices of firms through dynamics and competitiveness of the economy. At the same time, as an influential business economist, Michael Porter, manifested his well-known 'diamond model' to capture the impact of spatial facets on the productivity of firms in order to explain the competitive dynamics of the economy. Since their interest has been on the process of spatial agglomeration of economic activities as a source of increasing returns, they both neglect the importance of history in the economic landscape. On the contrary, the geographic

distribution of resources and potentials for development are shaped by historical factors (Capello, 2011), concentrating the research attention on the mechanisms by which geographical landscape evolves over time.

Moreover, neither local development theories like 'The growth pole theory' (Perroux, 1955); 'Milieux innovateurs' (Camagni, 1991; Maillat et al., 1993), Learning region (Lundvall, 1992) nor growth theories like 'New economic geography' (Krugman, 1991), 'Endogenous growth model' (Lucas, 1988; Romer, 1986) suffice to represent complex evolutionary dynamics of regional clusters. As a consequence of 'evolutionary turn', evolutionary approaches in economic geography have gathered increasing support and evolutionary concepts such as path-dependence, imprinting, variety/selection and complexity theory have become increasingly popular among economic geographers (Boschma and Van der Knaap, 1997; Rigby and Essletzbichler, 1997, 2006; Storper, 1997; Amin, 1999; Essletzbichler and Rigby, 2005a, 2005b; Martin and Sunley, 2006; Boschma and Frenken, 2006; Marquis and Tilcsik, 2013).

Evolutionary Economic Geography not only complements neoclassical and institutional works of analysis in the economic geography but also explains the spatial evolution of firms, industries and regions through a variety of approaches (Boschma and Frenken, 2006). However, in spite of the surge in the number of studies in economic geography, which take an evolutionary perspective, researchers are still far from formulating a coherent and holistic view of the phenomenon (Essletzbichler and Rigby, 2007).

This study aims to contribute to the debate on the evolution of regional clusters by advancing ecological frameworks, which build over analogies between evolutionary biology and evolutionary economics. In this vein, the study not only extends the main debates offered by multi-level imprinting theory (MLIT) to model how regional clusters emerge, establish and perish based on environmental changes occurred in historical time (Marquis and Tilcsik, 2013), but also contributes to the drawing of an evolutionary model of economic dynamics. The convergence of MLIT and concepts, which are clearly defined in evolutionary biology, may significantly enhance our theoretical lenses to address the extant gaps in existing theoretical arguments.

Much of the distinctiveness of the approach derives not just from giving primary emphasis to the 'historical unfolding' of the economic landscape, but also from the deliberate exploration and use of explicitly evolutionary concepts, analogies and metaphors inspired by evolutionary ideas, developed in biology, physics, ecology and related fields of enquiry.

Accordingly, the study focuses on clarifying mechanisms that mediate the success of imprinting process, thereby opening up the black box of how clusters of firms become receptive or immune to certain variations in their environments. In the vicinity of the nature vs nurture debate, the study reveals how heredity factors (nature) incorporate with environmental influencers (nurture) and introduces the main concepts and mechanisms of General Darwinism (GD) to lay the foundation of the basic evolutionary engine: *variation, selection and retention processes*.

The study, in so doing, presents MLIT and its proposed stamping mechanisms to introduce the dynamics of discontinuous change processes built over sensitive periods. The extensions to the MLIT, mainly, explains how the logic of MLIT incorporates with evolutionary mechanisms to stamp clusters of firms and retention mechanisms, which enable perpetuation of the imprints. To substantiate its theoretical arguments, the study briefly revisits two empirical case studies, namely the British Motor Sports Industry (Pinch and Henry, 1999) and Leipzig Cultural Production Industry (Bathelt and Boggs, 2003) to help readers digest how environmental triggers affect or fail to affect clusters, and how changes in each cluster are reproduced or dropped. The study concludes by discussing the contributions made to the evolutionary economic geography approach to clusters through its dialogue with evolutionary theories developed in biology with reference to the MLIT framework.

The paper is organized as follows. Section 2 provides the literature review highlighting the importance of 'Evolutionary turn' and contribution of evolutionary concepts within the economic geography. In the section 3, the link between environmental influencers and evolutionary process is discussed and a conceptual model explaining evolutionary mechanisms is described. In the following sections, two cases from the empirical literature are revisited and evidence from the cases is used to identify evolutionary mechanisms. Lastly, results are discussed, and conclusion is presented

## 2. LITERATURE REVIEW

One of the major obstacles of economic geography is that embeddedness of regions in their environmental landscape is often overlooked and clusters are modeled as isolated entities (Breschi and Malerba, 2001). Porter (1990) has acknowledged the role of historical events (like wars or natural disasters etc.) in his work on industrial clusters, but instead of opening the black box of such ruptures and explaining the casual mechanisms, he generalizes them as chance factors. On the other hand, there has been accumulating evidence suggesting that the existence and spatial behavior of regions can be understood through analyzing their

dynamics over time (Audretsch and Feldman 1996; Pouder and St. John 1996; Menzel and Fornahl 2009; Ter Wal and Boschma 2011) and regions may be understood as products of history (Martin and Sunley 2006). 'Evolutionary turn' is both promising a new way of thinking about uneven geographical development and presenting an opportunity for linking different concepts and theoretical approaches from different schools of thoughts.

## **2.1. Evolution of Regions**

Studying patterns of economic activities across space showed that the development of economic geography perspective and evolutionary approach complements the field of economic geography by revealing historical processes, which have produced these patterns (Frenken and Boschma, 2007). Evolutionary theory explains a current state through history, as Dosi (1997, p.1531) stated 'the explanation to why something exists intimately rests on how it became what it is'.

Industry life-cycle studies pioneered by Griliches (1957), Abernathy and Utterback (1978) and Klepper (1996) constitute an important place in the body of work. These studies generally model the focal spatial collective in four stages: emerging, growing, sustaining, and declining and analyze different dynamics of each stage. According to Lifecycle models there exists a high level of technological and market uncertainty during the initial stage, resulting in competing designs with high rates of entry and exit. When a winning model emerges, heterogeneity narrows rapidly, selection pressure intensifies, entry rates fall, and market concentration increases (Essletzbichler and Rigby, 2007). Although this perspective provides cues about evolutionary dynamics, it does not clarify the interplay between environment and focal entity, including deliberate manipulation of powerful actors and uneven competitive struggles during emerging stage. Moreover, regions may face technological and market uncertainty periods in different stages of their life cycle. Furthermore, during the initial stage of development, existing or related regional labor markets and knowledge institutions may facilitate the ability of particular regions to establish new high-tech industries (Boschma and Knaap, 1999). Therefore, history and environmental conditions should be analyzed in a more comprehensive manner rather than stage by stage basis.

Staged approach is not well matching the evolutionary reality and the major external shocks forces system changes in a quick and dramatic way in the evolutionary process. There are several studies in external economies indicating more than one long-run equilibria. Not only economics but also institutionalists realize that there is plurality of equilibria. Paleo-biologists Gould and Eldredge's (1972) landmark work on punctuated equilibrium (or 'homeostatic equilibria as they call it) shows that the evolution occurs in rapid steps in a short period rather than a slow transformation. From institutional perspective, institutional change means going from one state of common parameter values (like salient patterns of social interactions, shared beliefs) associated with a particular equilibrium to another equilibrium (Aoki, 2000). In the long run, as a result of this punctuations and cyclic interplay between environment and focal entities, distant populations will tend to develop different characteristics and possess distinct histories of development.

Consequently, an evolutionary perspective is essential to develop a fuller understanding of such issues as the geographies of technological progress, dynamic competitive advantage, economic restructuring, and economic growth. In this context, there is thus considerable scope and potential for applying and extending the ideas from evolutionary economics to the analysis of regional development. The recently developing field of evolutionary economic geography tries to explain not only how economic landscape changes over historical time but also how geography matters in determining the nature and trajectory of the evolution of economic system (Boschma and Martin, 2010).

## **2.2. Evolutionary Economic Geography**

The basic concern of evolutionary economic geography is with the processes by which the economic landscape – the spatial organization of economic production, circulation, exchange, distribution and consumption - is transformed from within over time (Boschma and Martin, 2010). Evolutionary economic geography (EEG) enhance our understanding towards the development of clusters. Industries have roots in pre-existing economic and institutional structures, which orient the behavior of socio-economic actors in the present by specifying initial conditions of resources and interests (Martin and Sunley, 2006). Factors shaping cluster evolution are pre-existing industrial structures, technological conditions and institutional settings, which change through external shocks such as new technologies or market shifts (Belussi and Oliver, 2016).

Modern evolutionary economic theory emerged in the 1970s based on issues that is less addressed by the neoclassical economics (Nelson and Winter, 1974, 1982), including technological change (Arthur, 1983), the role of institutions (Hodgson, 2001) and economic growth (Nelson, 1995). The fundamental purpose of evolutionary economics is to understand the influencing mechanisms of firm behavior in a market environment, in which they function (Nelson and Winter, 1982). There are three main

approaches identified by Boschma and Martin (2010) for analyzing the evolution: Path dependence, complexity theory and generalized Darwinism. Even though path dependence has significantly contributed to evolutionary economics via emphasizing the historical dimension, the process of path creation is still unclear. In other words, why certain alternative paths are chosen, whereas others disappear remains to be developed (Martin and Sunley, 2006).

Historical 'triggering' events based on 'chance' factors represent the central notion of path dependency theory. According to Martin and Sunley (2006, p.424):

*"Most path dependent models explain the initiation of paths in terms of (small) events that are in some ways exogenous to, or orthogonal to, the key system properties. Typically, these events are described as being 'chance', 'serendipitous' or simply as 'historical accidents'. This would seem to suggest that there are innumerable different possibilities and that the preceding sequence of events (past history) plays no role in determining what new 'historical accident' occurs or whether or not it initiates a new techno-economic path; that is, paths emerge from a chaotic swirl of random events."*

Complexity theory represents another promising branch to study economic geography. Beinhocker (2006) suggests the use of 'complexity economics' as an umbrella term for synthesized theoretical and empirical work linked to 'complexity thinking'. Beinhocker (2006) defines complex economics systems as open, dynamic, nonlinear systems, which are far from equilibrium. These systems are operated with agents, who are prone to errors and biases. These agents also tend to learn and adapt to unfolding conditions via networks of relationships that change over time and suggests that there is no distinction between micro- and macro-economics as macro patterns are emergent results of micro-level behaviors and interactions. On the other hand, it is almost impossible to explain the lasting impact of environmental influencers by only focusing on the micro-adaptive nature of complexity theory. Dopfer et al. (2004) suggested that macro level is the population or deep structure of meso-rules, which defines how rules co-ordinate with each other, and includes origination, diffusion, adaptation, retention and replication mechanisms. These meso units are the dynamical building blocks of an economic system and regional economic change depends on understanding how these rules, which are composed of knowledge connections, emerge and are institutionalized in particular regions (Dopfer et al. , 2004). Consequently, the micro orientation of complexity approach and its pitfalls to explain dynamic change of regional clusters requires scholars to concentrate their efforts to find better fitting theoretical solutions. In this vein, GD offers an interesting avenue to explore in terms of its keen focus on biological analogies and dynamic stance.

### 2.3. Generalized Darwinism in Evolutionary Economic Geography

Generalized Darwinism offers an appealing approach for evolutionary economics and its extension into economic geography. GD asserts that the core principles of evolution provide a general theoretical framework for understanding evolutionary change in all domains (from physical to social systems), but the meaning of those principles, and the way that they operate is specific to each domain (Hodgson, 2002; Hodgson and Knudsen, 2006).

There are strong conceptual links between GD and understanding organizational collectives from an evolutionary perspective. Darwin's evolutionary theory explains how populations change over time. Here, the mechanism of variation, inheritance and selection, producing a cycle of fitness in a given population. Akin to the idea, Darwinism makes comparisons between market competition and the struggle for survival based on natural selection, which is present in the animal world.

Instead of assuming that the mechanisms of social and biological evolution are similar, GD suggests that there is a degree of ontological communality between them, as the Darwinian principles apply both to biological and social systems (Hodgson and Knudsen, 2010). On this basis, the mechanisms of Darwinism (variation, selection and retention/inheritance) can help us to determine the sources of growth or survival of firm collectives from a historical standpoint. Understanding economic evolution of regions from the approach of GD requires understanding of how key concepts (variation, selection and inheritance) shall be operated in within a dynamic system of economic geographies.

### 2.4. Multi-level Imprinting Theory (MLIT)

The concept of imprinting emerged in 19th century with the studies of British biologist Douglas Spalding, who reported common behavior of birds that tend to follow the first-seen moving object in their early life. After that it was Stinchcombe's (1965) seminal work, which describes the stamps of the environment on an organization in its early phase and how these stamps persist after this early phase in spite of subsequent environmental changes (Johnson, 2007; Marquis, 2003). The concept of imprint has been utilized in different branches of organizational research like organizational ecology, (Carroll & Hannan, 1989; Swaminathan, 1996), network analysis (McEvily, Jaffee, & Tortoriello, 2012) or institutional theory (Johnson, 2007; Marquis & Huang, 2010). Marquis and Tilcsik (2013, p.199) describes imprinting as: "a process whereby, during a brief period of susceptibility, a focal entity develops



characteristics that reflect prominent features of the environment, and these characteristics continue to persist despite significant environmental changes in subsequent periods.”

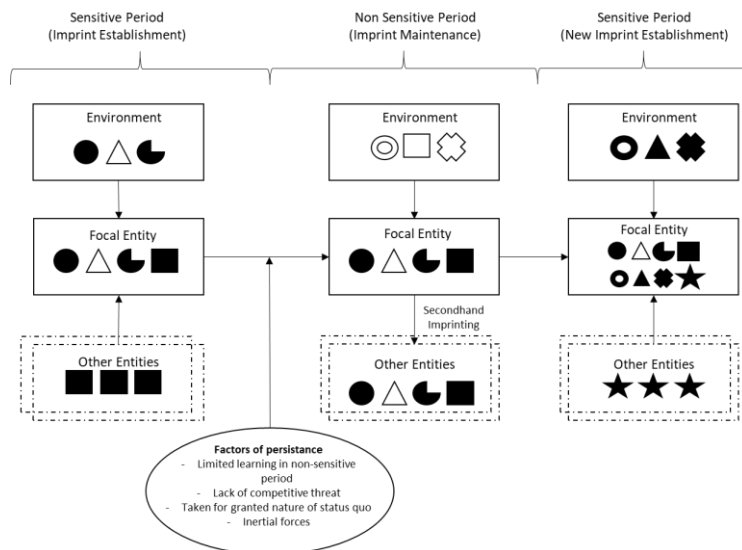
As stated above there are three essential features of imprinting, namely, the presence of a sensitive period, the powerful impact of environment and persistence of stamped characteristics beyond the sensitive period (Marquis and Tilcsik, 2013). Sensitive periods are conceptualized as brief periods of significant transition and there is the possibility of multiple sensitive periods in the life-cycle of an entity. Imprinting theory resembles punctuated equilibrium perspective, as both refers to brief discontinuous periods of intense change and link them with the changes in environmental conditions.

In the multilevel view of imprinting Marquis and Tilcsik (2013) offers four sources of imprinting mechanisms, namely, economic conditions, technological conditions, institutional factors and individuals. The environment is conceptualized by Marquis and Tilcsik (2013) as rich and modular with a hierarchical depth. There are several empirical studies showing that organizational collectives, which are stamped by imprints carry these imprints of their founding environment, rooted in economical, technological and institutional conditions or stamp of an entrepreneur. Table 1 below shows sources of imprinting mechanisms with given examples.

**Table 1: Source of the Imprints on Organizational Collectives (Marquis and Tilcsik, 2013)**

Source of Imprint	Mechanisms & Examples on Organizational Collectives
Economic and technological conditions	<p><b>1. Mechanism:</b> External economic and technological conditions serve as a constraint on new organizations, and the initial patterns are maintained by subsequently founded organizations imitating prior organizations.</p> <p><b>Example:</b> Stinchcombe (1965) on employment structure of different industries; Marquis (2003) on travel technology influencing the density of local inter-corporate networks</p>
Institutional factors	<p><b>2. Mechanism:</b> Collectives have different standards of legitimacy that not only shape initial organizations, but also continue to influence more recent entrants.</p> <p><b>Example:</b> Lounsbury (2007) on different corporate strategies of investment firms across US cities; Dobbin (1994) on different organizational types of railroad firms across countries.</p>
Individuals	<p><b>3. Mechanism:</b> Political leaders and influential founders create powerful policies or organizations that define the arrangements and templates of a field or industry in an enduring way</p> <p><b>Example:</b> Mao Zedong’s ideology of self-reliance having a lasting influence on industrial structure in China (Raynard, Lounsbury, &amp; Greenwood, 2013); Rockefeller developing the vertically integrated oil industry through Standard Oil (Chernow, 1998)</p>

The original model of multilevel imprinting depicted in Figure1 represents multiple sensitive periods and defines environment as a varied, n-dimensional space with economic, technological, institutional conditions and individual influencers. The first block on the Figure1 presents the first sensitive period of cluster: foundation. During foundation cluster is vulnerable to its environment. Environmental forces emerge from economical, technological and institutional sources or surface because of the influence of individuals and stamp their mark during the early years of the cluster. Second part shows the imprint persistency. During the non-sensitive period the stamp of foundation is still carried by the cluster. Imprinting process might occur multiple times during a life course and the last section of the model illustrates other possible multiple sensitive periods. During a new sensitive period, different forces come into play and lead to either a new imprint, modification, replacement or decay of the existing imprint. As described in the multi-level imprinting theory, according to Marquis and Tilcsik (2013) the factors that contribute to the persistence of imprint over time are namely the limited learning in the non-sensitive period, the lack of competitive threat, taken for granted nature of status quo and inertial forces (e.g vested interests).

**Figure 1: General Model of Multilevel Imprinting,**

Source: Marquis and Tilcsik (2013)

Even though MLIT offers a rich insight based on environmental influences and emphasizes a dynamic process of multiple imprints, which adopts a historical view, it still suffers from a series of shortcomings. Only recognizing that history matters does not help to understand how it matters (Jones & Khanna, 2006; North, 1990). To date, much research has focused the features, sources of imprint and how they are persisted. Less attention has been given to the explanation of imprinting process through evolutionary mechanisms. General model of imprinting is a promising and powerful approach to address how environment contributes to the evolution of a focal entity in a multidimensional way, but it cannot explain why some imprinting attempts or powerful environmental conditions fail to cast their mark on the focal entity even if there is a sensitive period. Marquis and Tilcsik (2013) adverted some mechanisms like “window of imprintability” or emulation of imprint, but these mechanisms are not explained in their model explicitly. Considering the model, there are four fundamental research opportunities are located:

First, even though MLIT assesses the imprints in different levels, the model is unidimensional and works for each level. For example, when an organization collective is under study, it does not reveal how organizational level variations subsequently translate into population imprints. The model treats collective as a whole without considering that collective is also the sum of all organizational members.

Second, not every imprinting attempt by the environment stamps its mark, therefore it is necessary to reveal how the characteristics of environment pass to the focal entity in a more comprehensive manner. To locate an imprint, tracing the blueprints of focal entity is necessary, the imprinting process can be understood through explaining how hereditary factors that defines all explicit and implicit characteristics of a focal entity interact with environmental variables. In this way, we can reach a fuller understanding of the triggers, enablers, mechanisms in pattern formation, which are not described in the original model of multilevel imprinting.

Third, explaining WOI is necessary to capture the underlying causes in the particular case, where imprinting factors favor one region to another as well as the elimination of firms and their routines previously sheltered from environmental conditions. Thus, an evolutionary type of explanation about how imprinting factors favor one region over the other is necessary.

Lastly, features of the emulation mechanism and inheritance of imprints need further conceptualizing in the model. Marquis and Tilcsik (2013) explained that the patterns, which are established during the sensitive periods are then perpetuated by subsequent organizations’ emulation of the older members residing in that collective. This process is defined as the secondhand imprinting, but the sub-mechanisms of secondhand imprinting is not defined. Thus, an evolutionary approach is necessary to explain the diffusion of imprinted elements, and how variation of few firms amplifies an imprint on the population scale.

In the next section, our aim is to conceptualize a refined model based on an evolutionary perspective to further investigate these black spots. Distinguishing evolutionary mechanisms and how they operate in different analytical levels will help us to understand a holistic picture of the collective interaction of environment and organizations.

### 3. CONCEPTUAL MODEL

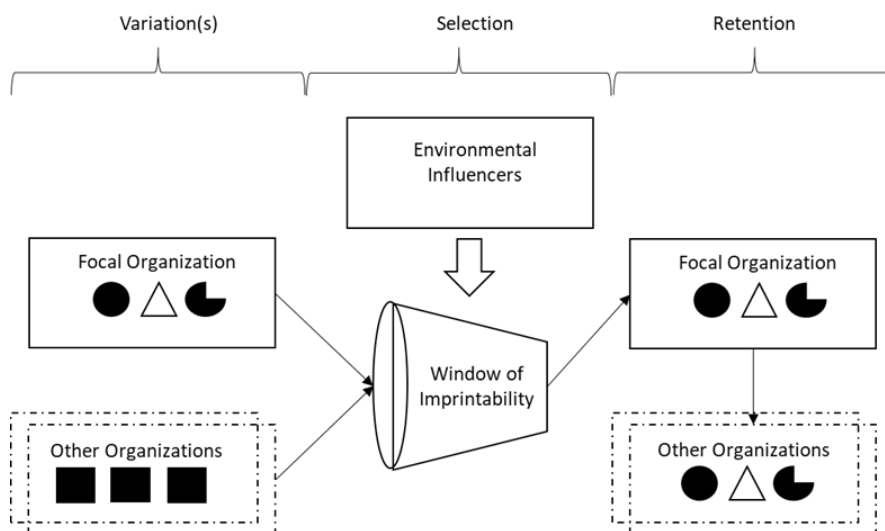
#### 3.1. Linking Evolutionary Process and Environmental Influencers

A framework explaining the evolution of cluster through linking evolutionary process and environmental underpinnings would enhance our understanding towards how imprinting theory works in organizational collectives. This study is one of the very few attempts to address evolutionary mechanisms that influence cluster of firms, but also it offers the blending of two different evolutionary approaches, namely, Imprinting Theory and General Darwinism.

As we have previously discussed, MLIT, originated from biological ecology, has considerably leveraged our understanding towards how historical environmental influencers leave their mark on focal entities (e.g. organizational collectives). Yet, biological ecology also tells us that nurturing (environment) is not the only influencer shaping entities, as nature (genes and hereditary factors) is another strong influencer in the process. Hull, Langman and Glenn (2001) argued that both gene replication and interaction between the organism and its environment play part in the evolutionary process. Nature is, therefore, a highly referred influencer in the evolutionary economic geography under generalized Darwinism literature. As one most fertile approach to use ideas and concepts in evolutionary economic geography, variation, selection and retention can also highlight the causality about the conditioning factors embedded in the imprinting process.

Since it is hard to identify whether heredity or environmental influencers are responsible for a particular trait of a focal entity, most researchers acknowledge that both nature and nurture influence the behavior and its developmental patterns. If we accept the ontological communality of biological and social domains, then the application of it in the social domain should highlight how rules of nature (General Darwinism and others) work with rules of nurture (Imprinting). We suggest that in order to understand what constitutes suitable social interactors and how interaction with the environment results in a potential selection should be carried to the domain of organizational collectives. By enhancing imprinting theory with variation, selection, retention (VSR) mechanisms in the Figure 2, the basis for the analytic framework, which explains how clusters are shaped by unfolding events in history, can be established.

**Figure 2: Imprinting on Organizational Populations, VSR Mechanisms and Window of Imprintability**



The imprinting requires a sensitive period. Temporary conditions, shocks, as well as historical 'accidents' may create this sensitive period, but the main indicator to be classified as sensitive period is increased malleability of focal entity by environmental conditions than in normal times. During the foundation a focal entity is often vulnerable to its environment and environmental forces. Although, it is well established that there may be multiple sensitive periods within the life cycle of a focal entity, foundation represents a recurrent stage for sensitivity due to the scarcity of both symbolic and material resources.

The window of "imprintability" is only open during the sensitive periods as economical, technological, institutional conditions and powerful individuals try to stamp their imprints on a focal entity within a cluster. However, not every environmental influencer succeeds to put its stamp in this brief sensitive period. Hereditary factors apart from environmental ones play an important role in the selection. Thus, understanding the mediation dynamics in the selection and retention mechanisms are important to locate the success factors of imprints at the cluster level. The last step of the imprinting process is retention as the retention mechanism carries the impact of the imprint to the critical mass via replication and/or diffusion. During the retention step information (features) concerning adaptations is passed on to other entities in the cluster. Retention step leads imprint persistency through local spin-offs and localized learning.

The original multilevel imprinting model explains the imprinting in only three steps: Existence of a brief sensitive period, imprinting with a powerful impact of the environment and persistence of the characteristics developed during the sensitive period. In the next section we complement the original MLIT steps with evolutionary mechanisms of VSR.

### **3.2. Variation**

Variation is generated through transformation and emergence of new properties and provides the fuel for evolutionary change. Without variation, the population would be stuck in equilibrium (Hodgson 2001; Essletzbichler, 2012). This change could be the result of random mutation, Schumpeterian entrepreneurial actions, recombination of existing characteristics, routines or importation of new characteristics from other places (Essletzbichler, 2012). In any manner, variation is necessary for selection to occur. After variations occur, selection process operates on the variations. In order to understand why certain varieties survive, we need to understand the selection mechanism.

### **3.3. Selection**

Selection entails that those interactors with traits that fit the locally and historically specific environmental context better are characterized by higher survival rates, and, in turn, higher rates of replicative success. Darwinism offers an algorithmic logic predicated on a feedback loop between variety, inheritance and selection that can explain adaptive complexity. A general description of the selection process is made by Hodgson and Knudsen (2010, p.92): "Selection involves an anterior set of entities that is somehow being transformed into a posterior set, where all members of the posterior set are sufficiently similar to some members of the anterior set, and where the resulting frequencies of posterior entities are correlated positively and causally with their fitness in the environmental context. The transformation from the anterior to the posterior set is caused by the entities' interaction within a particular environment". Here, selection does not have to lead to the most efficient outcomes. Beyond that, cooperation is at least as important as competition considering multilevel (or group) selection processes (Sober and Wilson, 1998)

As stated by Price (1995) subset of elements from an anterior set is selected and this selection changes the composition of a population. After an industrial crisis or shock a group of firms from anterior set are selected (selection of interactors) and this selection will result not only in the elimination of some firms but also the removal of their routines from the population (selection for replicators) because the selection process will not stop until variation disappears, and changes in population are caused by a systematic interaction between fitness and survival (Essletzbichler, 2012).

There are two complexities related to selection process for firms or firm groups. First, selection as a result of changes in the environment could work on multiple traits of entities, which makes the selection process more complicated. Second, survival of firms also depends on their adaptability in response to the changes observed in the environment. The environment is not totally exogenous to the firm and the interaction of firms or group of firms with their environment represents an important factor for the selection process.

### **3.4. Retention / Inheritance**

Selection process is followed by replication process, which creates the new path for the surviving subset. The inheritance refers to a different mechanism, including diffusion and other forms of replication, by which information concerning adaptations is passed on or copied through time (Hodgson and Knudsen, 2010).

The environment acts directly on interactors but not replicators. Yet, the role of replicators (e.g. routines) on social interactors (e.g. firms) under pressures of the particular environmental context, in which the interactor operates, is important for understanding the retention process. A replicator is a structure hosted by the entity, which is causally involved in the replication process. The frequency of similar replicators within the population is increased and the fitness in social evolution is achieved through either by diffusion of replicator to other interactors (eg. knowledge spillovers, localized learning) or by making copies of the interactor (e.g. spin-offs), by this way the characteristics of the interactors are passed on by replicators (Essletzbichler, 2012).

As stressed by Essletzbichler (2012), replicated information by itself is inadequate to provide a complete description of the emerging interactor, as the replicator does not replicate by itself but includes building instructions for the development of interactors that are stimulated by particular environmental conditions. The information that makes the copy entity similar to its source is obtained during its creation. Since the environment does not act on (recognize) replicators directly, replicating entities are not manipulated directly by the environment and for this reason, information (adaptive experience) is able to accumulate over generations (Essletzbichler, 2012). The replicators related for each interactor are relatively durable compared to their host interactor, in an example, routines, apprenticeship are passed on other firms and continues even if individual firms hosting them do not survive.

Applying GD to economic geography then requires an understanding how the abstract principles of variation, selection and inheritance can be operationalized to explain the historically specific, inconstant and differentiated geography of capitalism. GD is not contradicting but complementing existing work in EEG (Essletzbichler, 2012). How industries emerge and develop across space, how regional economies function as 'selection' environments, how far and in what ways various 'retention' mechanisms reinforce spatial patterns of economic activity require aggregation and synthesis of different approaches. Accordingly, we will try to solidify how mechanisms of VSR can be integrated with the mechanisms of MLIT to better explain the evolutionary dynamics of specific clusters. The next section details our historical comparative analysis framework and selection of historical case studies to empirically illustrate the operationalization of the aforementioned mechanisms.

#### 4. DATA AND METHODOLOGY

In our study, we argue that in order to enhance our understanding about the spatial behavior of cluster, there is the need to uncover its specific evolutionary path, which is based on relatively sensitive and insensitive periods and a multitude of imprints. This effort needs exploring the cluster as a contextually bounded system over time. Moreover, the enhanced framework established to develop the imprinting phenomena suggests that deep understanding of the mechanism with its mediators requires using comparative cluster cases, each based on rich historical data. Comparisons between clusters is necessary to demonstrate the causality between changes in economic and social landscape over historical time and the trajectory of the cluster. From this perspective, historical-comparative analysis would help us to enhance our insight.

Historical-comparative analysis (HCA) is an important research approach in the social sciences, especially in political science and sociology, which often works at the meso- or macro-level and employs variety of comparative and within-case methods (Lange, 2014). Influenced by pioneers like Adam Smith and Max Weber, HCA methods have been applied for a long time to analyze scientific revolution, social change, and democratic movements during the nineteenth century. HCA emerged as a new research tradition specifically after 2000s (Mahoney and Rueschemeyer, 2003). Small number of comparative cases and within-case analysis are two of the most distinguishing features of HCA, which tend to positively influence each other in terms of validity and reliability (Lange, 2014). Even though narrative studies have a disadvantage in generalizing causal arguments, they possess several advantages (Abbott, 1995; Mahoney 2000; Rueschemeyer and Stephens, 1997) like: (1) *comparing a holistic phenomenon*; (2) *in-depth understanding of actual path leading to the results*; (3) *highlighting the influence of past events*; (4) *analyzing mechanisms*.

As Yin (2003) eloquently expressed, case studies are often utilized when researchers deliberately want to uncover the influence of contextual conditions on the phenomenon of the study. Thus, in terms of our focus, type of problem and unit of analysis a historical case study research becomes the most convenient approach for the study. HCA mostly utilize secondary data sources like written historical books, articles, eyewitness accounts, life stories. As a qualitative research approach, reliability is much more about consistency and validity is related to authenticity (Neuman and Robson 2014). In the next section, two cases from the empirical literature are revisited, evidence from the cases is used to identify the mediators and reinforcing mechanisms of imprints. Once mechanisms are clarified their relations with the contextual conditions are also unraveled.

The first case is written by Steven Pinch & Nick Henry (1999), entitled "Paul Krugman's Geographical Economics, Industrial Clustering and the British Motor Sport Industry". In their article, Pinch and Henry originally examine the applicability of Krugman's ideas for explaining the geographical cluster of British motor sport industry and its remarkable upsurge. They argue that Krugman's

emphasis upon accidents of history and external economies of scale provides only partial explanation for the evolution of this cluster and underrepresents potential explanations offered by the social constructionist processes. The case data are based on face to face semi structured interviews with 50 senior managers, designers, engineers and enormous secondary data gathered from literature surveys on car racing industry, biographies and professional journals.

The second case is written by Bathelt and Boggs (2003) and titled "Towards a Re-conceptualization of Regional Development Paths: Is Leipzig's Media Cluster a Continuation of or a Rupture with the Past?". In their article Bathelt and Boggs examine the evolution of two media industries in Leipzig, Germany, namely the new TV/ film production and interactive digital media cluster and the old book publishing media cluster. These clusters are shown as connected structures, indicating the continuing history in media industries of Leipzig. On the other hand, Bathelt and Boggs (2003) argue that technological and political crises act as mechanisms, which rupture the regional development paths and trigger localized learning as the driver of economic growth.

## **5. FINDINGS AND DISCUSSIONS**

### **5.1. Case One: British Motor Sport Industry (BMSI)**

This industry is located around Oxfordshire in England and considered as "Motor Sport Valley". Approximately 75% of the total single seated racing cars including Formula One, Indy Racing League, Championship Auto Racing cars are designed and manufactured in this cluster, which hosts small, flexible, technologically sophisticated companies, with a high degree of export orientation (Pinch and Henry, 1999). Between WWI and WWII there was no British-designed and manufactured car participating in a grand prix race in Europe. Right after the WWII Italian companies such as Ferrari, Alfa Romeo and Lancia began to dominate motor racing. However, within a few years, the small companies in southern England caught up and began to dominate motor racing and maintained their pole position since then (Pinch and Henry, 1999). Aston and Williams (1996), attempted to explain the rapid rise of the BMSI through series of accidental factors, which are summarized below:

- 1) Accident at Le Mans racetrack in 1955, in which a Mercedes racing car spun off, resulting in 183 spectators being either killed or injured and withdrawal of Mercedes team from motor sport,
- 2) Unused airfields after WWII provided infrastructure for motor racers and nest for local racing clubs fostering enthusiasm and practical experience,
- 3) Despite the vertically integrated manufacturers like Ferrari and Porsche, which are building cars exclusive to their own teams, British-based constructors would sell their cars to anyone,
- 4) The ban on cigarette advertising on British television in 1965 resulted in the channeling of their marketing expenditures to racing sponsorships, beginning with Lotus in 1968.

Explaining the rise of BMSI only through these accidental factors would be insufficient and misleading. Explaining how history plays its role on regional configuration of economic activity requires more than spotting the historical accidents. Moreover, it should also be noted that the British-based manufacturers were quite well established before the cigarette manufacturers entered the fray, so it is a consequence not an antecedent (Pinch and Henry, 1999). The withdrawal of Mercedes, utilization of unused airfields might provide a 'window of opportunity' effect but these accidents only explain the contingent characteristics of the sensitive period not the mechanism itself. In order to reveal this mechanism, referring to the imprinting theory, the whole feature set of the environment (economic, technological, and institutional) or individuals, who provide notable influence on the focal entity during sensitive periods should be examined. Pinch and Henry (1999) provides convincing explanations on the mechanism while supporting the theoretical lens of imprinting.

#### **5.1.1. Evolution of Motor Sports Industry and the Source of Imprint**

The history of motor racing provides a classic example of a radical shift in technology and changes on the technological conditions originated mostly from aerospace industry rather than car manufacturing (Pinch and Henry, 1999). They explain the technological superiority of British-designed cars as:

"The lightweight mid-engined racing cars produced by the British-based constructors in the 1960s were superior to the heavy, front-engined cars produced in Italy. These British-designed cars called for radically different types of knowledge to those previously incorporated into motor sport. First, there were changes in engines; large heavy units were replaced by lightweight aluminum configurations. Second, aerodynamics became essential in racing car design. Third, as weight reduction became crucial, experience in composite materials that could combine strength and weight came to the fore."

Development of Britain aerospace industry can be traced back to governmental support for aircraft manufacturing in the 1920s and 1930s under military race. After WWII, British aerospace industry remained massive in relation to the size of the country (Hebb, 1993). The table2 below shows the main aerospace-derived influences on technological innovation in the motor sports. As a result of this technological shift, the locus of the industry shifted very rapidly from northern Italy to southern Britain.

**Table 2: Key Aviation-Inspired and Automotive-Inspired Innovations in Formula One Racing (Pinch and Henry, 1999)**

Innovation	Aviation Use	Formula One use
Active suspension	Computer based control	Improved handling (banned in 1993)
Aerodynamics	Efficiency in the air, fuel economy, speed etc.	Speed but also downforce
Aero engines	Combination of light weight with high power output	Combination of light weight with high power output
Aluminum	Used in aircraft structures	Widely used in early chassis / cockpit design
Carbon composites	Used in aircraft structures	Used in monocoque construction
Carbon disc brakes	High efficiency and light weight braking	High efficiency and light weight braking
Carbon fiber clutch	Not directly used but aviation inspired	Light weight and strength
Computer based telemetry	Rapid communication of technical data	Rapid communication of technical data
Fly-by-wire	Weight saving electronic control	Weight saving throttle-by-wire control
Turbo charging	Extra performance at high altitude	High power output (banned)
Wind Tunnels	Testing aerodynamics	Testing aerodynamics
Wings/ winglets	Support in the air	Downforce for grip

### 5.1.2. Source of Variation

The first point is to reveal the source of variation, by which the changes in environmental conditions become significant for the focal cluster. In the diamond model, which defines the microeconomic foundations of economic development, Porter (1998) highlights the importance of specialized factors that are integral to the innovation and marks trained personnel as the most obvious element in improving factor conditions. Highly skilled workers were pivotal in transferring the necessary knowledge from aerospace industry. By the 1950s, over 16% of Britain's qualified scientists and engineers were engaged in research and development in the aviation and despite the Italian industry, many of the leading designers and engineers in motor sport were originally trained in aeronautical engineering (Pinch and Henry, 1999)

### 5.1.3. Selection Mechanism

The withdrawal of Mercedes could have provided a WOI for all manufacturers in motor sports industry, but British manufacturers exploited this gap more than their competitors in Italy. This was possible through lightweight aluminum configurations and weight reduction know-how, which were acquired from aerospace connections. Contrarily, Italian Industry did not have the same amount of aircraft-inspired know-how, and as a result, powerhouse of the industry shifted from northern Italy to southern Britain (Pinch and Henry, 1999)

### 5.1.4. Retention Mechanism

As being technology driven, the new knowledge generation is crucial for motor sports industry and competitiveness depends on supremacy in this continuing process. For this very important reason, knowledge dissemination is much more important for technological imprinting cases. In the case of British motor sport industry, need for knowledge supremacy creates a frictionless reinforcement process through diffusion of aviation-inspired technologies. Knowledge about design, production and operation of racing cars are mostly possessed by designers, engineers, fitters and mechanics, and carried by them. The main knowledge dissemination processes are listed as high staff turnover, information leakage through component suppliers, high rate of new firm formation after failures, informal collaborations, information gained through personal contacts and observations during races (Pinch and Henry, 1999). Staff exchange acts as the main carrier of crucial information between companies as it is quite often in

BMSI. Analysis of professional career histories showed that the average move during the career is eight times, which equals to 3,7 years of tenure in each company (Pinch and Henry, 1999).

It is obvious that the flourishing of BMSI is not solely based on accidental factors. Although, there were powerful endogenous factors like the presence of local racing clubs and the tradition of engineering industries, the variation that led to the technological superiority was the intervention of aerospace industry through mobilization of its factor conditions. Withdrawal of Mercedes reinforced the effect of window of opportunity, but the competitive edge of British industry was the ultimate factor that enabled it to prevail against Italian industry. In this sense, the main environmental influencer was technological conditions, not the Mercedes accident.

## **5.2. Case Two: Leipzig's Media Cluster**

Leipzig media cluster, which includes different media branches consisted of 1500 firms in year 2000 (Bentele et al., 2000). Although, in national terms, Leipzig media cluster is smaller than other clusters and does not qualify as a primary media cluster, the current scale is enough to produce further agglomeration (Bathelt, 2002). The media sector had 25,600 permanent employees and 14,600 freelance consultants, which amounts to about 16% of the regional labor force (Bentele et al., 2000). Survey conducted by Bathelt (2002) indicated that, most of the survey firms operates under new electronic services/interactive media branch with 35,3%, followed by PR/marketing (26,5%) and Film/TV production (23,5%).

After the German Reunification in 1990, most industries faced with crisis and downsized dramatically due to the breakdown of the state-planned economy. The media industry of Leipzig is born in this period (Bathelt and Boggs, 2003). Since the birth of the media industry in Leipzig was very recent, most of the firms were quite young. While 115.000 workers were employed in the manufacturing/mining/construction business in 1991, this number dropped to 59.000 in 1997. By July 1999, around 19,000 workers were employed in Leipzig's manufacturing sector (Statistisches Landesamt des Freistaates Sachsen, 2000). This decline resulted in the relocation of workforce from East to West Germany, where significantly more employment opportunities existed.

Moreover, Leipzig did not have a tradition and never held an important position in radio, TV industry (Sagurna, 2000). During DDR the radio and TV industry was mostly concentrated in East Berlin – Potsdam which attracted actors, technicians and other media workers from all over the country (Bathelt, 2002). This concentration in Potsdam can be recognized even today and was still referred as the center of the German Film Industry (Krätke & Scheuplein, 2001). Despite the lack of tradition in media industry, development of new media cluster is quite interesting. Although, some of the local politicians and city planners interrelated birth of new media cluster with the pre-War book publishing industry, Bathelt and Boggs (2003) showed that the evolution of two clusters have detached paths. The evolution of Leipzig cultural production industries were analyzed in 3 main periods, first, evolution of the book publishing industry until 1945, second, book publishing industry during the G.D.R (The German Democratic Republic) and reunification, lastly birth of new media cluster in Leipzig after German reunification.

### **5.2.1. The First Period: Evolution of Book Publishing Industry Until 1945**

Leipzig held a strong tradition in book publishing. The first book printer-publisher was established around 1481 in Leipzig, 30 years after the invention of moveable-type printing press, which changed the economic geography of publishing in Central Europe (Menz 1942; Schulz 1989; Schönstedt 1991). Gutenberg's invention not only integrated traditional suppliers like paper manufacturers, rag millers, page illustrators and book binders to the new industry, but also created new type of suppliers such as type-casters and press manufacturers. Thus these developments revolutionized the structure of the industry and the division of work. Subsequently, printing press diffused to all Central Europe through printers' apprentices, who sought out new urban markets (Bathelt and Boggs, 2003).

During the period of technological diffusion, Leipzig also had a main locational advantage, it had a central position in trading routes (Gormsen 1996). At the same period, Frankfurt was also one of the most important fair towns due to its central geographical location. In the 16th century, Frankfurt was also a principal book market in the Western World, but by the end of the 17th century Leipzig had dominated the book publishing (Weidhaas, 2009). By the end of 18th century, Leipzig book publishing industry developed into a Marshallian industrial district with its comprehensive competitive and complementary activities, accompanied by well integrated interregional and international markets (Boggs 2001). The reason behind the primacy of Leipzig and collapse of Frankfurt in book publishing can be understood through the analysis of the VSR mechanism.



### **5.2.1.1. Source of Variation**

Reformation changed the precapitalistic European social and economic order. By 1519, Luther had become Europe's most published author with 45 original compositions with nearly 300 editions. Luther personally agreed with top printers from Leipzig, and only in three years, Luther had produced around 160 writings addressing the Christian people of Germany in their own language (Pettegree, 2017). Leipzig's book printers were specialized in German dialect texts and heretical works, where Frankfurt was focused more on Latin texts. This differentiation was a heredity factor for both agglomerations, which was carried till the rupture by the Gutenberg's invention.

### **5.2.1.2. Selection Mechanism**

Gutenberg's invention of the moveable-type printing press opened a window of opportunity for both Leipzig and Frankfurt. However, the study of Dittmar (2011) showed that the diffusion of printing press is based on the distance from Mainz. Leipzig enjoyed the window of opportunity rather than Frankfurt, since it was closer to Mainz.

Possessing cultural proximity to protestant reformation helped for publishers in Leipzig to capture the opportunity, which helped the local industry to become a major location for reformist printing since early 16th century. Leipzig's book fairs were also far friendlier than Frankfurt's to the reformationists (Bathelt and Boggs, 2003). Frankfurt's book fair, on the other hand, was mostly dominated by Latin texts with International participants. This variation worked in the advantage of Leipzig as the demand for Latin texts declined and demand for German texts surged during the next few centuries. Leipzig was attracting foreign publishers, but published increasingly more German dialect texts. (Bathelt and Boggs, 2003)

### **5.2.1.3. Retention Mechanism**

The process, which was used to cast movable metal type mill was complex. In order to produce the suitable metal type, printers needed a type of alloy which was strong and ductile; hard and nonporous; non-corrosive and maintained the plane-parallel shape of the castings when cooled (Dittmar, 2011). This know-how was a trade secret and the printers, who established presses in cities across Europe were almost exclusively Germans. Most of them had been apprentices of Gutenberg and his business partners in Mainz, or had learned from former apprentices (Dittmar, 2011). As these apprentices looked for new urban markets, the geography of production and local economies had changed dramatically. The demand for new suppliers as type casters, press manufacturers etc. put its stamp on urban division of labor, and as a result, Leipzig not only became an important trade center but also one of the Central Europe's earliest book publishing sites (Bathelt and Boggs, 2003).

## **5.2.2. The Second Period: Evolution of Book Publishing Industry during the G.D.R**

### **(The German Democratic Republic) and Reunification**

Before the World War II Leipzig book publishing industry contained 300 book publishers, 500 allied firms and the German Library (the Deutsche Bücherei). However, during WWII 80% of all physical plants were destroyed by air strikes and skilled labor were relocated into other crucial industries during the wartime (Bathelt and Boggs, 2003). Furthermore, during GDR regime, nationalization, censorship and U.S. attraction drove away the remaining skilled workforce from Leipzig to the West zone. Not only workers but also institutions were relocated in the West. Among these institutions, which were moved to the West were Frankfurt Börsenverein (German Publishers Association) and the Deutsche Bibliothek (German National Library). Frankfurt Book fair was restored after 200 years, as Leipzig lost its status in the industry (Bathelt and Boggs, 2003). GDR was running a soviet-style planned economy, which was blocking not only market-oriented competition, but also hindering the sophistication of the demand. Furthermore, book publishers in Leipzig became technologically underdeveloped and poorly equipped compared to their Western competitors during the GDR rule. (Karrasch 1989; Volpers 1991; Gormsen 1996; Wittmann 1999; Boggs 2001)

In 1990, after German Reunification, the Förderverein Medienstadt Leipzig (Development Association of the Media City Leipzig), initiated a program for re-development of the Graphisches Viertel as a site of book publishing and affiliated industries (Schubert, 2000) and restored the city as a major center of book publishing in Germany. The Förderverein's mission to position Leipzig as a media city with media-related businesses and institutions failed. Neither the importance of Leipzig's book fair was restored nor did publishing houses flourish. Instead the industry underwent massive de-industrialization. (Volpers 1991; Lemke 1992; Börsenblatt 1993; Bach 1995; Denzer and Grundmann 1999; Wittmann 1999; Boggs 2001; Berg et al. 2001). The political initiative didn't create any change in the cluster dimensions.

### **5.2.3. The Third Period: Birth of New Media Cluster in Leipzig after German Reunification**

Although, some of the local politicians and city planners interrelated birth of new media cluster with the pre-War traditional industry of book publishing, the birth and growth of the new media industry in Leipzig was influenced more by the establishment of MDR (Mitteldeutscher Rundfunk; or Middle German Broadcasting Service), a public television and broadcasting network (Denzer and Grundmann 1999). Moreover, Leipzig had never played an important role in the television and film industry (Sagurna 2000). The G.D.R. television and film industry had a rigid hierarchical characteristic and was concentrated in East Berlin and nearby Potsdam. Leipzig only housed a small studio during the GDR rule (Gräf 2001; Krätke, and Scheuplein 2001).

#### **5.2.3.1. Source of Variation**

Actually, the establishment of MDR in Leipzig was a political action, Leipzig was located in the center of southeastern Germany close to three German states (Länder) Saxony, Saxony-Anhalt and Thuringia. Leipzig was the only city in Saxony, which could be accepted by politicians from all states that could benefit from the investment in media sector due to its central location (Bathelt 2002). The formation of this cluster was not embedded in historical roots in the book publishing industry. It has developed by local start-ups and different facilities that served for the MDR (Berg et al. 2001). The location of new media industry was not the Graphical Quarter, which housed book publishers, but the Leipzig-Connewitz, that was located at the city's southern district (Denzer and Grundmann 1999).

MDR's foundational strategy was to outsource its functions to its separate subsidiaries and local suppliers. In order to accomplish this strategy MDR called for experts from different professions like film teams, technicians, cutters, reporters, news agencies and other media specialists from other regions to establish a branch in Leipzig and offered them long term contracts (Bathelt 2002). By this way, suppliers and service providers forced to establish their branches in Leipzig and they brought professional expertise to the region. Establishment of MDR triggered the development of specialized competencies, which, in turn, initiated other start-up activities from within the region (Bathelt 2002).

#### **5.2.3.2. Selection Mechanism**

Although Leipzig did not possess capabilities required by TV and film industries, the new media industry developed around MDR, which became the anchor organization in the cluster (Sagurna 2000; Schubert 2000; Bathelt 2001). The cluster firms were deeply connected with MDR and with each other. Furthermore, they were also connected to other actors in the region like new Leipzig convention center, which indicated that there were strong vertical relations between the firms of the cluster. After its establishment, MDR rapidly became the anchor organization in TV and media industry in Leipzig, which was the one of the few economic sectors that grew in the post-Reunification period (Sagurna 2000; Schubert 2000; Bathelt 2001). Here, as opposed to the old publishing industry case of Leipzig, new firms that were established around MDR were subject to a selection mechanism within the cluster rather than between clusters.

#### **5.2.3.3 Reinforcing Mechanism**

The new media industry was born through the re-organization of Leipzig's local assets and interactive learning. The industry became one of the few economic sectors that helped Leipzig's economic growth after the reunification. The education institutes which supported local learning during the process are listed below (Bathelt 2002).

1. The University of Leipzig (Institute for Communications and Media Studies)
2. Hochschule für Technik, Wirtschaft und Kultur (HTWK—College for Technical, Economic and Cultural Studies)
3. Hochschule für Graphik und Buchkunst (College for Book and Graphic Arts),
4. Fachschule der Deutschen Telekom (German Telecom Training Centre),
5. Fernsehakademie Mitteldeutschland (Middle German TV Academy),
6. Medienakademie Leipzig (Media Academy Leipzig)
7. Sächsische Akademie der Werbung (Saxon Marketing Academy)

The higher education institutes and special training programs not only supported the creation of specialized knowledge base in media but also they enabled the accumulation of practical experience through joint research projects with media firms from TV and film production, multimedia and internet applications (Bathelt 2002). The graduates from these institutions created a specialized knowledge base in a wide variety of media-related fields. The students were able to gather practical experience during their studies and conducted research projects together with local media firms, especially in the area of TV and film activities and multimedia and internet applications. Moreover, another way to gain practical experience for many students was having part-

time jobs or working during the semester breaks, which, in turn was conducive for local media firms to acquire and accumulate knowledge (Bathelt 2002).

In 1998, a joint bureau for start-up consulting and finance (ugb- the Unternehmensgründerbüro) was established by the Leipziger Sparkasse (an important local bank), the City and County of Leipzig and an industry association. The state programs, such as Saxony's Filmförderung, provided financial support for film festivals and European Social Fund of the European Union provided financial support for start-ups (Bathelt 2002). These initiatives served to establish an attractive environment for new entrants and spinoffs, which played an important role to reinforce the imprint of MDR.

In 2000, the Media City Leipzig was established as an incubator and technology center with 36,000 m<sup>2</sup> of office space, workshop and studio space for TV and film-related firms (Schubert, 1999; 2000). The facilities provided not only working areas for firms but opportunities for interfirm communication, knowledge transfer and interactive problem solving. Furthermore, MDR also forced its subcontractors and suppliers to establish their business in the Media City (Bathelt, 2002). In addition to Media City Leipzig, the media center called The Medienhof Leipzig-Stötteritz housed 20 firms and Business & Innovation Centre Leipzig (BIC Leipzig) in Leipzig-Plagwitz provided workspace mostly for start-ups (Schubert, 1999, 2000).

Moreover, in the private media clubs, which primarily limited their user base to media people, professionals from media industry gathered after work and shared their ideas, discussed various issues related to project Bathelt (2002). Thus, it is probable that these business circles acted as an incubator for new knowledge creation and new start-ups.

## **6. CONCLUSION**

As we have discussed in the previous parts, existing explanations about regional clusters fail to offer vivid mechanisms by which historical unfolding of clusters in different regions are explicated. Although recent approaches like MLIT provide us with fairly satisfactory explanations, their analyses are often too generalized and do not adequately address how clusters, made up of multiple interactive firms evolve or do not evolve over historical time. In this vein, we synthesized the theoretical model of Marquis and Tilcsik (2013) by classical GD motor – variation, selection, retention- to represent how clusters evolve and which environmental and hereditary factors determine such evolution. By opening the black box of MLIT, the model explains how the history influences the sustained configuration of spatial economic activity.

Our historical comparative analyses of two empirical case studies -Pinch and Henry's BMSI and Bathelt and Boggs's LMG- significantly corroborated our theoretical insights and displayed a considerable fit with our proposed analytical model. The summary of our findings about each case in terms of their evolutionary dynamics are presented in Table 5. In the case of BMSI, Pinch and Henry (1999) highlighted the origins and development of motorsport industrial cluster and provided crucial insights on key elements. As being a creative industry, it is not surprising to observe the important role of changes in the technological trajectories and effects of knowledge dissemination among firms. Nevertheless, the case of British Motor Sport Industry fits our synthetic imprinting model and provides information on the variation, selection and reinforcing mechanisms. Replacement of the qualified workforce (designers, engineers etc.) from aviation industry was the source of variation in the technological know-how of few firms and as the superior know-how diffused among firms of the cluster, it subsequently changed the whole motor sports industry. The know-how change should be understood as a change in the replicators of initially varied forms, which were selected by the environment because of their superior performance. WOI opened after the Mercedes accident was more effectively leveraged by BSMI instead of Italian motor sports industry due to the technological superiority acquired from aerospace industry. Spin-offs and other knowledge dissemination mechanisms among the pioneering firms of the BMSI acted as a retention mechanism as the superior replicators diffused among all firms in the cluster, entirely transforming them.

The second case written by Bathelt and Boggs (2003) was composed of three episodes, each of which contained different sensitive and insensitive periods on their own. All three episodes provided valuable information about the mediating factors and reinforcing mechanisms to solidify our synthetic model.

During the born of early stage book publishing industry, the main technological development was the invention of Gutenberg's moveable-type printing press. This technological trajectory created a sensitive period, opened a WOI and led to the flourishing of publishing industry in Leipzig instead of Frankfurt, which was closer to Mainz where new technology was invented. Same trajectories with similar favorable initial conditions resulted in two different ends. The main reason behind the difference was the presence of a heredity factor (specialization in German texts) at the time of sensitive period. Being close to protestant reform movement favored publishers clustered in Leipzig and German text, whereas Frankfurt's book fair was mostly dominated by Latin

texts with International participants. The demand condition established in the sensitive period of technological change worked against the publishers in Frankfurt, which lacked necessary replicators, and mediated the selection of Leipzig cluster.

Having its 80% of physical plants destroyed and skilled labors relocated after the World War II, book publishing industry in Leipzig was never restored despite the several initiatives. Moreover, during GDR, nationalization, censorship and U.S. attraction disintegrated the remaining skilled workers from Leipzig and book publishers in Leipzig become technologically underdeveloped and poorly equipped compared to their Western competitors. In 1990, after German Reunification, a program was initiated for re-development of the book publishing industry in Graphisches Viertel but this program failed. But why did not this favorable political condition turn into a stamp on book publishing? The reason behind malfunction of the environmental condition in this sensitive period was the absence of a successful VSR mechanism. Book publishing industry in Leipzig was suffering not only from the lack of necessary skilled workforce, but also technological infrastructure. Thus, the initiative could not create a sufficient variation, which could result in the positive selection of pioneering firms. The resource and capability sets of existing firms in Leipzig could not absorb the variation and the WOI was not even opened for them.

Another political initiative after German Reunification was the establishment of MDR, the public television and broadcasting network. This initiative did not intend to establish an industry at all. The establishment of MDR in Leipzig was the result of a political move, which triggered the establishment of a new media industry in Leipzig. MDR became the anchor organization in the cluster by outsourcing its functions to local suppliers, attracting media specialists from other regions and forcing them to establish their branches in Leipzig. In this process, not only higher education institutes, special training programs and joint research projects but also start-ups supported by incubators acted to reinforce the stamp of MDR. Moreover, MDR was the vehicle that facilitated the imprint of political interference and acted as a selection mechanism itself. This type of evolutionary mechanism much more suits to example the Wrightian (Genetic) Drift. In genetic drift, replication that does not depend on environmental fitness, and like in the example of MDR, it is much more related to the 'founder organization'.

The Leipzig media cluster case shows that political decisions has intended or unintended consequences. Both resurrecting efforts for Leipzig's book publishing industry and establishment of MDR were local political decisions. Both cases show us that the imprinting model should be revisited to include political influencers as another branch of the environmental sources of imprinting. By this way, environment could be conceptualized in a richer and deeper manner. Moreover, our cases illustrated that sensitive periods do not automatically result in evolution of a cluster. In order for a cluster to evolve during a sensitive period is the presence of a VSR mechanism. VSR mechanism, on the other hand, is found to be affected by both environmental factors and genetic/hereditary factors. Thus, we argue that in order to explain the evolution of clusters in historical time, a synthetic approach, which combines multiple imprinting theory and generalized Darwinism is beneficial.

Table 5: Summary of Case Findings

Case	Sensitive Period	Environmental Influencer	Variation	Selection	Retention
Birth and growth of BMSI	Post WWII era	Technological shift originated mostly from aerospace industry	Recruitment of skilled engineers and designers from aerospace industry by BMSI created the variation	Know-how acquired from aerospace connections created a supremacy and increased the fitness of BSMI	Knowledge disseminators and spin-offs
Upgrading Leipzig Book Publishing Industry as hub	Technological shift originated from invention of moveable-type printing press	Protestant Reformation	Leipzig's book printers were specialized in German dialect texts and heretical works, where Frankfurt was catered dominantly to Latin texts	Possessing cultural proximity to protestant reformation helped for publishers in Leipzig to capture the opportunity and the local industry become a major location for reformist printing	Apprenticeship
Restoring efforts on book publishing in Leipzig	German re-unification	Political initiative to restore the industry	Absence of variation defuse the stamp of environmental influence	N/A	N/A
Birth of new media industry in Leipzig	German re-unification	Political move unaffiliated with an intent to build a cluster	Establishment of MDR	Selection was intensively connected to relationship with MDR	Both localized learning and spin-offs

## REFERENCES

- Abbott, A. (1995). Sequence analysis: new methods for old ideas. *Annual review of sociology*, 21(1), 93-113.
- Abernathy, W. J., & Utterback, J. M. (1978). Patterns of industrial innovation. *Technology review*, 80(7), 40-47.
- Amin, A. (1999). An institutionalist perspective on regional economic development. *International journal of urban and regional research*, 23(2), 365-378.
- Aoki, M. (2000). Institutional evolution as punctuated equilibria. Chapters. In: *Institutions, Contracts and Organizations*, Edward Elgar Publishing
- Arthur, W. B. (1983). On competing technologies and historical small events: the dynamics of choice under increasing returns.
- Aston, B., & Williams, M. (1996). *Playing to win: the success of UK motorsport engineering*. Institute for Public Policy Research.
- Audretsch, D. B., & Feldman, M. P. (1996). Innovative Clusters and the Industry Life Cycle. *Review of industrial organization*, 11(2), 253-273.
- Bach, J. (1995). Was aus den DDR Verlagen geworden ist (What happened to the G.D.R. publishers). *Frankfurter Allgemeine Zeitung* 12 December
- Bathelt, H. (2001). Regional Competence and Economic Recovery: Divergent Growth Paths in Boston's High Technology Economy. *Entrepreneurship Regional Development*, 13(4), 287-314.
- Bathelt, H. (2002). The Re-Emergence of a Media Industry Cluster in Leipzig. *European Planning Studies*, 10(5), 583-611.

- Bathelt, H., & Boggs, J. S. (2003). Toward a Reconceptualization of Regional Development Paths: Is Leipzig's Media Cluster a Continuation of or a Rupture with the Past? *Economic Geography*, 79(3), 265-293.
- Bathelt, H., & Glückler, J. (2003). Toward a relational economic geography. *Journal of Economic Geography*, 3(2), 117-144.
- Beinhocker, E. D. (2006). *The origin of wealth: Evolution, complexity, and the radical remaking of economics*. Harvard Business Press.
- Belussi, F., & Hervás-Oliver, J. L. (2016). Introduction: Unfolding cluster and industrial district evolution: into the future. In *Unfolding Cluster Evolution* (pp. 29-36). Routledge.
- Bentele, G.; Liebert, T.; and Polifke, M. (2000). *Medienstandort Leipzig III: Eine Studie zur Leipziger Medienwirtschaft 2000* (Leipzig as a location of the media industry III: A study of Leipzig's media economy 2000). Leipzig
- Berg, L.; Braun, L.; and v. Winden, W. (2001). Growth clusters in European metropolitan cities. A comparative analysis of cluster dynamics in the cities of Amsterdam, Eindhoven, Helsinki, Leipzig, Lyon, Manchester, Munich, Rotterdam and Vienna. Aldershot, Burlington, USA: Ashgate
- Boggs, J. (2001). Path dependency and agglomeration in the German book publishing industry. Paper presented at the Annual Meeting of the Association of American Geographers, New York
- Boschma, R., & Frenken, K. (2003). Evolutionary Economics and Industry Location. *Review of Regional Research*, 23(2), 183-200.
- Boschma, R., & Frenken, K. (2006). Why Is Economic Geography Not an Evolutionary Science? Towards an Evolutionary Economic Geography. *Journal of Economic Geography*, 6(3), 273-302.
- Boschma, R., & Martin, R. (2007). *Constructing an Evolutionary Economic Geography*. In: Oxford University Press.
- Boschma, R., & Martin, R. (2010). *The Aims and Scope of Evolutionary Economic Geography*. Retrieved from
- Boschma, R., & Van der Knaap, G. A. (1997). New Technology and Windows of Locational Opportunity. Indeterminacy, Creativity and Chance. In In: J. Reijnders (Ed.). *Economics and Evolution*: Edward Elgar.
- Boschma, R., & Van der Knaap, G. A. (1999). New High-Tech Industries and Windows of Locational Opportunity: The Role of Labour Markets and Knowledge Institutions During the Industrial Era. *Geografiska Annaler: Series B, Human Geography*, 81(2), 73-89.
- Börsenblatt (1993). Verlage der früheren DDR im Überblick: Übernahmen, Beteiligungen, Liquidationen (Publishers of the former G.D.R.: Mergers, acquisitions, closures). *Börsenblatt* 5 January, 53-54.
- Breschi, S., & Malerba, F. (2001). The geography of innovation and economic clustering: some introductory notes. *Industrial and corporate change*, 10(4), 817-833.
- Camagni, R. (1991) Local 'Milieu', Uncertainty and Innovation Networks: Towards a New Dynamic Theory of Economic Space. In: Camagni, R., Ed., *Innovation Networks: Spatial Perspectives*, Belhaven, London, 121-144
- Capello, Roberta. (2011). *Location, Regional Growth and Local Development Theories*. Aestim: Firenze University Press
- Carroll, G. R., & Hannan, M. T. (1989). Density delay in the evolution of organizational populations: A model and five empirical tests. *Administrative Science Quarterly*, 34(3).
- Chernow, R. (1998). *Titan: The life of John D. Rockefeller, Sr.*
- Denzer, V., and Grundmann, L. (1999). Das Graphische Viertel - ein citynahes Mischgebiet der Stadt Leipzig im Transformationsprozeß: Vom Druckgewerbe- zum Bürostandort (The transformation of Leipzig's Graphical Quarter: From printing and publishing to modern office functions). *Europa Regional* 7(3):37-50
- Dittmar, J. (2011). Information Technology and Economic Change: The Impact of The Printing Press. *The Quarterly Journal of Economics*. 126.
- Dobbin, F. (1994). *Forging industrial policy: The United States, Britain, and France in the railway age*. Cambridge university press.
- Dopfer, K., Foster, J., & Potts, J. (2004). Micro-meso-macro. *Journal of evolutionary economics*, 14(3), 263-279.
- Dosi, G. (1997). Opportunities, incentives and the collective patterns of technological change. *The economic journal*, 107(444), 1530-1547.
- Essletzbichler, J. (2012). Generalized Darwinism, Group Selection and Evolutionary Economic Geography. *Zeitschrift für Wirtschaftsgeographie*, 56(1-2), 129-146.
- Essletzbichler, J., & Rigby, D. (2005a). Competition, variety and the geography of technology evolution. *Tijdschrift voor economische en sociale geografie*, 96(1), 48-62.
- Essletzbichler, J., & Rigby, D. L. (2005b). Technological evolution as creative destruction of process heterogeneity: evidence from US plant-level data. *Economic Systems Research*, 17(1), 25-45.

- Essletzbichler, J., & Rigby, D. L. (2007). Exploring Evolutionary Economic Geographies. *Journal of Economic Geography*, 7(5), 549-571.
- Frenken, K., & Boschma, R. A. (2007). A theoretical framework for evolutionary economic geography: industrial dynamics and urban growth as a branching process. *Journal of economic geography*, 7(5), 635-649.
- Gormsen, N. (1996). Leipzig - Stadt, Handel, Messe: Die städtebauliche Entwicklung der Stadt Leipzig als Handels- und Messestadt (Leipzig's development as a trade and exhibition center). Leipzig: Institut für Länderkunde
- Gould, N. E. S. J., & Eldredge, N. (1972). Punctuated equilibria: an alternative to phyletic gradualism. *Essential readings in evolutionary biology*, 82-115.
- Griliches, Z. (1957). Hybrid corn: An exploration in the economics of technological change. *Econometrica, Journal of the Econometric Society*, 501-522.
- Gräf, P. (2001). Das Buchverlagswesen und seine Standorte (The German book publishing industry). In *Nationalatlas Bundesrepublik Deutschland: Band 9. Verkehr und Kommunikation*, ed. Institut für Länderkunde, 116-117. Heidelberg, Berlin: Spektrum.
- Hodgson, G. M. (2001). *How Economics Forgot History: The Problem of Historical Specificity in Economics*: London and New York: Routledge.
- Hodgson, G. M. (2002). Darwinism in economics: from analogy to ontology. *Journal of evolutionary economics*, 12(3), 259-281.
- Hodgson, G. M., & Knudsen, T. (2006). Why We Need a Generalized Darwinism: And Why Generalized Darwinism Is Not Enough. *Journal of Economic Behavior & Organization*.
- Hodgson, G. M., & Knudsen, T. (2010). *Darwin's Conjecture: The Search for General Principles of Social and Economic Evolution*: University of Chicago Press.
- Hull, D. L., Langman, R. E., & Glenn, S. S. (2001). A general account of selection: Biology, immunology, and behavior. *Behavioral and brain sciences*, 24(3), 511-528.
- Johnson, V. (2007). What is organizational imprinting? Cultural entrepreneurship in the founding of the Paris Opera. *American Journal of Sociology*, 113(1), 97-127.
- Jones, G., & Khanna, T. (2006). Bringing history (back) into international business. *Journal of International Business Studies*, 37(4), 453-468.
- Karrasch, I. (1989). *Verlagswesen und Buchhandel in der DDR (Book trade and publishing in the G.D.R.)*. Unpublished Diplomarbeit. Stuttgart: Studiengang Verlagswirtschaft und Verlagsherstellung, Fachhochschule für Druck.
- Klepper, S. (1996). Entry, exit, growth, and innovation over the product life cycle. *The American economic review*, 562-583.
- Krätke, S., and Scheuplein, C. (2001). *Produktionscluster in Ostdeutschland (Production clusters in East Germany)*. Hamburg: VSA
- Krugman, P. (1991). Increasing returns and economic geography. *Journal of political economy*, 99(3), 483-499.
- Lemke, R. (1992). *Verlagswesen und Buchhandel im Osten Deutschlands - Versuch einer Bilanz im Frühjahr 1992 (Book trade and publishing in Eastern Germany - An evaluation)*. Internal document. Leipzig: Verband der Verlage und Buchhandlungen in Sachsen, Sachsen-Anhalt und Thüringen
- Lounsbury, M. (2007). A tale of two cities: Competing logics and practice variation in the professionalizing of mutual funds. *Academy of management journal*, 50(2), 289-307.
- Lucas Jr, R. E. (1988). On the mechanics of economic development. *Journal of monetary economics*, 22(1), 3-42.
- Lundvall, B. A. (1992). *National systems of innovation: An analytical framework*. London: Pinter.
- Mahoney, J. (2000). Path dependence in historical sociology. *Theory and society*, 29(4), 507-548.
- Mahoney, J., & Rueschemeyer, D. (Eds.). (2003). *Comparative historical analysis in the social sciences*. Cambridge University Press.
- Maillat, D., Quévit, M., & Senn, L. (1993). Réseaux d'innovation et milieux innovateurs. Réseaux d'innovation et milieux innovateurs: un pari pour le développement régional. Paris: GREMI/EDES.
- Marquis, C. (2003). The Pressure of the Past: Network Imprinting in Interorganizational Communities. *Administrative Science Quarterly*, 48(4), 655-689.
- Marquis, C., & Huang, Z. (2010). Acquisitions as exaptation: The legacy of founding institutions in the US commercial banking industry. *Academy of Management Journal*, 53(6), 1441-1473.
- Marquis, C., & Tilcsik, A. (2013). Imprinting: Toward a Multilevel Theory. *Academy of Management Annals*, 7(1), 195-245.

- Martin, R., & Sunley, P. (2006). Path Dependence and Regional Economic Evolution. *Journal of Economic Geography*, 6(4), 395-437.
- Martin, R., & Sunley, P. (2001). Rethinking the "Economic" in Economic Geography: Broadening Our Vision or Losing Our Focus? *Antipode*, 33(2), 148-161.
- Martin, R., & Sunley, P. (2006). Path dependence and regional economic evolution. *Journal of economic geography*, 6(4), 395-437.
- Martin, R., Sunley, P. (2015) On the notion of regional economic resilience: conceptualization and explanation, *Journal of Economic Geography*, 15(1): 1-42
- Martin, R., & Sunley, P. (2017). The Post-Keynesian State and the Space Economy. *Economy*, 459-473
- McEvily, B., Jaffee, J., & Tortoriello, M. (2012). Not all bridging ties are equal: Network imprinting and firm growth in the Nashville legal industry, 1933-1978. *Organization science*, 23(2), 547-563.
- Menz, G. 1942. *Der Deutsche Buchhandel (The German book trade)*. 2nd ed. Gotha: Perthes.
- Menzel, M.-P., & Fornahl, D. (2009). Cluster Life Cycles—Dimensions and Rationales of Cluster Evolution. *Industrial Corporate Change*, 19(1), 205-238.
- Nelson, R. (1995). Recent Evolutionary Theorizing About Economic Change. *Journal of economic literature*, 33(1), 48-90.
- Nelson, R., & Winter, S. (1974). Neoclassical vs. evolutionary theories of economic growth: critique and prospectus. *The Economic Journal*, 84(336), 886-905.
- Nelson, R., & Winter, S. (1982). *An Evolutionary Theory of Economic Growth*. Belknap-Harvard, Cambridge, MA.
- Neuman, W. L., & Robson, K. (2014). *Basics of social research*. Toronto: Pearson Canada.
- North, D. C. (1990). *Institutions, Institutional Change and Economic Performance*. In. Cambridge: Cambridge university press.
- Perroux, François (1955): Note sur la notion de poles croissance. *Economic Appliquee*, 1 & 2:307-320 (Translated by Mette Monsted, (1974)
- Pettegree, A. (2017). The Reformation as a Media Event. *Archiv für Reformationsgeschichte-Archive for Reformation History*, 108(1), 126-133.
- Pinch, S., & Henry, N. (1999). Paul Krugman's Geographical Economics, Industrial Clustering and the British Motor Sport Industry. *Regional Studies*, 33(9), 815-827.
- Porter, M. E. (1990). *The Competitive Advantage of Nations*. London: Macmillan.
- Porter, M. E. (1998). *Clusters and Competition: New Agenda for Companies, Governments and Institutions*. In *On Competition*. Boston, MA: Harvard Business School.
- Pouder, R., & St. John, C. H. (1996). Hot spots and blind spots: Geographical clusters of firms and innovation. *Academy of management review*, 21(4), 1192-1225.
- Price, G. R. (1995). The Nature of Selection. *Journal of Theoretical Biology*, 175(3), 389-396.
- Raynard, M., Lounsbury, M., & Greenwood, R. (2013). Legacies of logics: Sources of community variation in CSR implementation in China. In *Institutional Logics in Action, Part A* (pp. 243-276). Emerald Group Publishing Limited.
- Rigby, D. L., & Essletzbichler, J. (1997). Evolution, process variety, and regional trajectories of technological change in US manufacturing. *Economic Geography*, 73(3), 269-284.
- Rigby, D. L., & Essletzbichler, J. (2006). Technological Variety, Technological Change and a Geography of Production Techniques. *Journal of Economic Geography*. 6. 45-70.
- Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of political economy*, 94(5), 1002-1037.
- Rueschemeyer, D., & Stephens, J. D. (1997). Comparing historical sequences-A powerful tool for causal analysis. A reply to John Goldthorpe's current issues in comparative macro-sociology. *Comparative Social Research*, 16, 55-72.
- Sagurna, M. (2000). Der Medienstandort Leipzig im Freistaat Sachsen (Leipzig's role as a media location in Saxony). In *Medienstadt Leipzig: Vom Anspruch zur Wirklichkeit*, ed. H. Grunau, W. Kleinwächter und H.-J. Stiehler, Leipzig: Monade, 22-30.
- Schönstedt, E. (1991). *Der Buchverlag (The book publishing firm)*. Stuttgart: Metzler-Poeschel
- Schubert, D. (1999). Media city—Leipzig: Bestandsaufnahme und Ausblick (Media city Leipzig: present state and future perspectives), in O. Altendorfer and K. Mayer (Eds) *Sächsisches Medienjahrbuch 1998/1999*, pp. 20– 23. Leipzig: Verlag für Medien & Kommunikation.



- Schubert, D. (2000). Die Stadt Leipzig und die Medien als Wirtschaftsfaktor (The city of Leipzig and the economic importance of media). In Medienstadt Leipzig: Vom Anspruch zur Wirklichkeit, ed. H. Grunau, W. Kleinwächter und H.-J. Stiehler, 33-36. Leipzig: Monade.
- Schulz, G. (1989). Buchhandels-Ploetz (Ploetz book trade directory). 4th ed. Freiburg: Ploetz
- Sober, E., & Wilson, D. S. (1998). *Unto Others: The Evolution and Psychology of Unselfish Behavior* Cambridge MA: Harvard University Press Cambridge.
- Stinchcombe, A. L. (1965). Social Structure and Organizations. In *Handbook of Organizations* (Vol. 44, pp. 142-193).
- Storper, M. (1997). *The regional world: territorial development in a global economy*. Guilford press.
- Swaminathan, A. (1996). Environmental Conditions at Founding and Organizational Mortality: A Trial-by-Fire Model. *Academy of Management journal*, 39(5), 1350-1377.
- Ter Wal, A. L., & Boschma, R. (2011). Co-evolution of firms, industries and networks in space. *Regional studies*, 45(7), 919-933.
- Volpers, H. (1991). Der gesamtdeutsche Buchmarkt 1990/91: Eine Bestandsaufnahme – ein Jahr nach der Vereinigung (The German book market in 1990/91: An evaluation one year after Reunification). *Media Perspektiven* 11:735-743
- Weber, A. (1909). *Über Den Standort Der Industrien*. Tübingen: Mohr.
- Weidhaas, P. (2009). The Frankfurt book fair: 60 years and still a shining example. *Publishing research quarterly*, 25(1), 30-35.
- Wittmann, R. (1999). *Geschichte des deutschen Buchhandels* (History of the German book trade). 2nd ed. Munich: Beck.
- Yin, R. K. (2003). *Case study research: Design and methods* (Vol. 5).



## EXPLORING INFLUENCING FACTORS OF UNIVERSITY ENROLLMENT USING NEURAL NETWORK

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### ABSTRACT

**Purpose-** This study intends to investigate the factors that affect the enrollment in Taiwan's colleges and universities. The subjects were selected by random sampling methods from senior high school graduates who were about to enter colleges.

**Methodology-** By implementing the Alyuda NeuroIntelligence software, this study applied neural network simulation and prediction analysis on the data of 100 questionnaires.

**Findings-** The results showed that the influencing factors of school enrollment and their degree of relevance and importance are: (1) curriculum, (2) chance of overseas study, (3) faculty, (4) scholarship, (5) tuition, (6) location, (7) internship, (8) career, (9) campus and (10) reputation.

**Conclusion-** It is hoped that the research results discovered in this study can help relevant schools to understand students' total evaluation of schools and willingness to study, and serve as an important reference for schools to strengthen enrollment strategy and improve the quality of school operation in the future.

**Keywords:** University enrollment, influencing factors, artificial intelligence, neural network, forecast

**JEL Codes:** I21, I23

## 1. INTRODUCTION

It is widely known that the higher education plays a critical role in the development of a country and achievement of personal career, thus, the quality and performance of the higher education is fundamental to the competitiveness of a nation.

In recent years, Taiwan's higher education market is under significant impact by the influence of fewer birth rate and the establishment of too many colleges and universities over the past 20 years. Some colleges and universities have decided to reduce enrolment or even stop student recruitment because of insufficient students. The Ministry of Education of Taiwan has initiated a blacklist of schools with poor performance, therefore, enrollment has become the most important task for colleges and universities, and the success of high enrollment rate has become the key to the survival and sustainable development of colleges and universities.

In order to solve the enrollment problems faced by Taiwan's colleges and universities, it has become a necessary and urgent task to fully understand and well manage the influencing factors of successful enrollment. This study aims to investigate and analyze the influencing factors of enrollment in Taiwan's colleges and universities. Instead of using the traditional methods of statistical analysis, this study utilized neural network to analyze data collected from a questionnaire survey and developed a model for successful enrolment. By training and testing the neural network model, the generated results of the model are analyzed, and the

correlation and priority of the influencing factors are compared. Consequently, the students' overall evaluation of the universities and willingness to study can be revealed. The outcomes of this study can be an important reference for universities to strengthen enrollment strategy and to improve the quality and performance of future operation.

This paper is composed of the following sections, the introduction, literature review, research methodology, data analysis and conclusion.

## **2. LITERATURE REVIEW**

Artificial intelligence (AI) refers to the intelligence shown by machines made by human beings, which means the technology of realizing human intelligence through computer programs. Alan Turing (2009), a British mathematician, first proposed the concept of machine intelligence in 1950, while the term "artificial intelligence" was used by researchers at a meeting of Dartmouth College in 1956, when it was officially named by John McCarthy, the creator father of LISP, who was responsible for organizing the meeting. Because of this, Dartmouth Conference became the classic origin of AI (McCarthy, 1989). Since then, many fields such as mathematics, logic, cognitive science and life science actively carried out theoretical researches on AI. In the late 1990s, advances in computer hardware and software technology also promoted the research of AI to make major breakthroughs, and then to achieve application of AI in various fields around human beings (Ghahramani, 2015).

With regard to artificial intelligence, computer scientists expect to directly imitate the operation of biological neurons, so they design mathematical models to simulate the structure and functions of animal neural networks. Artificial intelligence neural networks are functional calculus imitating the operation of neurons, which can receive the stimulation of external information input and convert the input into output response according to the weight of different stimulation effects, or can be used to change the intrinsic function to adapt to mathematical model under different situations (Hagan et al., 1996). Simply speaking, artificial intelligence neural network simulates the operation of biological neurons with mathematical functions, simulates the nerve conduction and response of organisms through mathematical models, through which it receives stimulus from external information input and converts such input into output response according to different stimulus influence weights.

In 1951, a scientist Marvin Minsky built Snarc, the world's first neuron simulator, which can cross the maze with the help of 40 agents and a reward system (Kelemen, 2007). In 1957, Frank Rosenblatt of Cornell Aeronautical Engineering Laboratory designed Perceptron of neural networks (Rosenblatt, 1958). Scholars of artificial intelligence neural network were very excited about it, believing that this breakthrough would eventually lead the artificial intelligence toward a new stage of development. In 1970s, however, due to the lack of large-scale data and unimproved computational complexity, the researches in the field of artificial intelligence was unable to expand the small-scale problem into a large-scale problem, which led to stagnation of the research due to the inability to obtain more investment in budget for scientific research in the field of calculators. By 1980s, scientists first designed new calculating methods to simulate human neurons through breakthroughs in thinking, leading to the renaissance period of the development of neural networks (O'Leary, 1997). In 1982, physicist John Hopfield first published Hopfield neural networks, which opened up the thinking that neural networks can be designed recursively (Hopfield, 1982). In 1986, Professor David Rumelhart of the University of California, San Diego, proposed Back Propagation (Rumelhart, Hinton and Williams, 1988), which measures the change of "stimulus" through each input of data to calculate the weight that needs to be corrected and feed back to the original function, further refreshing the significance of machine learning. Scientists have further extended neurons into neural networks. Artificial intelligence neural networks formed by multi-layered neurons can retain more "stimulated" "memory" in function expression (Rumelhart et al., 1995).

At present, the multi-layer artificial intelligence neural network model mainly includes input layer, hidden layer and output layer. In addition, according to the direction of data input flow, it can be divided into one-way flow or back propagation method which can update the weights of the previous layer (Hecht-Nielsen, 1992). Because the neural network model relies heavily on the capacity of computing scale, in order to increase the flexibility of the highly abstract data layer, computer scientists compounded it into a model with greater complexity and multiple layers supported with multiple nonlinear transformations, which is named as Deep Learning (LeCun, Bengio and Hinton, 2015). Deep learning is a branch of machine learning and also the mainstream direction of AI development. Its concept is mainly compounding artificial intelligence artificial neural network with complex multi-layer structure, and making multiple nonlinear transformation of its functions to add highly abstract data and memory data influence ability (Bengio, 2009).

The development direction of AI is to design and analyze some algorithms that allow computers to "learn" automatically, so that computers can establish rules from the process of automatic analysis of data, and use these rules to predict unknown data that

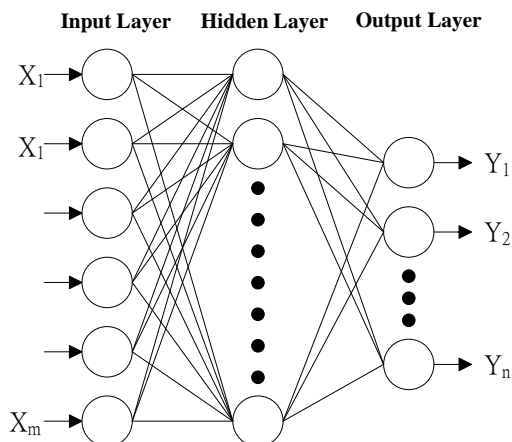
have not been analyzed. In the process, statistical techniques are often used and converted into computer programs, and then the demarcation conditions of data are calculated to make prediction. With regard to the way of development in the field of artificial intelligence, whether it is supervised learning or unsupervised learning, when the data is collected in large scale, rapidly transmitted through the Internet and then computed by cloud architecture, it is no longer an unreachable goal to solve basic problems of human beings by AI technology (Ramos, Augusto and Shapiro, 2008). At present, artificial intelligence neural network is also one of the most widely used technologies in artificial intelligence commerce. It has been proved that it can be successfully applied in search engine, image recognition, biometric recognition, speech and handwriting recognition and other fields. In the future, more practical applications will be realized in various fields (Russell and Norvig, 2016).

### 3. RESEARCH METHODOLOGY

This study investigated the factors that affect the enrollment in Taiwan's colleges and universities. The subjects were selected by random sampling methods from senior high school graduates who were about to enter colleges. This study collected relevant literature on influencing factors of enrollment in Taiwan's colleges and universities, and summarized students' opinions and reactions to the needs during selection of school departments and the willingness to study. This study took 10 factors of enrollment, namely location, tuition, reputation, career, scholarship, internship, overseas study, curriculum, faculty and campus, as independent variables, and students' total evaluation of the school as a dependent variable. A random sampling survey was conducted among 100 junior high school graduates who participated in an enrollment initiative of a university in Taiwan. Likert Scale 5-point attitude scale was used to divide the influencing factors of enrollment and the events of the total evaluation of the school into five levels: very high, high, medium, low and very low in order to understand the attitudes or opinions of the subjects on the influencing factors of a certain enrollment.

In this study, analysis based on the back-propagation neural network model, the basic principle of which is to minimize the error function by using the concept of Gradient Steepest Descent Method. The structure of back-propagation neural network includes input layer, hidden layer and output layer, as shown in Figure 1.

**Figure 1: Structure of Back-Propagation Neural Network**



**Input layer:** To represent input variables of neural network. The number of its processing units depends on the problem. Linear transformation functions are used, as shown in Equation (1):

$$f(x) = x \quad (1)$$

**Hidden Layer:** To represent the interaction between input processing units. There is no standard method to determine the number of processing units. Usually, the optimal number of processing units is determined by experimental method. Non-linear transformation functions are used. The network can have more than one hidden layer or no hidden layer.

**Output Layer:** To represent the output variables of neural network. The number of processing units depends on the problem. Nonlinear transformation functions are used.

The relationship between input value and output value of processing unit can generally be expressed by the function of the weighted product sum of the input value, as shown in Equations (2) and (3):

$$Y_j = f(\text{net}_j) \quad (2)$$

$$\text{net}_j = \sum W_{ij}X_i - \theta_j \quad (3)$$

where,

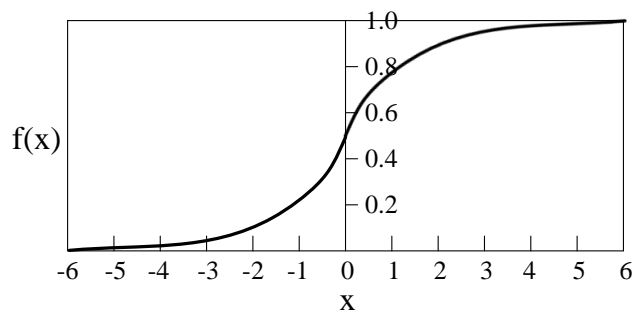
$Y_j$  = Output variables, which imitate the output signals of the biological neuron model

$f$  = Conversion function, which imitates the non-linear processing program of the biological neuron model. It is a mathematical formula used to convert the weighted product sum of input values of processing units into the output of processing units. Conversion function is usually used, as shown in Equation (4):

$$f(x) = \frac{1}{1+e^{-x}} \quad (4)$$

When the independent variable approaches positive or negative infinity, the value of the function approaches (0, 1), as shown in Figure 2.

**Figure 2: Conversion Function**



$W_{ij}$  = Link weighted value, which imitates the synaptic strength of the biological neuron model.

$X_i$  = Input variables, which imitate the input signals of the biological neuron model.

$\theta_j$  = Partial Weight, which imitates the threshold value of the biological neuron model

According to the back-propagation neural network model, this study uses Alyuda NeuroIntelligence software to process the questionnaire data, develop prediction model and finally obtain solution to the problem. Through training and testing of the neural network model, the output results are analyzed and summarized to determine the influencing factors of school enrollment and level of correlation, so as to understand the students' total evaluation of the school and their willingness to study.

The research processes are as follows:

**Step 1:** Establish research motivation and purpose, and define research topics.

**Step 2:** Collect relevant literatures on influencing factors of enrollment in colleges and universities.

**Step 3:** Design questionnaire after summarizing and collating relevant literatures and students' opinions and reactions to the needs in choosing the school and their willingness to study.

**Step 4:** Conduct questionnaire survey among 100 senior school graduates by random sampling. Collect the data, compile it into excel worksheet and then import the data into neural network software.

**Step 5:** Implement the Alyuda NeuroIntelligence software and apply neural network simulation and prediction analysis on the data of 100 questionnaires. Among them, 70 data are used for training and testing for modeling, and 30 data are used for prediction and analysis after obtaining the model.

**Step 6:** Analyze and compare the influencing factors. With the initial predicted value as the benchmark, this study revises the input value of 10 influencing factors in turn. A total of 10 modifications are executed, with one influencing factor modified each time. Then, record the initial predicted value and the modified predicted value.

**Step 7:** Calculate the difference between the initial and modified predicted value by using Root Mean Square Error (RMSE) and analyze the correlation degree and importance ranking of the influencing factors for the overall evaluation of the school.

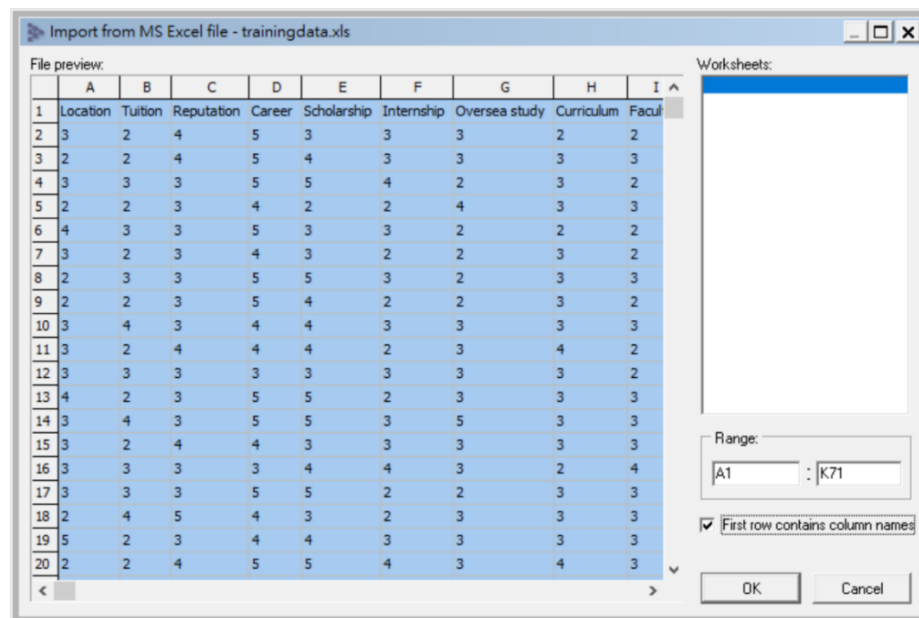
**Step 8:** Conclude the study.

#### 4. DATA ANALYSIS

With the above-mentioned research methods, this study investigated the factors influencing the enrollment of Taiwan's colleges and universities. The results of the relevant data analysis are as follows:

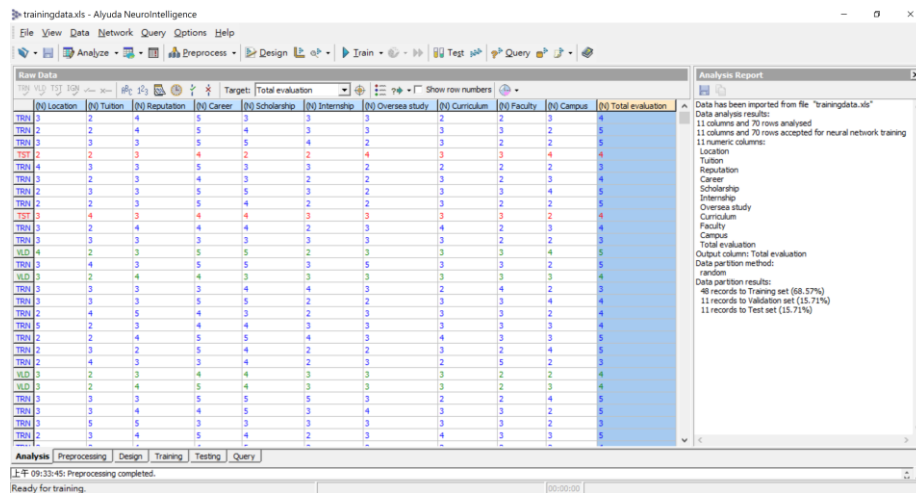
The questionnaire survey were collected and compiled into excel worksheet, and input into Alyuda Neuro Intelligence software, as shown in Figure 3.

**Figure 3: Data Input**



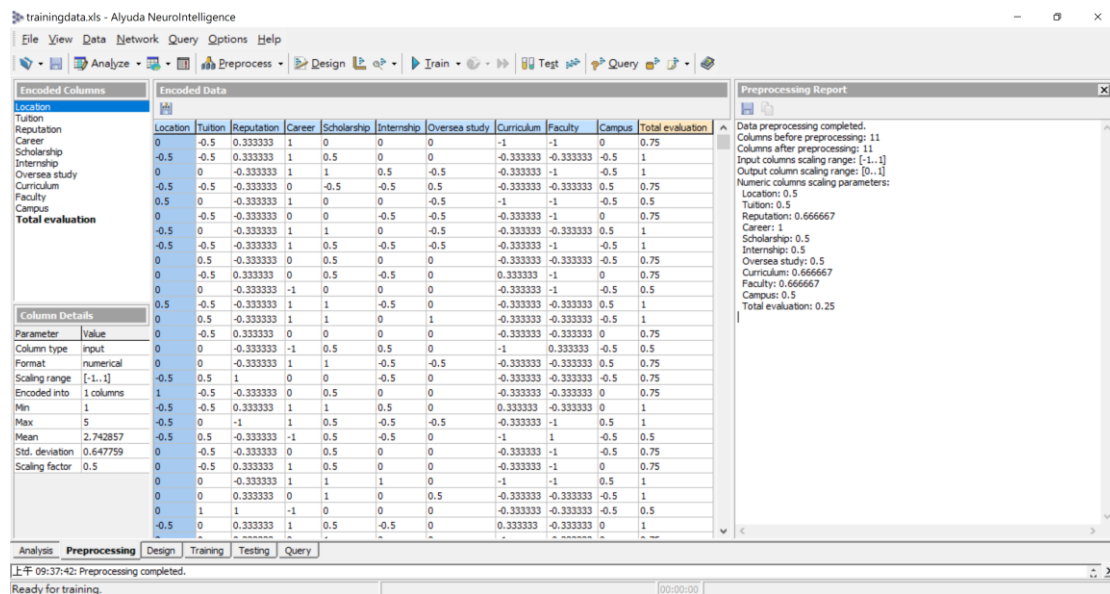
The processing flow of Alyuda NeuroIntelligence software are analyzing, preprocessing, design, training, testing and prediction. After data importation, Alyuda NeuroIntelligence analyzed the data to define parameters and test whether there were abnormalities in the data. This study took 10 factors of enrollment, namely location, tuition, reputation, career, scholarship, internship, overseas study, curriculum, faculty and campus, as independent variables, and students' total evaluation of the school as a dependent variable, as shown in Figure 4.

Figure 4: Data Analysis



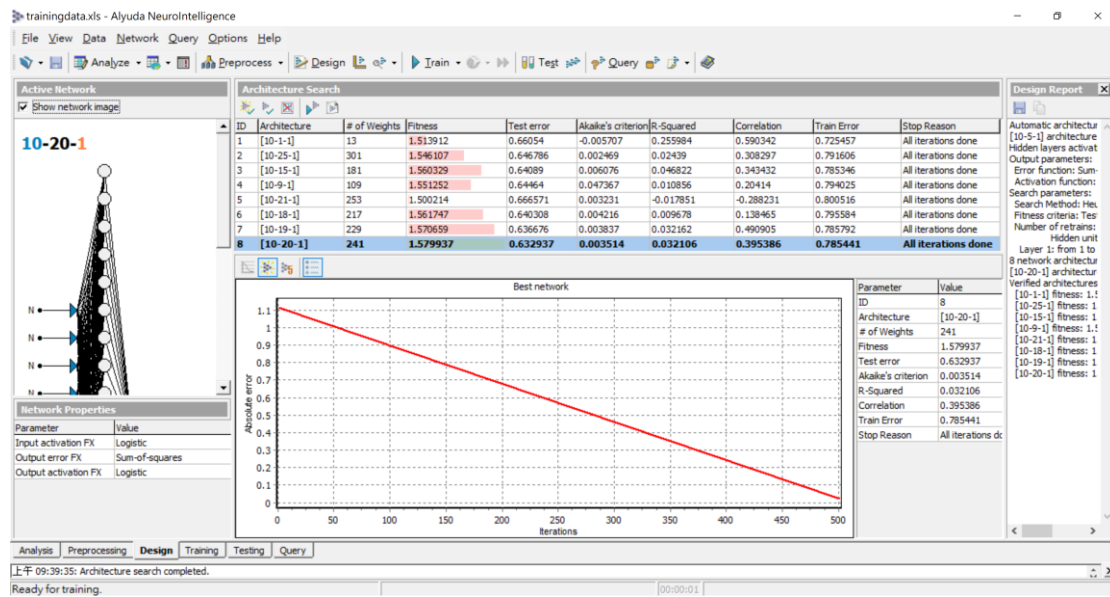
After data analysis is completed, data preprocessing is carried out. The main purpose of data preprocessing is to convert the original data of each column into the data that can be analyzed by the software. Alyuda NeuroIntelligence software will convert the values of independent variables into [1, -1], and the values of dependent variables into [0, 1], as shown in Figure 5.

Figure 5: Data Preprocessing



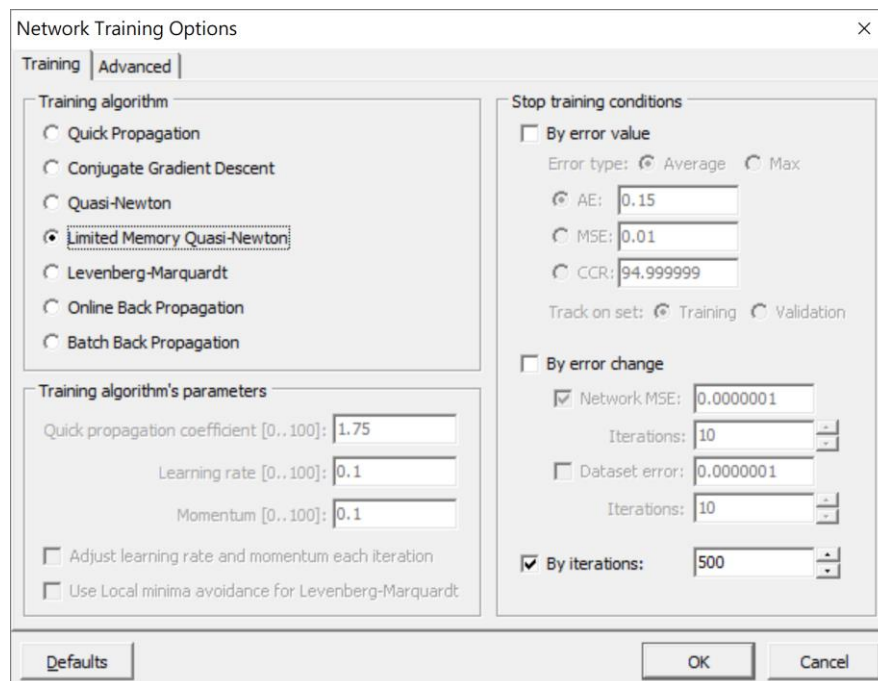
After data preprocessing is completed, Alyuda Neuro Intelligence software is used to design the neural network architecture, and set the architecture of input layer, the hidden layer and the output layer of the network, as well as the number of neurons in hidden layer, as shown in Figure 6.

Figure 6: Neural Network Design



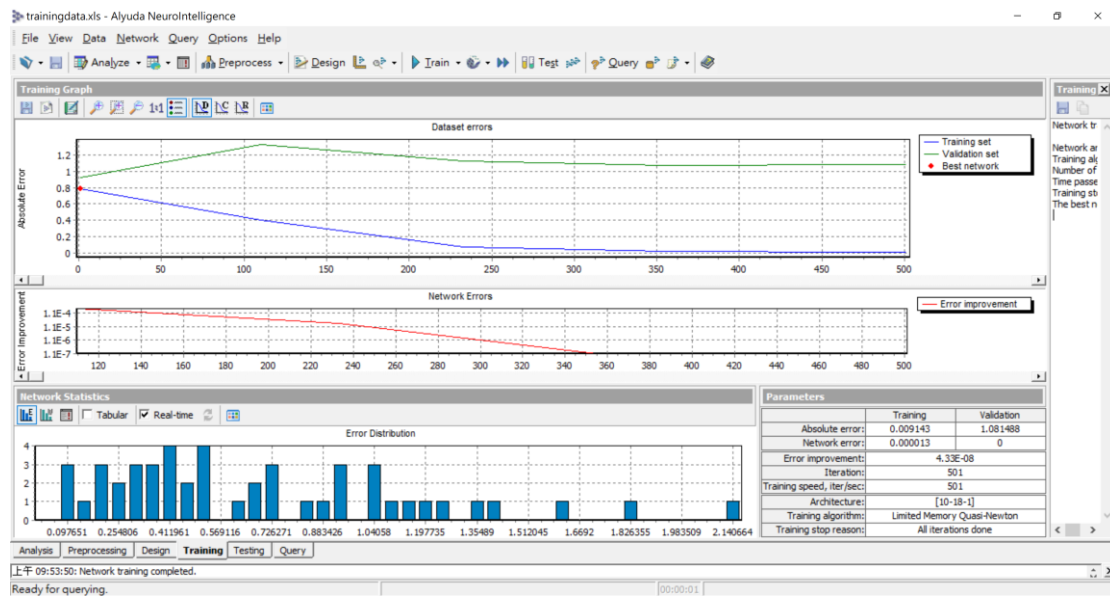
After completing the design of neural network architecture, some relevant parameters must be set before data training. Limited Memory Quasi-Newton is selected as the training algorithm, and 500 training cycles are set as well, as shown in Figure 7.

Figure 7: Neural Network Training Algorithm

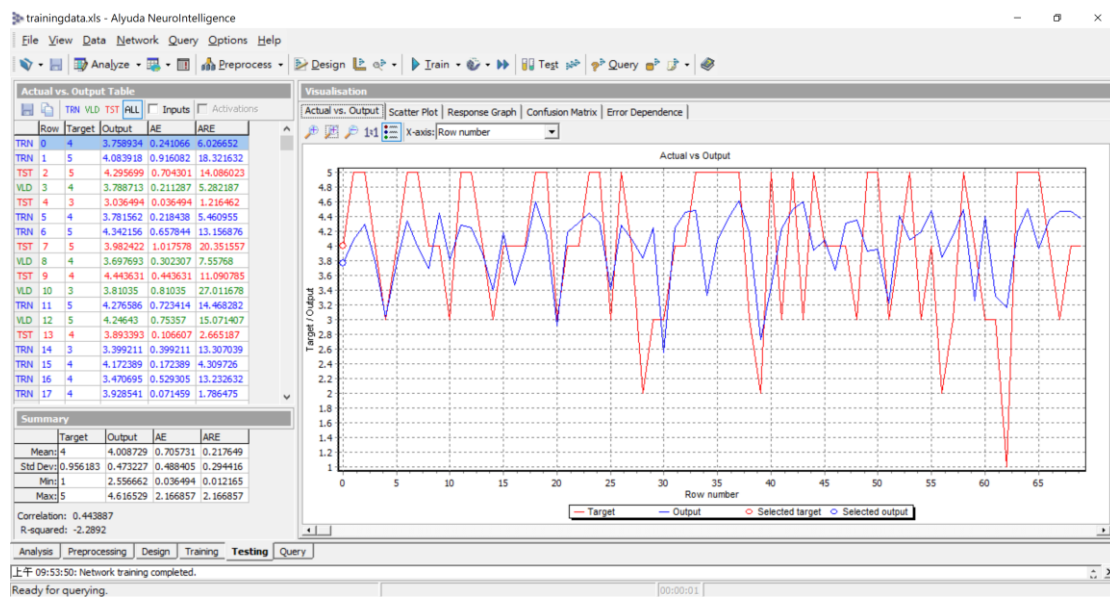


After completing the setting, data training is carried out by the software. When training is completed, the relevant messages and graphics showed that the neural network model has converged, as shown Figure 8.



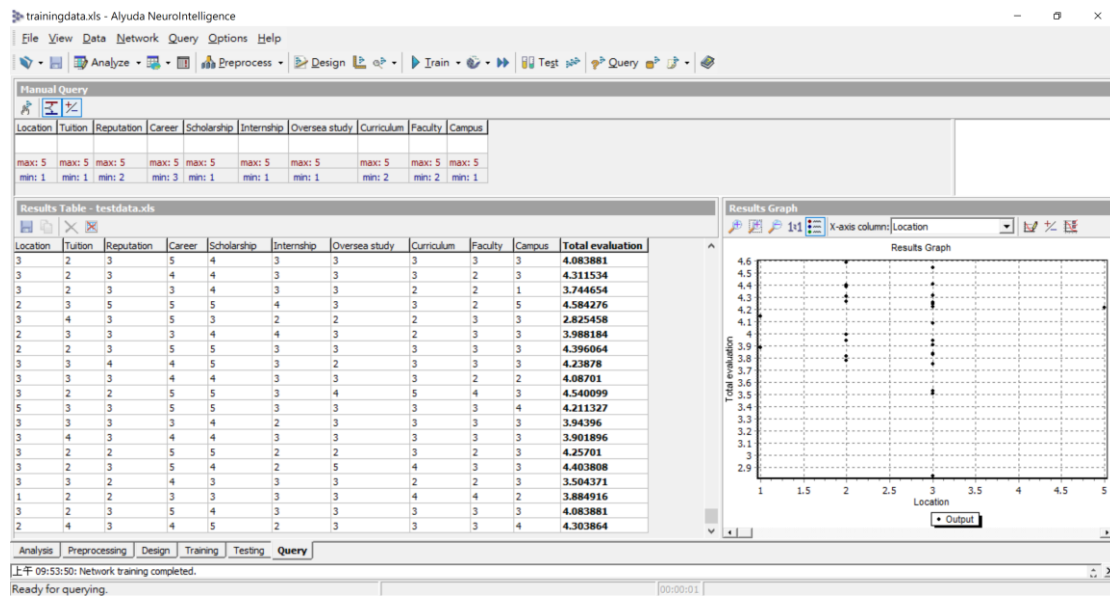
**Figure 8: Data Training**

After obtaining the model through data training, data testing can be carried out to examine the prediction accuracy of the model. After testing the model in this study, the relevant messages and graphics indicated that the neural network model presented good prediction accuracy, and therefore, the initial model of the neural network was successfully completed, as shown in Figure 9.

**Figure 9: Data Testing**

The model developed by the software was then used to predict the remaining 30 data, and results are as shown in Figure 10.

Figure 10: Data Prediction



The predicted data are then exported and the predicted results are recorded as the initial predicted values, as shown in Figure 11.

Figure 11: Initial Predicted Values

1	NEURAL NETWORK QUERY RESULTS										
2	Generator: Alyuda NeuroIntelligence 2.1 (522)										
3	Dataset used for training: C:\Users\CTBCUser\Desktop\testdata.xls										
4	Date: 2019/2/22										
5	Time: 09:57:13										
6											
7	Location	Tuition	Reputation	Career	Scholarship	Internship	Oversea study	Curriculum	Faculty	Campus	Total evaluation
8	2	3	2	5	3	3	4	3	3	3	3.81549
9	3	3	2	4	5	3	3	3	4	2	3.830248
10	3	3	3	4	4	2	3	2	3	3	3.523058
11	1	5	2	3	4	3	3	3	3	4	4.138592
12	2	3	3	4	5	2	3	3	5	3	3.814086
13	2	3	3	5	5	2	2	3	3	2	3.937781
14	3	3	3	5	3	3	5	4	3	3	4.216716
15	2	4	2	4	5	3	2	2	3	3	3.774914
16	2	3	3	4	5	3	2	3	3	3	4.263947
17	3	2	2	3	3	5	2	2	2	3	3.829579
18	2	3	2	5	5	3	3	3	3	4	4.382721
19	3	2	3	5	4	3	3	3	3	3	4.083881
20	3	2	3	4	4	3	3	3	2	3	4.311534
21	3	2	3	3	4	3	3	2	2	1	3.744654
22	2	3	5	5	5	4	3	3	2	5	4.584276
23	3	4	3	5	3	2	2	2	3	3	2.825458
24	2	3	3	3	4	4	3	2	3	3	3.988184
25	2	2	3	5	5	3	3	3	3	3	4.396064
26	3	3	4	4	5	3	2	3	3	3	4.23878
27	3	3	3	4	4	3	3	3	2	2	4.08701
28	3	2	2	5	5	3	4	5	4	3	4.540099
29	5	3	3	5	5	3	3	3	3	4	4.211327
30	3	3	3	3	4	2	3	3	3	3	3.94396
31	3	4	3	4	4	3	3	3	3	3	3.901896
32	3	2	2	5	5	2	2	3	2	3	4.25701
33	3	2	3	5	4	2	5	4	3	3	4.403808

To determine the relative importance of influencing factors, the initial predicted values are taken as the benchmark, and the input values of the 10 factors are modified in turn, with one factor modified at a time, and a total of 10 modifications are conducted sequentially. While the input values are modified, all the original values of the influencing factors are changed to 1, as shown in Figure 12. Then the modified input values are sequentially incorporated into the neural network that had been modeled to obtain the modified predicted values of 10 influencing factors.

Root mean square error is used to calculate the difference between the initial predicted value and the modified predicted value and analyze the level of correlation and priority of each influencing factor to the total evaluation of the school, as shown in Figure 13. The larger the root mean square error of the influencing factor is, the higher the modified initial predicted value is, that is, the higher the degree of correlation priority of the influencing factor to the total evaluation of the school.

The results showed that the influencing factors of enrollment and their degree of relevance and importance are: (1)curriculum, (2)chance of oversea study, (3)faculty, (4)scholarship, (5)tuition, (6)location, (7)internship, (8)career, (9)campus and (10)reputation.

**Figure 12: Modified Input Values**

	Location	Tuition	Reputation	Career	Scholarship	Internship	Overseas study	Curriculum	Faculty	Campus
1	1	3	2	5	3	3	4	3	3	3
2	1	3	2	4	5	3	3	3	4	2
3	1	3	3	4	4	2	3	2	3	3
4	1	5	2	3	4	3	3	3	3	4
5	1	3	3	4	5	2	3	3	5	3
6	1	3	3	5	5	2	2	3	3	2
7	1	3	3	5	3	3	5	4	3	3
8	1	4	2	4	5	3	2	2	3	3
9	1	3	3	4	5	3	2	3	3	3
10	1	2	2	3	3	5	2	2	2	3
11	1	3	2	5	5	3	3	3	3	4
12	1	2	3	5	4	3	3	3	3	3
13	1	2	3	4	4	3	3	3	2	3
14	1	2	3	3	4	3	3	2	2	1
15	1	3	5	5	5	4	3	3	2	5
16	1	4	3	5	3	2	2	2	3	3
17	1	3	3	3	4	4	3	2	3	3
18	1	2	3	5	5	3	3	3	3	3
19	1	3	4	4	5	3	2	3	3	3
20	1	3	3	4	4	3	3	3	2	2
21	1	2	2	5	5	3	4	5	4	3
22	1	3	3	5	5	3	3	3	3	4
23	1	3	3	3	4	2	3	3	3	3
24	1	4	3	4	4	3	3	3	3	3
25	1	2	2	5	5	2	2	3	2	3
26	1	2	3	5	4	2	5	4	3	3
27	1	3	2	4	3	3	3	2	2	3
28	1	2	2	3	3	3	3	4	4	2
29	1	2	3	5	4	3	3	3	3	3
30	1	4	3	4	5	2	3	3	3	4
31	1	4	3	4	5	2	3	3	3	4

**Figure 13: Correlation and Priority of Factor to Evaluation of University**

	All	Location	Tuition	Reputation	Career	Scholarship	Internship	Overseas study	Curriculum	Faculty	Campus
1											
2	3.81549	4.029998	4.031263	4.050442	4.070188	4.020055	4.032254	3.986213	3.99678	3.98845	4.046894
3	3.830248	4.061902	4.058319	4.076505	4.080096	4.042704	4.058145	4.02676	4.023026	3.997748	4.061904
4	3.523058	3.995443	3.991417	4.037216	4.019991	3.977914	3.987488	3.958264	3.969048	3.94627	4.007344
5	4.138592	4.02205	4.041935	4.047523	4.042865	4.020087	4.029965	3.999879	3.992291	3.985718	4.056218
6	3.814086	4.045233	4.047064	4.090481	4.071241	4.031436	4.043125	4.015648	4.012247	3.968186	4.062134
7	3.937781	3.997632	3.998926	4.045344	4.038826	3.982835	3.995249	3.978519	3.963434	3.954537	4.003346
8	4.216716	4.027927	4.022214	4.068508	4.063012	4.010466	4.023409	3.963679	3.974482	3.97936	4.038015
9	3.774914	4.002862	4.010925	4.023916	4.028664	3.992655	4.005363	3.985614	3.982749	3.961065	4.020842
10	4.263947	3.994491	3.996745	4.042496	4.023978	3.980173	3.996798	3.975854	3.960248	3.952018	4.012324
11	3.829579	3.997269	3.988563	4.011957	4.009068	3.980167	4.001562	3.971931	3.970706	3.966561	4.008065
12	4.382721	4.008611	4.010244	4.029163	4.048567	3.995994	4.010453	3.977497	3.974831	3.966305	4.038554
13	4.083881	3.995743	3.985806	4.037309	4.033828	3.975794	3.990881	3.956375	3.955038	3.945581	4.006557
14	4.311534	3.991657	3.98245	4.033635	4.016893	3.972128	3.987137	3.953084	3.950739	3.960207	4.002856
15	3.744654	4.014419	4.00716	4.055643	4.024917	3.998013	4.010999	3.978735	3.988739	3.984742	4.002567
16	4.584276	3.888075	3.889738	3.995797	3.938864	3.87465	3.89519	3.855443	3.85358	3.862891	3.932142
17	2.825458	3.965018	3.962015	4.006911	4.005174	3.947864	3.95516	3.93809	3.937306	3.914509	3.975492
18	3.988184	3.999223	4.003135	4.046567	4.01632	3.98936	4.006702	3.969753	3.979186	3.957099	4.017077
19	4.396064	3.997616	3.994885	4.045316	4.039066	3.982491	3.999401	3.965763	3.963683	3.954808	4.01537
20	4.23878	3.96656	3.961225	4.036587	3.992309	3.944732	3.962184	3.940322	3.925707	3.916624	3.977758
21	4.08701	3.999142	3.994775	4.041343	4.023046	3.980454	3.995159	3.961551	3.958621	3.968291	3.998628
22	4.540099	4.079018	4.069219	4.091691	4.108957	4.058128	4.073462	4.030122	4.014593	4.014205	4.088562
23	4.211327	3.98089	3.960898	4.009166	4.006376	3.946193	3.962388	3.927335	3.926461	3.916499	3.990862
24	3.94396	4.021887	4.018103	4.063105	4.033489	4.004509	4.01408	3.986125	3.982325	3.973892	4.033162
25	3.901896	4.000302	4.000212	4.042506	4.024759	3.982152	3.996538	3.962967	3.959934	3.951313	4.012115
26	4.25701	3.998988	3.989197	4.012801	4.036278	3.978412	3.989543	3.972646	3.957898	3.967099	4.010361
27	4.403808	4.038205	4.028415	4.078058	4.069399	4.019234	4.028986	3.97413	3.984657	3.989893	4.047944
28	3.504371	3.999702	3.995275	4.014656	4.023529	3.984204	3.995681	3.962381	3.97325	3.968944	4.011249
29	3.884916	4.088372	4.092078	4.113447	4.109704	4.083334	4.096055	4.065491	4.049416	4.038152	4.098953
30	4.083881	3.995743	3.985806	4.037309	4.033828	3.975794	3.990881	3.956375	3.955038	3.945581	4.006557
31	4.303864	3.993504	4.000822	4.041093	4.023019	3.981504	3.992166	3.963462	3.959036	3.951257	4.023521
32	<b>RMSE</b>	<b>0.35595</b>	<b>0.35682</b>	<b>0.35028</b>	<b>0.35268</b>	<b>0.35808</b>	<b>0.35534</b>	<b>0.36239</b>	<b>0.36507</b>	<b>0.3601</b>	<b>0.35143</b>
33	<b>RANK</b>	6	5	10	8	4	7	2	1	3	9
34											

## 5. CONCLUSION

This study investigated the factors that affect the enrollment in Taiwan's colleges and universities. The subjects were selected by random sampling methods from senior high school graduates who were about to enter colleges. By implementing the Alyuda NeuroIntelligence software, this study applied neural network simulation and prediction analysis on the data of 100 questionnaires. Among them, 70 data were used for training and testing for prediction modeling, and 30 data were used for prediction and analysis after modeling. Through training and testing of the neural network model, the output results were analyzed and summarized to find out the influencing factors of school enrollment and their correlation degree, so as to understand the students' total evaluation of the school and willingness to study.

The results showed that the influencing factors of school enrollment and their degree of relevance and importance are (1)curriculum, (2)chance of overseas study, (3)faculty, (4)scholarship, (5)tuition, (6)location, (7)internship, (8)career, (9)campus and (10)reputation. Curriculum, faculty and chance of overseas study have greater correlation to and more significant influence on school enrollment. In other words, students pay more attention to these items while selecting universities and they are also the key factors influencing students' evaluation and willingness to study. In addition, scholarship, tuition, location and internship are the second most important factors affecting school enrollment. Career, campus and reputation, however, do not have significant influence on school enrollment. It is hoped that the research results presented in this study can help relevant schools to understand students' total preferences of choosing the university, and serve as an important information for universities to formulate enrollment strategy and relevant future operational activities.

## REFERENCES

- Bengio, Y. (2009). Learning deep architectures for AI. *Foundations and trends in Machine Learning*, 2(1), 1-127.
- Ghahramani, Z. (2015). Probabilistic machine learning and artificial intelligence. *Nature*, 521(7553), 452-459.
- Hagan, M. T., Demuth, H. B., Beale, M. H., & De Jesús, O. (1996). *Neural network design*. Boston, MA: Pws Pub.
- Hecht-Nielsen, R. (1992). Theory of the backpropagation neural network. In *Neural networks for perception*. Cambridge, MA: Academic Press.
- Hopfield, J. J. (1982). Neural networks and physical systems with emergent collective computational abilities. *Proceedings of the national academy of sciences*, 79(8), 2554-2558.
- Kelemen, J. (2007). From artificial neural networks to emotion machines with marvin minsky. *Acta Polytechnica Hungarica*, 4(4), 1-12.
- LeCun, Y., Bengio, Y., & Hinton, G. (2015). Deep learning. *Nature*, 521(7553), 436-444.
- McCarthy, J. (1989). Artificial intelligence, logic and formalizing common sense. In *Philosophical logic and artificial intelligence*. Dordrecht: Springer.
- O'Leary, D. E. (1997). The Internet, intranets, and the AI renaissance. *IEEE Computer*, 30(1), 71-78.
- Ramos, C., Augusto, J. C., & Shapiro, D. (2008). Ambient intelligence—the next step for artificial intelligence. *IEEE Intelligent Systems*, 23(2), 15-18.
- Rosenblatt, F. (1958). The perceptron: a probabilistic model for information storage and organization in the brain. *Psychological review*, 65(6), 386-408.
- Rumelhart, D. E., Durbin, R., Golden, R., & Chauvin, Y. (1995). Backpropagation: The basic theory. *Backpropagation: Theory, architectures and applications*, 1-34.
- Rumelhart, D. E., Hinton, G. E., & Williams, R. J. (1988). Learning representations by back-propagating errors. *Cognitive modeling*, 5(3), 1.
- Russell, S. J., & Norvig, P. (2016). Artificial intelligence: a modern approach. Malaysia: Pearson Education Limited.
- Turing, A. M. (2009). Computing machinery and intelligence. In *Parsing the Turing Test*. Dordrecht: Springer.



## BACK TO BASICS ON LEADERSHIP IN AN EMERGENT ECONOMY

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### ABSTRACT

**Purpose-** Leadership styles such as delegative, democratic, autocratic, and ethical leadership with respect to various aspects of trust and their causal relations along with determining the salient leadership style at public schools are the purpose of this research. Our assumption is that organizational trust is at the crux of human resource management since a healthy relationship between leaders and employees is a prerequisite for open communication, knowledge sharing and conflict management.

**Methodology-** Our research question is to understand the basic relationships between leadership styles and trust between principals and teachers. We are conducting a survey at designated school sites. Our questionnaire is comprised of three sections: Socio-demographic variables, leadership styles and organizational trust.

**Findings-** We have employed structural equation modelling (SEM) and found significant relationship between leadership styles and trust and *vice versa*. In sum, managerial trust has a significant effect on leadership styles which reveals the fact that dyadic relationships between leaders and employees enhance mutual trust.

**Conclusion-** In sum, managerial trust has a significant effect on leadership styles which reveals the fact that dyadic relationships between leaders and employees enhance mutual trust. Such relationships need to be considered in human resource management (SHRM).

**Keywords:** Leadership theories, SHRM, SEM, trust and competencies.

**JEL Codes:** M10, M12, M19.

## 1. INTRODUCTION

We are living in a business epoch of strengthening social networks based on interest and weakening social organizations and communities based on trust. Open communication and sharing problems as well as opportunities support both collaboration and learning, which are indispensable for effective leadership and human resource management at various sectors. Leaders at work and at schools enable their followers to be in a state of flow so that efficiency is attained according to Mihaly Csikszentmihalyi, who is one of the founding fathers of positive psychology (1990). He focuses on leadership competencies with particular emphasis on "flow theory" where flow is:

*"A mental state in which a person performing an activity is fully immersed in a feeling of energized focus, full involvement, and enjoyment"* (2012).

Csikszentmihalyi's theory of flow focuses mainly on ethical leadership framework, that is derived from well-known basic theories. According to him, among the 29 leadership competencies four are directly linked to his notion of flow: (1) Strategic thinking (setting clear meaningful goals), (2) Applying personal strengths for a common goal (such as self-esteem), (3) Balancing skill and challenge level (focusing on competencies and efforts along with results), and (4) Frequent feedback on performance all of which are relevant to trust, ethical responsibility and understanding of multiple perspectives.

Lately, leadership development and styles are gaining importance in the process of properly managing human resources in education. In this article, we have used (Ateş, 2005) are derived from Clark (1997 and 2004). We have analyzed ethical, autocratic, democratic and delegative (laissez-faire) leadership with respect to various aspects of trust and socio-demographic characteristics of educators/ teachers.

Organizational trust is the crux of strategic human resource management since a healthy relationship between leaders and employees is a prerequisite for open communication, knowledge sharing, and learning. Competencies which consist of knowledge, attitude and behavior are shaped and prospered in a positively reinforced learning environment. Organizational trust is regarded as a fundamental threshold, since it enhances job security at times of uncertainty and risk (Blomqvist & Ståhle, 1998, p. 11); further, consistent and expected behavior of leaders also enriches the trust environment.

That is why, leadership style is a significant factor in the formation of organizational and/or managerial trust. However, leadership styles and trust may not enhance predictability, harmony and strategic flexibility in planning and implementation if there is no incremental and/ or systematic development on the whole. Hence, with increasing trust between managers and subordinates, the perceived level of risk increases with uncalculated actions. Blomqvist and Ståhle have based their theoretical framework on both interpersonal and managerial trust (1998; 12). We have employed Scott's (1981) and Adams' (2004) scales of organizational trust which has been inspired from Luhmann's framework (1979) and it is adapted by Kanten (2012).

As an emergent economy, Turkish education system is continually changing both its programs as well as its structures. Therefore, principals as well as teachers at both primary and secondary schools have difficulty in adapting and internalizing new priorities. Consequently, particular leadership styles may become more predominant as hands-off policy often followed by principals at times of uncertainty and complexity. Further, organizational trust may have a significant effect on leadership styles, since especially dyadic relationships between leaders and employees enhance mutual trust under such fluid circumstances of uncertainty. We have limited our research to this interactive process between trust and leadership styles selected for the sake of brevity.

## 2. LITERATURE REVIEW

The leadership literature is replete with theoretical frameworks and models, describing different leadership styles. Leadership is the social interaction process within teams through which followers participate voluntarily in decision-making; whereas, leadership style is the pattern of attitudes and behaviors of leaders towards their teams. Lewin, Lippit and White's seminal piece (1939) have first defined three major leadership styles as: autocratic, democratic, and laissez faire/ delegative (Bhatti, Maitlo, Hashmi & Shaikh, 2012; p. 192-193).

We have employed here Donald Clark's four operationalized leadership styles that includes ethical leadership since it is especially significant within the context of education sector (1997). Clark has made research in middle schools and his questionnaire emphasized the effectiveness of these four leadership styles particularly between school principals and teachers (2004). Since our research is limited to state schools, and education systems have continuously been transformed by governments, it is not possible to employ multifactor leadership questionnaire of modern leadership theories. Besides, operationalization of classical leadership styles is both widely accepted and definitions and demarcation lines between these styles are clear. Below are the definitions of these styles:

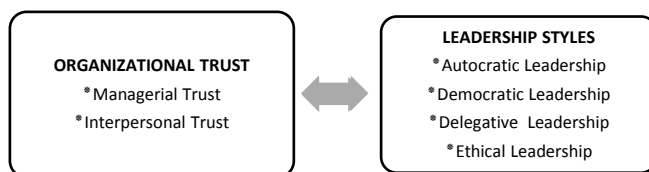
- ✓ **Democratic leaders** have participative style and they tend to include subordinates in all decision-making; therefore, it is time-consuming for some sectors despite the fact that it enhances tolerance and satisfaction ( Oshagbemi and Gill, 2003; Bhatti, Maitlo, Shaikh, Hashmi, & Shaikh, 2012, p. 193),
- ✓ **Autocratic leaders** have rule-abiding/ bureaucratic and controlling style and they tend to monitor and correct subordinates closely and expect strict obedience (Rast, Hogg, & Giessner, 2013, p. 636),
- ✓ **Delegative (laissez-faire) leaders** reveal a yielding and withdrawn style and they tend to avoid conflict and responsibilities, further they tend to hesitate in guidance or feedback. They either avoid being the center of attention or act too late when problems arise (Buch, Martinsen, & Kuvaas, 2015, p. 117),
- ✓ **Ethical leaders** walk the talk and integrity, fairness along with trustworthiness of leaders are highlighted. Such leaders act as role models for subordinates who learn and internalize the attitudes and values through social learning theory (Brown, Trevino and Harrison, 2005; Resick, Hargis, Shao, & Dust, 2013, p. 954).

Previous research on trust has mostly been ambiguous (Barber, 1983). Most research on trust at the individual, group/ team, and organizational levels of analysis typically suffer from unidimensional conceptualization and operationalization (Barber, 1983; Luhmann, 1979). Luhmann's writings on trust are very well-known and largely cited by researchers in many disciplines. Yet, only the 'early' writings of Luhmann have been widely used. [See Janne Jalava's dissertation for further information on Luhmann's later advanced systems theory and its relation to his early studies of trust].

Following "early" Luhmann, in our model of organizational trust, we have also regarded trust as a decision and/ or a prerequisite of communication and management. According to Luhmann, "to trust is to take a risk (1979; p. 24). Moreover, he distinguishes between familiarity, trust and confidence and three levels of analyses favoring confidence in his later works. Thus, we have only differentiated managerial trust and interpersonal trust, which are both dyadic and mutual and regarded organizational trust as a subsystem simply at these two analysis levels that are operationalized. However, personal trust and interpersonal are not enough to explain the wider processes according to Luhmann.

We have not focused on organizational trust at a higher level or "systemic confidence", that is comprised of programs and codes, since "late" Luhmann's advanced systems theory is beyond the scope of this paper. We have employed Scott's (1981) and Adams' (2004) scales of organizational trust which has been inspired from Luhmann's framework and it is adapted by Kanten (2012). In the below conceptual framework, we have analyzed trust and leadership styles both as dependent and independent variables since they have effect on each other.

**Figure 1: Conceptual Model**



### 3. DATA AND METHODOLOGY

We are conducting a survey at state school sites and our questionnaire is comprised of three sections: Socio-demographic variables, leadership styles and organizational trust. The demographic characteristics that are considered are: age, gender, education, seniority/ tenure track, marital status, hometown (during upbringing of teachers during primary and secondary schooling years between 7-19 of age).

We have conducted a survey and reached 314 teachers and 12 principals and 26 vice principals gathered from 12 different junior high schools and out of 2197 teachers in a district of Istanbul, Turkey. For the sake of brevity, we have used convenience sampling. We analyzed demographic data through descriptive statistics and used explanatory factor analysis using SPSS. We employed AMOS program for SEM.

Demographic features of teachers are demonstrated in Table 1 through descriptive statistics:



**Table 1: Demographic Variables**

	<b>Group</b>	<b>Frequency</b>	<b>%Percent</b>
<b>Gender</b>	Female	191	60,8
	Male	123	39,2
	Total	314	100,0
<b>Marital Statues</b>	Married	147	46,8
	Single	167	53,2
	Total	314	100,0
<b>Seniority</b>	Less than 1 year	63	20,1
	1-5 years	204	65,0
	6-10 years	29	9,2
	11-15 years	15	4,8
	21 years and over	3	1,0
	Total	314	100,0
<b>Age</b>	20-29 years	171	54,5
	30-39 years	113	36,0
	40-49 years	25	8,0
	50 years and over	5	1,6
	Total	314	100,0
<b>Hometown</b>	Village	32	10,2
	Sub -district	15	4,8
	Town /District	83	26,4
	Province	67	21,3
	Metropolitan city	117	37,3
	Total	314	100,0

Our major research question is to understand the relationship between the leadership styles and trust as well as determining the salient leadership style in our sample. Our suggested hypotheses are:

1. Ethical leadership has a significant effect on organizational trust or vice versa.
2. Democratic leadership has a significant effect on organizational trust or vice versa.
3. Autocratic leadership has a significant effect on organizational trust or vice versa.
4. Delegation (laissez faire) leadership has a significant effect on organizational trust or vice versa.

In sum, organizational trust - be it managerial or interpersonal - encourages people to take risks and draw lessons from errors. Therefore, trust is a challenge for people to learn and develop their competencies better in trustworthy environments where people are not afraid of the fact that others might take advantage of them. Interpersonal trust has both cognitive and affective components. The cognitive aspect is based upon prior experience and familiarity from the past and it is conditional, while the latter focuses on reciprocal emotional investments for the future. Thus, open and transparent communication, collaboration and teamwork depends on trust, flow, and leadership as suggested by Clark (1997), Csikszentmihalyi (1990) and Luhmann (1979).

#### 4. FINDINGS AND DISCUSSIONS

Below we have summarized the descriptive statistics on scales of leadership styles. 40 Questions with their frequencies are as follows: (See the research questionnaire with 56 questions excluding demographic variables at the Appendix).

**Table 2: 40 Survey Questions and their Frequencies**

	Frequency %Percent	I strongly disagree	I do not agree	undecided	I agree	I strongly agree	Mean	Std. Deviation
Q 1	Frequency	59	57	30	109	59	3,17	1,418
	Percent	18,8	18,2	9,6	34,7	18,8		
Q 2	Frequency	71	59	26	103	55	3,04	1,458
	Percent	22,6	18,8	8,3	32,8	17,5		
Q 3	Frequency	23	51	34	118	88	3,63	1,250
	Percent	7,3	16,2	10,8	37,6	28,0		
Q 4	Frequency	58	55	49	91	61	3,13	1,403
	Percent	18,5	17,5	15,6	29,0	19,4		
Q 5	Frequency	12	17	20	90	175	4,27	1,054
	Percent	3,8	5,4	6,4	28,7	55,7		
Q 6	Frequency	14	17	22	109	152	4,17	1,071
	Percent	4,5	5,4	7,0	34,7	48,4		
Q 7	Frequency	13	16	16	91	178	4,29	1,055
	Percent	4,1	5,1	5,1	29,0	56,7		
Q 8	Frequency	21	29	44	122	98	3,79	1,176
	Percent	6,7	9,2	14,0	38,9	31,2		
Q 9	Frequency	19	25	26	112	132	4,00	1,171
	Percent	6,1	8,0	8,3	35,7	42,0		
Q 10	Frequency	13	23	33	90	155	4,12	1,120
	Percent	4,1	7,3	10,5	28,7	49,4		
Q 11	Frequency	16	26	42	109	121	3,93	1,144
	Percent	5,1	8,3	13,4	34,7	38,5		
Q 12	Frequency	10	11	20	78	195	4,39	,980
	Percent	3,2	3,5	6,4	24,8	62,1		
Q 13	Frequency	9	8	15	77	205	4,47	,919
	Percent	2,9	2,5	4,8	24,5	65,3		
Q 14	Frequency	13	9	40	85	167	4,22	1,049
	Percent	4,1	2,9	12,7	27,1	53,2		
Q 15	Frequency	4	20	53	125	112	4,02	,947
	Percent	1,3	6,4	16,9	39,8	35,7		
Q 16	Frequency	29	25	87	91	82	3,55	1,220
	Percent	9,2	8,0	27,7	29,0	26,1		
Q 17	Frequency	17	15	49	86	147	4,05	1,142
	Percent	5,4	4,8	15,6	27,4	46,8		
Q 18	Frequency	12	17	33	86	166	4,20	1,076
	Percent	3,8	5,4	10,5	27,4	52,9		
Q 19	Frequency	10	14	26	81	183	4,32	1,017
	Percent	3,2	4,5	8,3	25,8	58,3		
Q 20	Frequency	10	9	22	64	209	4,44	,972
	Percent	3,2	2,9	7,0	20,4	66,6		
Q 21	Frequency	10	11	21	77	195	4,39	,983
	Percent	3,2	3,5	6,7	24,5	62,1		
Q 22	Frequency	12	8	27	80	187	4,34	1,006

	Percent	3,8	2,5	8,6	25,5	59,6		
Q 23	Frequency	25	45	35	113	96	3,67	1,266
	Percent	8,0	14,3	11,1	36,0	30,6		
Q 24	Frequency	25	42	90	97	60	3,40	1,171
	Percent	8,0	13,4	28,7	30,9	19,1		
L25	Frequency	13	23	85	110	83	3,72	1,062
	Percent	4,1	7,3	27,1	35,0	26,4		
Q 26	Frequency	7	23	33	114	137	4,12	1,012
	Percent	2,2	7,3	10,5	36,3	43,6		
Q27	Frequency	13	24	34	72	171	4,16	1,145
	Percent	4,1	7,6	10,8	22,9	54,5		
Q 28	Frequency	83	51	30	83	67	3,00	1,531
	Percent	26,4	16,2	9,6	26,4	21,3		
Q 29	Frequency	17	20	36	92	149	4,07	1,153
	Percent	5,4	6,4	11,5	29,3	47,5		
Q 30	Frequency	5	14	18	83	194	4,42	,906
	Percent	1,6	4,5	5,7	26,4	61,8		
Q 31	Frequency	6	16	33	95	164	4,26	,969
	Percent	1,9	5,1	10,5	30,3	52,2		
Q 32	Frequency	23	31	67	102	91	3,66	1,202
	Percent	7,3	9,9	21,3	32,5	29,0		
Q 33	Frequency	6	16	47	61	184	4,28	1,019
	Percent	1,9	5,1	15,0	19,4	58,6		
Q 34	Frequency	9	19	35	97	154	4,17	1,037
	Percent	2,9	6,1	11,1	30,9	49,0		
Q 35	Frequency	13	12	38	94	157	4,18	1,057
	Percent	4,1	3,8	12,1	29,9	50,0		
Q 36	Frequency	10	8	29	69	198	4,39	,980
	Percent	3,2	2,5	9,2	22,0	63,1		
Q 37	Frequency	16	15	42	95	146	4,08	1,116
	Percent	5,1	4,8	13,4	30,3	46,5		
Q 38	Frequency	11	13	34	102	154	4,19	1,022
	Percent	3,5	4,1	10,8	32,5	49,0		
Q 39	Frequency	12	10	44	86	162	4,20	1,045
	Percent	3,8	3,2	14,0	27,4	51,6		
Q 40	Frequency	14	14	42	91	153	4,13	1,090
	Percent	4,5	4,5	13,4	29,0	48,7		

As may be seen from the above table; the items that have the highest scores are questions 13, 20 and 30. *"It is the leader's job to help subordinates find their "passion."* has a mean of 4.47", *"When there are differences in role expectations, I work with them to resolve the differences."* has a mean of 4.44. *"As a rule, leaders should allow subordinates to appraise their own work."* has a mean of 4.42.

Likewise, the items that have the lowest scores are questions 28, 2 and 4. *"Employees seek mainly job security."* has a mean 3.00. *"Effective leaders give orders and clarify procedures so that responsibilities are clear."* has a mean 3.04 and *"As a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives."* has a mean of 3.13.

On table 3 are the descriptive statistics on the scale of organizational trust:

Table 3: Descriptive Statistics of the Trust Scale

	Frequency %Percent	I strongly disagree	I do not agree	Undecided	I agree	I strongly agree	Mean	Std. Deviation
Q 1	Frequency	19	19	24	76	176	4,18	1,181
	Percent	6,1	6,1	7,6	24,2	56,1		
Q 2	Frequency	15	18	55	94	132	3,99	1,122
	Percent	4,8	5,7	17,5	29,9	42,0		
Q 3	Frequency	14	8	14	74	204	4,42	1,012
	Percent	4,5	2,5	4,5	23,6	65,0		
Q 4	Frequency	9	11	20	75	199	4,41	,963
	Percent	2,9	3,5	6,4	23,9	63,4		
Q 5	Frequency	9	13	18	85	189	4,38	,972
	Percent	2,9	4,1	5,7	27,1	60,2		
Q 6	Frequency	10	8	38	66	192	4,34	1,003
	Percent	3,2	2,5	12,1	21,0	61,1		
Q 7	Frequency	18	15	38	96	147	4,08	1,138
	Percent	5,7	4,8	12,1	30,6	46,8		
Q 8	Frequency	16	18	44	93	143	4,05	1,134
	Percent	5,1	5,7	14,0	29,6	45,5		
Q 9	Frequency	9	15	34	93	163	4,23	1,013
	Percent	2,9	4,8	10,8	29,6	51,9		
Q 10	Frequency	13	26	40	94	141	4,03	1,133
	Percent	4,1	8,3	12,7	29,9	44,9		
Q 11	Frequency	9	25	78	79	123	3,90	1,100
	Percent	2,9	8,0	24,8	25,2	39,2		
Q 12	Frequency	11	19	64	106	114	3,93	1,060
	Percent	3,5	6,1	20,4	33,8	36,3		
Q 13	Frequency	10	12	23	91	178	4,32	,990
	Percent	3,2	3,8	7,3	29,0	56,7		
Q 14	Frequency	11	3	31	82	187	4,37	,955
	Percent	3,5	1,0	9,9	26,1	59,6		
Q 15	Frequency	9	13	30	88	174	4,29	,996
	Percent	2,9	4,1	9,6	28,0	55,4		
Q 16	Frequency	14	16	57	77	150	4,06	1,125
	Percent	4,5	5,1	18,2	24,5	47,8		

As can be seen from the table above; the statements concerning “organizational trust” are questions 3, 4 and 5 consequently. “I can count on my immediate supervisor for help if I have difficulties with my job.” has a mean of 4.42, “I have complete trust that my immediate supervisor will treat me fairly.” has a mean of 4.41, “I feel free to discuss work problems with my immediate supervisor.” has a mean of 4.38.

Likewise, the items that have the lowest scores are questions are 11, 12 and 2. “I can share sensitive information with members of my workgroup because I know group members will hold it in strict confidence.” has a mean of 3.90, “The level of trust among

people I work with on a regular basis is very high.” has a mean of 3.93 and “If I make a mistake my supervisor is willing to “forgive and forget.”” has a mean of 3.99.

Explanatory factor analysis of the leadership scale is as follows:

**Table 4: Factor Analysis of the Leadership Scale**

	Component				
	Democratic	Ethical	Delegative	Autocratic -Controlling	Autocratic -rule abiding
L1				,809	
L2				,852	
L3				,655	
L4					,540
L5	,675				
L6	,701				
L7	,732				
L8					,746
L9					,659
L10	,695				
L11	,567				
L12	,794				
L13	,740				
L14	,713				
L17	,663				
L18	,744				
L19	,790				
L20	,766				
L21	,732				
L22	,738				
L23			,719		
L24			,654		
L25			,728		
L26	,571				
L27	,630				
L29	,595				
L30	,667				
L31		,662			
L32		,564			
L33		,604			
L34		,783			
L35		,792			
L36		,770			
L37		,749			
L38		,770			
L39		,807			
L40		,809			

Three questions that are found to be below .50 (i.e., questions 15, 16 and 28) are omitted from the analysis. Democratic leadership component of the scale explained 44 % of variance where the total variance was almost 65 % (See Table 5 in the Appendix).

Explanatory factor analysis of the organizational trust scale is as follows:

**Table 5: Factor Analysis of Trust Scale**

	Component	
	Managerial Trust	Interpersonal Trust
Q 1	,811	
Q 2	,653	
Q 3	,810	
Q 4	,778	
Q 5	,834	
Q 6	,771	
Q 7		,780
Q 8		,826
Q 9		,654
Q 10		,855
Q 11		,863
Q 12		,594
Q 13	,676	
Q 14	,735	
Q 15	,648	
Q 16		,782

Managerial trust component of the scale explained 64 % of variance where the total variance was almost 73 % (See Table 7 in the Appendix).

Internal consistency and reliability is high for both leadership (0.954) and trust (0.962). (See the Table 8 on Reliability/ Cronbach's Alpha in the Appendix).

Figure 2: SEM Model 1 - The Effect of Trust on Leadership Styles

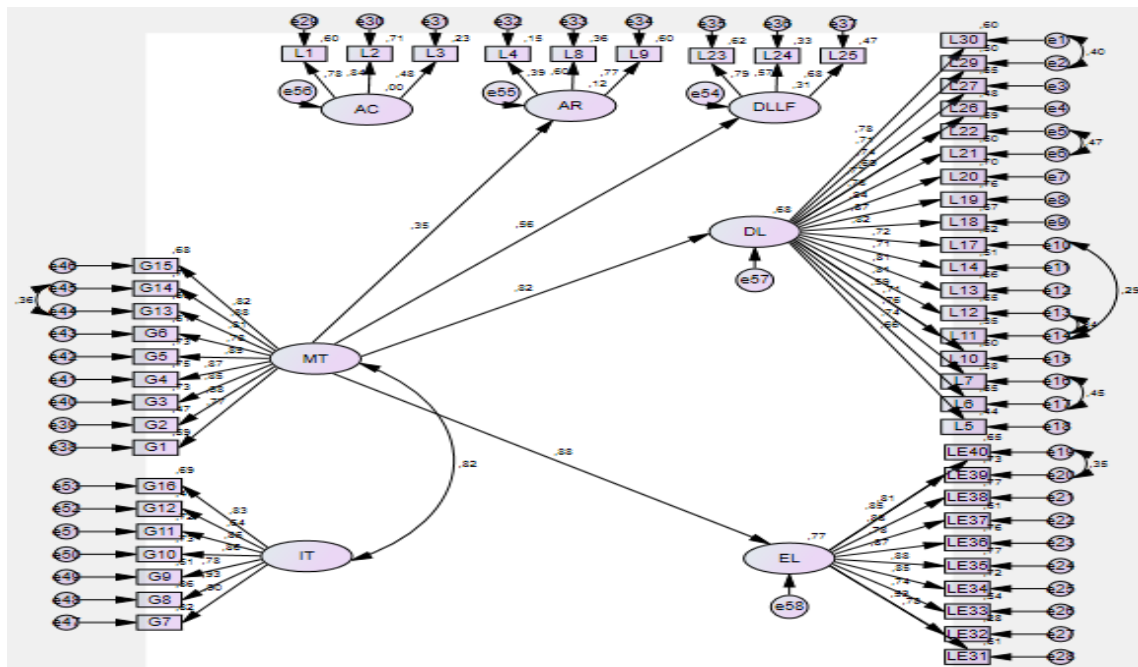


Table 6: Structural Equation Model 1	SEM Model 1	R <sup>2</sup>
DL/ LF	= 0,559* ( MT)	<b>0,312</b>
AC	= 0,353* ( MT)	<b>0,125</b>
EL	= 0,876* ( MT)	<b>0,768</b>
DL	= 0,824* ( MT)	<b>0,679</b>

(Goodness of fit: **Cmin/df:2.365**; GFI:0.726; CFI: 0.873; AGFI: 0.701; PGFI: 0.666; NFI: 0.8; TLI: 0.876). (Bootstrap:900 max likelihood).

The first SEM has been found significant at 5 % confidence level. In this model, dependent variable is leadership style and the independent variable is organizational trust.

There is a positive causal relation between delegative leadership and managerial trust (+0.559 standardized weight/ coefficient). Managerial trust has explained with an effect of 31.2 % of delegative leadership style.

There is a positive causal relation between autocratic (controlling) leadership and managerial trust (+0.353 coefficient). Managerial trust has explained with an effect of 12.5 % on autocratic (controlling) leadership style.

There is a positive causal relation between ethical leadership and managerial trust (+0.876 coefficient). Managerial trust has explained with an effect of 76.8 % on ethical leadership style.

There is a positive causal relation between democratic leadership and managerial trust (+0.824 coefficient). Managerial trust has explained with an effect of 67.9 % on democratic leadership style.

Figure 3: SEM Model 2 - The Effect of Leadership Styles on Trust

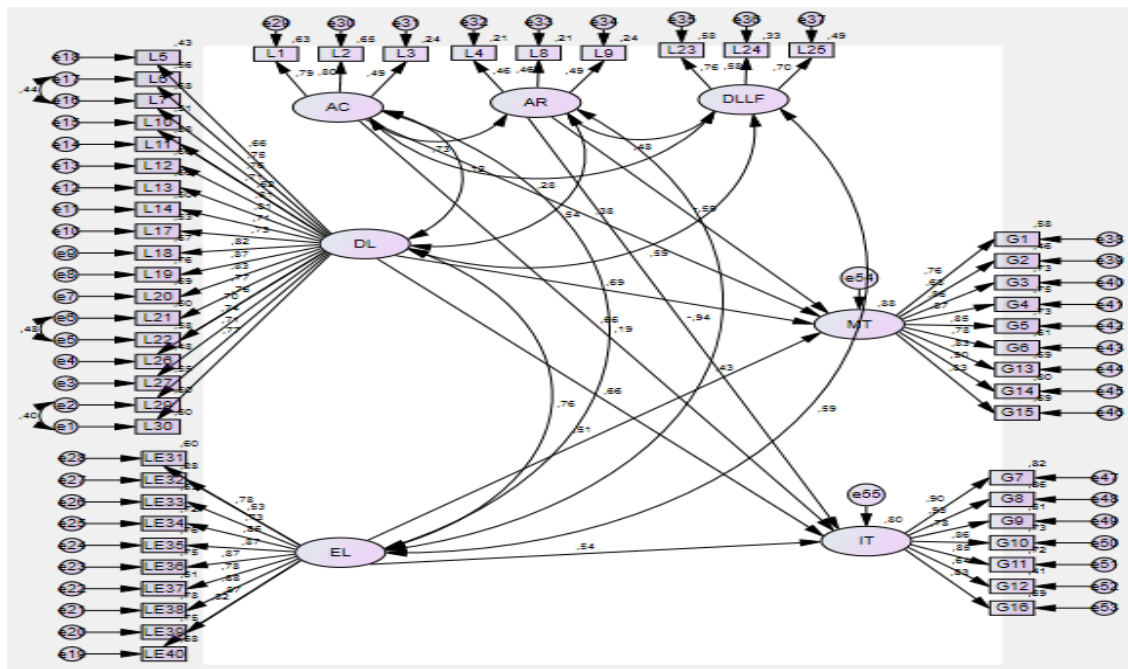


Figure 2: SEM MODEL 2: The effect of Leadership Styles on Trust

Table 7: Structural Equation Model 2

SEM MODEL 2		R2
IT	$= -0,942*AR + 0,661*AC + 0,536*EL + 0,655*DL$	<b>0,803</b>
MT	$= -0,586*AR + 0,507*EL + 0,692*DL$	<b>0,877</b>

(Goodness of fit: **Cmin/df:2.414**; GFI:0.721; CFI: 0.869; AGFI: 0.694; PGFI: 0.657; NFI: 0.797; TLI: 0.862).(Not multivariate normality ; Bootstrap:900 max.likelihood)

The second SEM has been found significant at 5 % confidence level. In this model, dependent variable is organizational trust and the independent variable is leadership style.

There is a negative causal relation between interpersonal trust and autocratic (rule- abiding) leadership (-0.942 standardized value/ coefficient). Rest of the relations are all positive. There are positive causal relationships between interpersonal trust and autocratic (controlling) leadership (0.661 coefficient), ethical leadership (0.536 coefficient), democratic leadership (0.655 coefficient). Autocratic (rule – abiding), autocratic (controlling), ethical and democratic leadership styles, in other words, total leadership styles have explained with an effect of 80.3 % of interpersonal trust.

There is a negative causal relation between managerial trust and autocratic (rule- abiding) leadership (-0.586 coefficient). Rest of the relations are all positive. There are positive causal relationships between managerial trust and ethical leadership (0.507 coefficient), democratic leadership (0.692 coefficient). Autocratic (rule – abiding), ethical and democratic leadership styles, in other words, total leadership styles have explained with an effect of 87.7 % of managerial trust. On table 8, the reliability (Cronbach's Alpha) scores and on Table 14 are correlations displayed.



**Table 8: Reliability**

Variables	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Democratic Leadership	,958	,960	18
Ethical Leadership	,944	,946	10
Delegative Leadership	,720	,722	3
Autocratic –Controlling	,736	,731	3
Autocratic - Rule abiding	,607	,617	3
Leadership Total	<b>,954</b>	<b>,959</b>	<b>37</b>
Managerial Trust	,946	,948	9
Interpersonal Trust	,938	,938	7
Organizational Trust Total	<b>,962</b>	<b>,963</b>	<b>16</b>

**Table 9 : Correlations Matrix**

Spearman's rho		Democratic Leadership	Ethical Leadership	Delegative Leadership	Autocratic–Controlling	Autocratic – rule abiding	Managerial Trust	Interpersonal Trust
Democratic Leadership	Correlation Coefficient	1,000	,746**	,511**	,143*	,254**	,730**	,606**
	Sig. (2-tailed)		,000	,000	,011	,000	,000	,000
	N	314	314	314	314	314	314	314
Ethical Leadership	Correlation Coefficient	,746**	1,000	,484**	,189**	,253**	,766**	,661**
	Sig. (2-tailed)	,000		,000	,001	,000	,000	,000
	N	314	314	314	314	314	314	314
Delegative Leadership	Correlation Coefficient	,511**	,484**	1,000	,218**	,299**	,432**	,380**
	Sig. (2-tailed)	,000	,000		,000	,000	,000	,000
	N	314	314	314	314	314	314	314
Autocratic Controlling	Correlation Coefficient	,143*	,189**	,218**	1,000	,410**	,111*	,173**
	Sig. (2-tailed)	,011	,001	,000		,000	,050	,002
	N	314	314	314	314	314	314	314
Autocratic Rule abiding	Correlation Coefficient	,254**	,253**	,299**	,410**	1,000	,131*	,110
	Sig. (2-tailed)	,000	,000	,000	,000		,021	,052
	N	314	314	314	314	314	314	314
Managerial Trust	Correlation Coefficient	,730**	,766**	,432**	,111*	,131*	1,000	,755**
	Sig. (2-tailed)	,000	,000	,000	,050	,021		,000
	N	314	314	314	314	314	314	314
Interpersonal Trust	Correlation Coefficient	,606**	,661**	,380**	,173**	,110	,755**	1,000
	Sig. (2-tailed)	,000	,000	,000	,002	,052	,000	
	N	314	314	314	314	314	314	314

\*\*. Correlation is significant at the 0.01 level (2-tailed). \*. Correlation is significant at the 0.05 level (2-tailed).

Table 10: Mann - Whitney U Test with respect to Demographic Differences on the Two Scales					
Dependent Variable	Independent Variable		Z	Sig.	Explanation
Delegative leadership	Hometown				
	Village	Town/district	-2,278	,023	<b><i>There is significant difference</i></b> between the teachers whose hometowns are villages and small towns versus the others. The first perceives more delegative leadership style than the latter.
	69,33	53,63			
	Sub -district	Town/District	-2,681	,007	
	67,50	46,25			
	Sub -district	Province	-2,390	,017	
	54,70	38,54			
	Sub -district	Metropolitan City	-1,958	,050	
	84,57	64,18			
Delegative leadership	Age				
	20-29 age	30-39 age	-2,525	,012	
	132,56	157,54			
	20-29 age	50 years and over	-2,199	,028	
	87,07	137,50			
	30-39 age	50 years and over	-1,959	,050	
	58,21	88,60			
Democratic leadership	Age				Older teachers of age 50 years and over are perceiving their principals’ styles as more democratic than the others.
	20-29 age	50 years and over	-2,791	,005	
	86,67	151,10			
	30-39 age	50 years and over	-2,544	,011	
	57,82	97,50			
	40-49 age	50 years and over	-2,025	,043	
	14,06	22,70			
Ethical leadership	Age				Older teachers of age 50 years and over are perceiving their principals’ styles as more ethical than the others.
	20-29 age	50 years and over	-2,537	,011	
	86,84	145,30			
	30-39 age	50 years and over	-2,342	,019	
	57,96	94,40			
	40-49 age	50 years and over	-2,379	,017	
	13,80	24,00			

P.S: There is no significant relation	between autocratic leadership & demography.				
Interpersonal Trust	Age				Older teachers of age 50 years and over have higher interpersonal trust than the others.
	20-29 age	50 years and over	-2,649	,008	
	86,77	147,60			
	30-39 age	50 years and over	-2,526	,012	
	57,84	97,00			
	40-49 age	50 years and over	-2,504	,012	
	13,72	24,40			

Out of five demographic variables (gender, education, seniority, marital status, **hometown**, and **age**, only the latter two variables have been found significantly meaningful.

## 5. CONCLUSION

We have limited our sample to secular state schools where principals are appointed rather than selected. Meanwhile, our survey has been distributed and collected by principals and vice principals; that is why, teachers have felt somewhat uneasy. This might have effected their answers. Autocratic leadership has been broken down into two components: rule-abiding and bureaucratic versus controlling styles. The first one has been found significant, while the latter has insignificant paths as independent variables. This might be as a result of the representative nature of principals of the education system in state schools. It would be more appropriate to include private junior high schools (primary and secondary) in future research.

Moreover, autocratic rule-abiding leadership style has high negative effect on both managerial and interpersonal trust. Rigid rules and high expectations of compliance based on “procedural justice” without taking specific context into account might have led to negative results such as decreasing motivation of teachers. However, autocratic controlling leadership has positive effect on interpersonal trust which may be interpreted as a perception of “distributive or restorative justice” among colleagues.

As an emergent economy, education system is continually changing both its programs as well as its structures. Therefore, principals have difficulty in adapting and internalizing new priorities and expectations. Delegative leadership style has become more predominant as a consequence of hands-off policy often followed by principals at times of uncertainty and complexity. Further studies may be done concerning the two cultural dimensions such as power distance, uncertainty avoidance which are particularly high (Hofstede; 1980).

Only managerial trust has a significant effect on leadership styles which reveals the fact that dyadic relationships between leaders and employees enhance mutual trust. Managerial trust has high explanatory power on ethical and democratic leadership styles as compared to the other styles, since they both have higher degrees of interaction. We have not employed the systemic level of analysis i.e., organizational level which reduces complexity that Luhmann had suggested in his definition of confidence and communication, since he regards them both essential for coordination within and among system at large. Future studies may take into account the organizational trust separately.

On the whole, Csikszentmihalyi's four major leadership competencies that are directly linked to his notion of flow are also found to be significant and relevant to managerial trust as well as ethical leadership as we have anticipated: (1) Strategic thinking (e.g., setting clear meaningful goals), (2) Applying personal strengths for a common goal (such as self-confidence, interpersonal communication), (3) Balancing skill and challenge level (e.g., focusing on competencies and efforts, that is, labor along with results), and (4) Frequent feedback and encouragement on performance and interpersonal relations.

In future studies on primary and secondary schools (junior high schools) in the metropolitan city (Istanbul), a larger sample size is needed to be able to generalize the findings to the population at large. Moreover, a comparison between secular as opposed to religious schools as well as public contrasted with private schools may be queried. However, Istanbul is representative of the diversity of the country and the appointed teachers are from diverse socioeconomic backgrounds, and the students of the district we have chosen are mostly from migrant families within Turkey.

## REFERENCES

- Adams, S. (2004). The Relationships Among Adult Attachment, General Self-Disclosure, and Perceived Organizational Trust: Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University In partial fulfillment of the requirements for the degree of, Doctor of Philosophy in Human Development.
- Ateş, G. (2005). Yöneticilerin Liderlik Tarzlarının Çalışanların İş Tatmini Üzerindeki etkileri: Hava Kuvvetleri Komutanlığında Uygulama. Kütahya: Dumlupınar Üniversitesi Sosyal Bilimler Enstitüsü Basılmamış Yüksek Lisans Tezi (unpublished graduate thesis).
- Barber, B. (1983). The Logic and Limits of Trust. New Jersey: Rutgers University Press.
- Begeç, S. (1999). Modern Liderlik Yaklaşımları ve Uygulaması. Gebze Yüksek Teknoloji Enstitüsü, Mühendislik ve Fen Bilimleri Enstitüsü.
- Bhatti, N., Maitlo, G. M., Shaikh, N., Hashmi, M. A., & Shaikh, F. M. (2012, February). The Impact of Autocratic and Democratic Leadership Style on Job Satisfaction. *International Business Research*, 5(2), 192-201. [www.ccsenet.org/ibr](http://www.ccsenet.org/ibr) (09.02.2019).
- Blomqvist, K., & Ståhle, P. (1998). Building Organizational Trust. 1-16.
- Brown, M., & Trevino, L. (2014). Do Role Models Matter? An Investigation of Role Modeling as an Antecedent of Perceived Ethical Leadership. *Journal Bus Ethics*, 122, 587–598.
- Buch, R., Martinsen, Ø. L., & Kuvaas, B. (2015). The Destructiveness of Laissez-Faire Leadership Behavior: The Mediating Role of Economic Leader-Member Exchange Relationships. *Journal of Leadership & Organizational Studies*, 22(11), 115-124.
- Clark, D. C., & Clark, S. N. (1997). Addressing Dilemmas Inherent in Educational Leadership Preparation Programs Through Collaborative Restructuring. *Peabody Journal of Education*, 72(2), 21-41.
- Clark, S., & Clark, D. (2003). Perspectives on Three Decades of the Middle Level Principalship. *Middle School Leadership*, 35(2), 48-54.
- Clark, S., & Clark, D. (2004). Expert Leadership and Comprehensive Professional Development: A Key to Quality Educators in Middle Schools. *Middle School Journal*, 35(4), 47-53.
- Csikszentmihalyi, Mihaly (1990). *Flow: The Psychology of Optimal Experience*. New York: Harper and Row.
- Hofstede, G. (1980). *Cultures and Organizations: Software of the Mind*, N.Y.: McGraw-Hill.
- Jalava, J. (2006). Trust as a Decision: The Problems and Functions of Trust in Luhmannian Systems Theory. Helsinki: University of Helsinki, Faculty of Social Sciences, Department of Social Policy, Research Reports.
- Retrieved from <http://ethesis.helsinki.fi/julkaisut/val/sospo/vk/jalava/trustasa.pdf> (09.02.2018).
- Kanten, P. (2012). İş Görenlerde İşe Adanmanın ve Proaktif Davranışların Oluşumunda Örgütsel Güven ile Örgütsel Özdeşleşmenin Rolü. Isparta: T.C. Süleyman Demirel Üniversitesi Sosyal Bilimler Enstitüsü İşletme Anabilim Dalı Basılmamış Yüksek Lisans Doktora Tezi. (unpublished graduate thesis).
- Lewin, Lippitt & White (1939). Patterns of Aggressive Behavior in Experimentally Created "Social Climates". *Journal of Social Psychology*, 10(2), 271-299.
- Luhmann, N. (1979). *Trust and Power*. John Wiley & Sons.
- Luhmann, N. (2000). Trust: Making and Breaking Cooperative Relations. G. Diego içinde, *Familiarity, Confidence, Trust: Problems and Alternatives* (p. 94-107). Oxford: University of Oxford.
- Mayer, R. C., Davis, J. H., & Schoorman, D. F. (1995). An Integrative Model of Organizational Trust. *Academy of Management Review*, 20(3), 709-734.
- McAllister, D. J. (1995). Affect and Cognition Based Trust as Foundation for Interpersonal Cooperation in Organizations. *Academy of Management Journal*, 38(1), 24-59.
- Oshagbemi, T. and Gill, R. (2003). Differences in Leadership Styles and Behavior Across Hierarchical Levels in UK Organizations. *Leadership Styles and Behavior*. 25(1), 93-106.
- Pawar, D. V. (2014). Styles of Leadership. *International Journal of Research in all Subjects in Multi Languages*, 2(7), 12.
- Rast, D. E., Hogg, M. A., & Giessner, S. R. (2013). Self-uncertainty and Support for Autocratic Leadership. *Self and Identity*, 12(6), 635–649.
- Resick, C. J., Hargis, M. B., Shao, P., & Dust, S. B. (2013). Ethical Leadership, Moral Equity Judgments, and Discretionary Workplace Behavior. *Human Relations*, 66(7), 951-972.
- Scott, D., & Cook, B. (1983). The Relationship Between Employee Age and Interpersonal Trust Within an Organizational Context. School of Business: Faculty Publications and Other Works, 69-83.

Seppanen, R., Blomqvist, K., & Sundqvist, S. (2007). Measuring Inter-Organizational Trust—A Critical Review of the Empirical Research in 1990–2003. *Industrial Marketing Management*, 36, 249 – 265.

Tuna, M., Bircan, H., & Yeşiltaş, M. (2012). Etik Liderlik Ölçeğinin Geçerlilik ve Güvenilirlik Çalışması: Antalya Örneği. *Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 26(2), 143-155.

Vidotto, G., Vicentini, M., Argentero, P., & Bromiley, P. (2008). Assessment of Organizational Trust: Italian Adaptation and Factorial Validity of the Organizational Trust Inventory. *Social Indicators Research Springer*, 88, 563-575. <https://link.springer.com/journal/11205> (06.09.2018).



## THE MEDIATION ROLE OF BRAND LOVE AND EXPERIENCE IN THE EFFECT OF SELF-BRAND CONNECTION ON THE BRAND LOYALTY

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### ABSTRACT

**Purpose-** Today, many reasons such as the rapid development of technology and the differences among the demands and needs of the consumers have led the enterprises to identify the elements that can distinguish themselves from their competitors. Therefore, researching the elements that can create brand loyalty is very important in terms of developing the right strategies. The aim of the study is to investigate the mediation role of brand love and brand experience in the effect of self-brand connection on brand loyalty.

**Methodology-** The research population consists of 18-year-and older university students living in Erzincan province. After the mistaken and deficient answers in the questionnaire have been eliminated, 300 questionnaire forms have been evaluated.

**Findings-** The results obtained show that self-brand connection has a significant effect on brand loyalty. On the other hand, it is determined that brand love and brand experience have mediation roles in the effect of self-brand connection on brand loyalty.

**Conclusion-** Brand loyalty, brand experience and brand love are effective in creating brand loyalty.

**Keywords:** Brand, self-brand connection, brand love, brand experience, brand loyalty

**JEL Codes:** M30, M31, M39

## BENLİK-MARKA BAĞININ MARKA SADAKATİ ÜZERİNDEKİ ETKİSİNDE MARKA AŞKI VE DENEYİMİNİN ARACILIK ROLÜ <sup>1</sup>

### ÖZET

**Amaç-** Günümüzde teknolojinin hızla gelişmesi, tüketicinin istek ve ihtiyaçlarının farklılık göstermesi gibi birçok sebep işletmeleri, kendilerini rakiplerinden ayırt edebilecek unsurlar tespit etmeye itmiştir. Bu yüzden marka sadakati oluşturabilecek öğelerin araştırılması doğru stratejilerin geliştirilmesi açısından oldukça önemlidir. Bu araştırmanın amacı; benlik-marka bağının marka sadakati üzerindeki etkisinde, marka aşkı ve marka deneyiminin aracılık rolünün araştırılmasıdır.

**Yöntem-** Araştırmanın ana kütlesini Erzincan il sınırlarında yaşayan 18 yaş ve üzeri üniversite öğrencileri oluşturmaktadır. Anketlerin hatalı ve eksik cevapları elendikten sonra 300 adet anket formu değerlendirmeye tabi tutulmuştur.

**Bulgular-** Elde edilen sonuçlar benlik-marka bağının marka sadakati üzerinde anlamlı etkiye sahip olduğunu göstermektedir. Bununla birlikte benlik-marka bağının marka sadakati üzerindeki etkisinde marka aşkı ve marka deneyiminin aracılık rolleri olduğu tespit edilmiştir.

**Sonuç-** Marka bağlılığı yaratmada benlik marka bağı, marka deneyimi ve marka aşkı etkilidir.

**Anahtar Kelimeler:** Marka, benlik marka bağı, marka aşkı, marka deneyimi, marka sadakati,

**JEL Kodları:** M30, M31, M39

<sup>1</sup>Bu çalışma Global Business Research Congress – 2019’da tam metin bildiri olarak sunulmuştur.

## 1. GİRİŞ

Pazardaki ürünlerin kolay biçimde taklit edilebilmesi, firmaların benzer nitelikteki ürünleri kolaylıkla pazarlara sunabilmeleri ve sürekli artan rekabet değerli marka yaratmanın önemini daha da artırmıştır. Bu nedenle işletmeler, kendilerine özgü değerleri, özellikleri, karakteristikleri yansıtan farklı markalar yaratmak zorunda kalmışlardır (Kotler ve Keller, 2009: 277). Literatürde yer alan çalışmalarda; Brakus ve diğ. (2009), Chang ve Chieng (2006), Nadiri ve Günay (2013) ile Zarantonello ve Schmitt (2010), doğru pazarlama çabaları neticesinde memnuniyet duygusu geliştiren müşterilerin marka deneyimlerinin zaman içerisinde müşteri sadakatine dönüştüğü sonucuna ulaşmışlardır. Müşteriler kendileriyle özdeşleştirdikleri markaların cazibesine kapılmaktadırlar. Bu nedenle müşteri ve marka arasındaki bağlantı müşterinin markayı kendisiyle benzeştirmesiyle harekete geçmekte, markanın imajı ve kişilik özellikleri aracılığıyla gelişmektedir (Ridgway, 2011: 20).

İşletmeler, markaların somut özelliklerine odaklanmaktan ziyade müşterilerinin duygularına ve kalplerine hitap ettikçe, müşterilerine fayda sağladıkça ve bireylerin hayatlarına değer kattıkça rekabet ortamında avantaj sahibi olabileceklerdir (Knapp, 1999: 8-9). Huang (2017) marka deneyimi üzerinde marka aşkının etkisini incelemiş; marka aşkının hem davranışsal hem de tutumsal marka sadakati üzerinde etkili olduğunu bulmuştur. Benzer şekilde Alnawas ve Altarifi (2016) yaptıkları çalışmalarında marka aşkı ve sadakati arasında olumlu bir ilişki olduğunu belirlemişlerdir. Yang ve diğ. (2017) ise marka deneyiminin marka sadakati üzerinde etkisi olduğunu ifade etmişlerdir. Yine Hussein (2018) olumlu marka deneyiminin marka sadakati üzerinde pozitif etkisi olduğu sonucuna ulaşmıştır. Van der Westhuizen (2018) yaptığı çalışmada benlik-marka bağının marka deneyimi ile olumlu bir ilişkisi olduğu sonucuna ulaşmış, benlik-marka bağı ve marka sadakati arasında marka deneyiminin aracılık etkisi olduğunu da belirtmiştir. Eelen ve diğ. (2017) benlik-marka bağı üzerinde yaptıkları çalışmalarında ise marka sadakati ile benlik-marka bağı arasında pozitif ilişki olduğu sonucuna varmışlardır. Grubb ve Grathwohl (1967) bireyin benliğiyle uyumlu olan markaları veya ürünleri tercih etmesini benlik teorisiyle açıklamışlardır. Benlik uyumu benlik kavramının doğal bir uzantısı olarak düşünülmektedir. Benlik uyum teorisindeki temel varsayım, bir tüketicinin kendi benliğine uyan ürün veya markaları seçme eğiliminde olduğu yönündedir. Bu varsayım uyum derecesi ne kadar yüksekse satın alma niyetinin de o kadar yüksek olduğunu ortaya koymaktadır (Sirgy ve diğ., 1991: 364; Uşaklı ve Baloğlu, 2011: 116). Liu ve diğ. (2012) markaya yönelik tutum ve sadakat üzerinde benlik uyumunun etkisi olduğunu belirtmişlerdir. İlgili literatür desteği doğrultusunda marka sadakatine etki eden değişkenler olarak benlik-marka bağı, marka aşkı ve marka deneyimi kavramları ele alınmış, ayrıca marka deneyimi ve marka aşkının aracılık etkisi araştırılarak yazına katkı sağlanması amaçlanmıştır. Çalışma dört bölümden oluşmaktadır. İlk bölümde; benlik-marka bağı, marka sadakati, marka aşkı ve marka deneyimi kavramları hakkında literatür taraması yapılarak açıklamalar sunulmuştur. İkinci bölümde; çalışmanın amacı, yöntemi, sınırları, kullanılan ölçekler, model ve hipotezler hakkında bilgiler verilmiştir. Üçüncü bölümde; bulgular değerlendirilerek analizler yapılmış olup, son bölümde ise sonuçlar belirtilerek bir takım önerilerde bulunulmuştur.

## 2. TEORİK ÇERÇEVE

### 2.1. Benlik-Marka Bağı

Benlik-marka bağı benlik uyum işleyiş biçimiyle alakalıdır. Tüketicinin kimliğini oluşturan ve bu kimlikle uyum sağlayan unsurları ele almaktadır (Aguirre-Rodriguez ve diğ., 2012: 1180). Diğer bir ifadeyle benlik-marka bağı; “Bireyin benliğine markayı ne ölçüde dâhil ettiği veya benliğiyle birleştirme derecesidir.” (Escalas, 2004: 170; Escalas ve Bettman, 2005: 378). Van der Westhuizen (2018: 173) ise benlik-marka bağını özel bir marka ile tüketici arasındaki benlik bağı olarak ifade etmiştir. Benlik-marka bağı tüketicilerin benliklerinin oluşmasında önemli bir rol oynamaktadır. Benlik-marka bağı kavramında bireyler; kendilerini kimlik hedeflerine ulaştıracak, kimliklerinin oluşmasına yardımcı olacak, kendilerini temsil edebilecek, kimlik görünümlerini hem kendilerine hem de diğer bireylere sunabilecek ürün ve markaları kullanmak istemektedirler. Yine marka ve tüketici arasında oluşan kuvvetli ve anlamlı bağ benlik-marka bağı ile ifade edilmektedir (Escalas ve Bettman: 2003, 340). Benlik-marka bağı oldukça öznel bir yapıdır. Bir başka ifadeyle benlik-marka bağı, tüketici odaklı olup kişisel ilişkiler üzerine odaklanmaktadır (Van der Westhuizen, 2018: 172). Erciş ve diğ. (2017) yaptıkları çalışmada ideal ve gerçek benlik uyumunun duygusal marka bağlılığı üzerinde etkisi olduğunu belirtmişlerdir. Benlik-marka bağı yüksek olan müşteriler markaya yönelik olumlu bakış açısına sahiptirler. Çünkü benlik bağı hem bireyin markaya güçlü duygular beslemesine hem de markaya yönelik davranışsal boyuta önemli etkiler yaratmaktadır (Ferraro ve diğ., 2013: 477). Hemsley-Brown ve Alnavas (2016) yaptıkları çalışmalarında benlik-marka bağı ile marka sadakati arasında olumlu bir ilişki olduğunu ifade etmişlerdir. Hwang ve Kandampully (2012) yaptıkları çalışmalarında müşterinin benlik-marka bağı arttıkça markaya duyduğu aşkın, duygusal marka sadakatinin ve marka yönelik tutumsal sadakatinin artacağı sonucuna ulaşmışlardır. Lee ve Jeong (2014) ise benlik imaj uyumunun online marka deneyimi üzerinde olumlu etkisi olduğunu belirtmişlerdir.

## 2.2. Marka Aşkı

Tüketici davranışlarına olumlu yönde etki eden, ürünlerin fiyatları ne olursa olsun tüketicilerin tekrar tekrar satın almalarını sağlayan, hakkında tüketicilerde pozitif izlenimler oluşturan kavrama marka aşkı denir. Diğer bir ifadeyle tüketicilerin markalara duygusal yönden kendilerini yakın hissedip bağlanmalarını sağlayan durum markalara duyulan aşkla izah edilmektedir. Son yıllarda özellikle tüketici davranışları alanında yoğun bir şekilde ele alınan marka aşkı; bir markayı veya ürünü kullanmak suretiyle tatmin olan bir tüketicinin sahip olduğu tutkulu duygusal bağlılığın derecesi şeklinde tanımlanmaktadır (Carroll ve Ahuvia, 2006: 81). Marka aşkı bireyler arası aşk ve bağlılık teorilerini temel almaktadır. Bu bağlamda tüketici ile marka arasındaki ilişkinin bireyler arasındaki aşk ve bağlılıkla benzerlik göstermesi birtakım araştırmacıları bireyler arası aşk teorilerini tüketici araştırmalarına adapte etmeye yönlendirmiştir (Garg ve diğ., 2016: 136).

Samimiyet, tutku ve karar/bağlılık boyutlarından oluşan Stenberg'in (1986) Üçgen Aşk Teorisi bireyler arası aşk ile ilgili yapılmış en önemli kuramlardan birisidir. Üçgen Aşk Teorisini esas alarak tüketici ile tüketim nesnesi arasındaki ilişkinin incelendiği çalışmalarında Shimp ve Madden (1988), tüketicilerin tüketim nesnelerine yönelik hislerini ve aşk duygularını inceleyerek aşk kavramını pazarlama disiplinine dâhil etmişlerdir. Söz konusu çalışmada tüketici ile tüketim nesnesi arasındaki bağlantı beğenme, özlem ve karar/bağlılık boyutları olmak üzere üçe ayrılmıştır. İlişkinin beğenme boyutu; bağlılık ve düşkünlük gibi duyguları ifade ederken (örneğin; bir çocuğun sevdiği oyuncak bebekten ayrılmaması), özlem boyutu; tüketicinin nesneye sahip olmaya yönelik güçlü ve kuvvetli arzusunu (örneğin; bireyin özel bir spor arabaya sahip olma arzusu) ifade etmektedir. İlişkinin karar boyutunda; tüketicinin kısa dönemde markanın ya da tüketim nesnesinin özelliklerinin/yararlarının tüketicinin beklentilerine dönük olmasından dolayı belli bir malı, hizmeti ya da markaya karşı sevgi duyması söz konusuyken bağlılık boyutunda ise tüketicilerin tüketim nesnelerine duydukları sevginin sürekliliği söz konusudur (Shimp ve Madden, 1988: 164-165).

Ahuvia (1993) çalışmasında bireylerin aşk duydukları nesnelere karşı yoğun duygular hissettiğini ve aşk duyulan nesnenin ise kişiden kişiye göre değişkenlik gösterdiğini ifade etmektedir. Fournier (1998) çalışmasında ise tüketicilerin markalarla kurdukları uzun süreli ilişkilerde markalara duyulan aşkın önemini incelemiştir. Marka ve aşk içerikli çalışmalar ele alındığında, tatminkâr bireylerin belirli bir markaya karşı duydukları hisleri belirtmek üzere literatürde marka aşkı adıyla yeni bir olgu ortaya çıkmıştır. Marka aşkı kavramının temelinde, bireylerin markalar hakkında hissettiklerini nicel olarak ölçmek ve tatminkâr bireylerin markaya karşı hislerindeki farklılıkları net bir şekilde ortaya çıkarma düşüncesi yer almaktadır (Carroll ve Ahuvia, 2006: 80-81).

## 2.3. Marka Deneyimi

Marka deneyimi kavramının pazarlama çabalarında gittikçe önemli bir yer edinmesi ile birlikte pazarlamacılar, marka deneyiminin gelişen pazarlama stratejilerinin etkinliği açısından oldukça kritik bir öneme sahip olduğunu fark etmeye başlamışlardır (Brakus ve diğ., 2009: 52). Marka deneyimi; müşterinin pazarda karşılaştığı ürünün kendisi, logosu, ismi, ambalajı, broşürü ve reklamı ile yaşadığı tecrübeleri kapsayan stratejik unsurlardır (Schmitt, 2003: 117). Marka deneyiminin temelinde deneyimsel pazarlama ve onun uygulamaları yer almaktadır. Marka deneyimi, marka ile ilgili bütünsel bir değerlendirme olup (Khan ve Rahman, 2015: 61) markaya yönelik duygusal uyarıcılarla karşılaşma anında bu uyarıcılara verilen yanıt olarak ortaya çıkmaktadır (Chang ve Chieng, 2006: 931).

Müşteriler marka deneyimini ürüne temas ettiklerinde, ürünle karşılaştıkları an hissettiklerinde, herhangi bir kitle iletişim aracında gördüklerinde veya mağaza tasarımında yaşamaktadırlar. Kısacası bir markanın herhangi bir etkinliğine katılmak, reklamlarıyla karşılaşmak, logosunu veya ismini duymak, o markayı daha önceden kullanmış kişilerden olumlu veya olumsuz fikirler almak gibi tüm olaylar o marka ile deneyim yaşanması ile sonuçlanmaktadır (Brakus ve diğ., 2009: 53). Marka deneyimi bireysel ve ortak deneyimler olmak üzere iki kategoriye ayrılmaktadır. Duyusal, duygusal ve düşünsel deneyimler bireysel deneyimler olarak kabul edilirken; davranışsal ve ilişkisel deneyimler ise ortak deneyimler olarak kabul edilmektedir (Chang ve Chieng, 2006: 931).

*Duyusal Marka Deneyimi;* Duyusal marka deneyimi; beş duyu organı yardımıyla bireylerin zihninde oluşmaktadır (Dirsehan 2010: 33). Marka, bireylerde ne kadar fazla duyu organına hitap eder ve güçlü bir duyusal uyum sağlarsa, bireylerde o kadar fazla ilgi yaratmaktadır. Bu durumun temelinde her duyunun bir diğeriyle içsel bir bağının olması yer almaktadır. Bir başka ifadeyle marka ile beş duyu arasında anlamlı ve güçlü bir sinerji yaratılabilirse, markanın da bireylere yaşatacağı deneyim o kadar çekici ve etkili olmaktadır (Schmitt ve Rogers, 2008: 209).

*Duyusal Marka Deneyimi;* Duyusal marka deneyimi; markaya yönelik hafif duygulardan güçlü duygulara kadar farklılık barındıran, bireylerin özel hislerine ve duygularına yönelik deneyimlerdir (Konuk, 2014: 40). Bireyler satın alma davranışı sergilerken ürün ya da marka ile ilgili duygularına bağlı olarak tercihlerde bulunmaktadır. Bu nedenle duyguların ve duygularla birlikte yaşanan deneyimlerin markalama için önemli olduğu bilinmektedir (Batı, 2013: 115). Duyusal deneyimler bireylerin anılarında ve fantezilerinde yer alarak marka hakkında olumlu duygular oluşturmalarına yardımcı olmaktadır (Beckman ve diğ.,



2014: 648). Bu nedenle işletmeler pozitif duygular ortaya koyan iyi bir pazarlama stratejisi sayesinde müşterileriyle uzun süreli ve güçlü bir marka sadakati sağlayabilmektedirler (Konuk, 2014: 40).

*Düşünsel Marka Deneyimi;* Düşünsel marka deneyimi; bireylerde ilgi ve merak uyandırarak bilişsel problem çözme deneyimleridir. Akla hitap eden bu deneyim marka, ürün ve işletmelerin tekrar değerlendirilebilmesi için bireyleri etrafıca düşünmeye yönlendirmektedir. Bu nedenle başarılı bir düşünsel deneyimin unsurlarını; görsel, sözel veya zihinsel olarak bireylerin talep ettiklerinden fazlasını, umut ettiklerinden daha iyisini sunarak şaşkınlık yaratıp ilgilerinin çekilmesi oluşturmaktadır (Schmitt, 1999: 61).

*Davranışsal Marka Deneyimi;* Davranışsal marka deneyimi; bireylerin yaşam biçimlerini, fiziksel olarak yaşadıkları deneyimleri ve diğer bireylerle olan iletişim biçimlerini etkilemektedir (Schmitt, 1999: 62). Davranışsal marka deneyimleri sayesinde işletmeler bireylere yaşamlarını zenginleştirecek eşsiz deneyimler sunmaktadırlar (Beckman ve diğ., 2014: 648).

*İlişkisel Marka Deneyimi;* İlişkisel marka deneyimi; yukarıda bahsedilen marka deneyimlerinin sonucu oluşan ve deneyim vasıtasıyla birey ve marka arasında bağlantı kurmaya odaklı bir stratejidir. Bireyin; içinde bulunduğu sosyal sınıf, ait olduğu sosyal kimlik, marka ile kurdukları iletişim, ortaya çıkardığı sosyal etki, ideal rol modelleri, mensubu olduğu gruplar ve sahip olduğu kültürel unsurları ilişkisel marka deneyiminin oluşmasında önem arz etmektedir (Schmitt, 2010: 69).

## 2.4. Marka Sadakati

Marka sadakati; tüketiciler tarafından tercih edilen bir markanın ürünlerini satın alan, markadan vazgeçmeye sebebiyet verecek koşullar ve rakiplerin sergilemiş oldukları pazarlama çabalarına rağmen aynı markanın ürünlerinin yine tüketiciler tarafından gelecekte de sürekli olarak satın alınacağını veya tekrar tüketicisi olunacağını sözüdür (Oliver, 1999: 34). Diğer bir ifadeyle marka sadakati; tüketicinin bir markaya duyduğu bağlılığının bir göstergesi olup markanın fiyatında veya ürünün niteliklerinde olası bir değişiklik yapılması durumunda tüketicinin başka markaları tercih etmesinin ne kadar olası olduğunu yansıtan bir kavramdır (Aaker, 2009: 58). Fitzgibbon ve White (2004: 215) ise marka sadakatini; bir mal veya hizmete karşı sergilenen olumlu bir tutum ve o mal veya hizmetin tutarlı bir şekilde satın alınması olarak tanımlamışlardır.

Marka sadakati işletmelere rekabet avantajı sağladığı için oldukça önemlidir. Değişen dünya ile birlikte günümüzde işletmeler özellikle fiyat bazlı rekabetin yaşandığı pazarlarda kendi markalarını satın alan sadık tüketici profilleri oluşturmayı amaçlamaktadır. Marka sadakati, markanın gün geçtikçe artan öneminin en temel nedenleri arasında yer almaktadır. Bu sebeple işletmeler, tüketicilerde kendi markalarına yönelik sadakat yaratmak için çok ciddi yatırımlar yapmaktadırlar (Onan, 2006: 98). Marka sadakatinin ölçülmesi işletmelere büyük katkılar sağladığı için oldukça önem ifade etmektedir (Ha, 1998: 51). Marka sadakatini doğru ölçebilen işletmeler hem bakış açılarını genişletmekte hem de sadakati karlılıkla ilişkilendirebilmektedir. Bu nedenle işletmeler müşterileriyle daha fazla bağlantı kurmaya çalışmalı ve müşterilerinin ihtiyaçlarını karşılayabilmelidirler (Schoenbachler ve diğ., 2004: 488). Algharabat (2017) yaptığı çalışmada marka sadakati üzerinde marka aşkının etkisi olduğu sonucuna ulaşmıştır. Marka sadakati kavramı ile ilgili yapılan çalışmalar incelendiğinde, sadakat ölçümlerinde davranışsal ve tutumsal olmak üzere iki tür yaklaşımın olduğu görülmüştür.

*Davranışsal Sadakat Yaklaşımı;* Davranışsal sadakat; müşterilerin satın alma davranışları, alışkanlıkları ve müşterilerin işletmenin aynı markalı ürünlerinin geçmişe dönük satın alma davranışlarının hesaplanmasıyla ifade edilir (Mascarenhas ve diğ., 2006: 399). Davranışsal sadakat yaklaşımının en önemli avantajı, niyet ve beklentilerin yerine gerçek verilere dayanmasıdır. Bu sayede verilerden oluşan gözlemlenebilir davranışların ölçümü tutumsal sadakat yaklaşımına göre son derece kolay ve ucuz olacaktır (Brink ve diğ., 2006: 17).

*Tutumsal Sadakat Yaklaşımı;* Tutum; bireylerin aile, arkadaş çevresi ve sosyal çevrelerinde araştırma yapıp bilgi edindikten veya deneyim elde ettikten sonra zaman içerisinde ortaya çıkardıkları veya geliştirdikleri bir davranıştır (Fandos ve Flavian, 2006: 650). Tutumsal sadakat ise tüketicinin markaya yönelik olumlu duygular besleyip marka ile ilişkisini sürdürmesiyle veya bir tercih söz konusu olduğunda aynı markayı seçmesiyle açıklanmaktadır (Mascarenhas ve diğ., 2006: 399). Tutumsal marka sadakati belirli bir markanın kendisine özgü değerleri olduğunu ve bu değerlerin ise sadakati kuvvetlendirdiğini ifade etmektedir (Chaudhuri ve Holbrook, 2001: 82).

### 3. METODOLOJİ

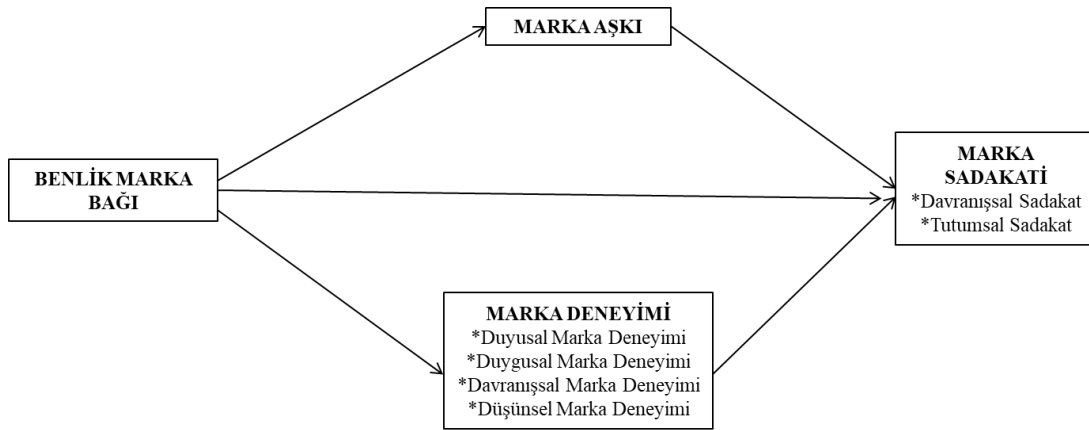
#### 3.1. Araştırmanın Amacı, Kapsamı ve Kısıtları

Bu araştırmanın amacı; tüketicinin kimliğini oluşturan ve bu kimlikle uyum sağlayan unsurların mal veya hizmetin tutarlı bir şekilde satın alınması üzerindeki etkisinde markalara duygusal yönden kendilerini yakın hissetmelerinin ve yaşadıkları tecrübelerin aracılık rolünü araştırmaktır. Araştırma yüz yüze anket uygulaması yöntemiyle Erzincan merkez ilçede 18 yaş ve üstü cep telefonu kullandığını ve genellikle belirli bir markayı tercih ettiğini ifade eden 384 üniversite öğrencisinin katılımıyla gerçekleştirilmiştir. 384 kişiye uygulanan anketin hatalı ve eksik cevapları elendikten sonra 300 adet anket formu değerlendirmeye tabi tutulmuştur. Elde edilen sonuçlar bu örneklem için geçerli olup, diğer ürün grupları, markalar ve şehirler için genellenemez.

#### 3.2. Araştırmanın Modeli ve Hipotezler

İlgili teoriden hareketle araştırmanın kapsamına; benlik-marka bağı, marka sadakati, marka aşkı ve marka deneyimi değişkenleri dâhil edilmiştir. Bu değişkenler arasındaki ilişkiler ise kuramsal bilgiler ışığında kurgulanmış olup bu doğrultuda araştırma modeli ve hipotezleri geliştirilmiştir.

Şekil 1: Araştırmanın Modeli



Araştırmanın amacı ve modeli doğrultusunda test edilmek üzere aşağıdaki hipotezler geliştirilmiştir:

H<sub>1</sub>: Benlik-marka bağının marka aşkı üzerinde etkisi vardır.

H<sub>2</sub>: Benlik-marka bağının marka deneyimi üzerinde etkisi vardır.

H<sub>3</sub>: Benlik-marka bağının marka sadakati üzerinde etkisi vardır.

H<sub>4</sub>: Marka aşkının, benlik-marka bağı ile marka sadakati arasında aracılık etkisi vardır.

H<sub>5</sub>: Marka deneyiminin, benlik-marka bağı ile marka sadakati arasında aracılık etkisi vardır.

H<sub>6</sub>: Marka aşkının marka sadakati üzerinde etkisi vardır.

H<sub>7</sub>: Marka deneyiminin marka sadakati üzerinde etkisi vardır.

#### 3.3. Veri Toplama Yöntem ve Süreci

Araştırmanın ana kütlesini Erzincan'da yaşayan 18 yaş ve üzeri üniversite öğrencileri oluşturmaktadır. Araştırma verileri yüz yüze anket yöntemi kullanılarak elde edilmiştir. Örneklem yöntemi olarak, kolayda örnekleme yöntemi kullanılmıştır.

Anket formunda yer alan sorular dört farklı gruptan oluşmaktadır. Birinci grupta yer alan sorular kullanıcıların tercih ettikleri cep telefonu markasına yönelik benlik-marka bağını belirlemek amacıyla sorulmuş olup Escalas ve Bettman (2003) tarafından yapılan çalışmadan faydalanılmıştır. İkinci grupta yer alan sorular kullanıcıların tercih ettikleri cep telefonu markasına yönelik marka aşklarını belirlemek amacıyla sorulmuş olup Carroll ve Ahuvia (2006) çalışmasından yararlanılarak hazırlanmıştır. Üçüncü grupta

yer alan sorular kullanıcıların tercih ettikleri cep telefonu markasına yönelik marka deneyimlerini belirlemek amacıyla sorulmuş olup Brakus ve diğ. (2009) tarafından geliştirilen ölçekten faydalanılmıştır. Dördüncü grupta yer alan sorular ise kullanıcıların tercih ettikleri cep telefonu markasına yönelik marka sadakatlerini belirlemek amacıyla sorulmuş olup Chaudhuri ve Holbrook (2001) ile Kumari ve Patyal (2017) çalışmalarından alınmıştır. Anketin son bölümünde ise demografik özellikler ile ilgili sorular yer almaktadır.

Ölçekler çevrilirken dil uzmanlarına başvurulmuş olup, anket sorularının çevrilmesinde ortaya çıkabilecek olan yanlışlıkları ortadan kaldırmak amacıyla ölçeklerin çevirisi yaptırılmıştır. Ölçeklerin çevirisi yapıldıktan sonra 20 kişilik bir örnekleme ön çalışma uygulanmış ve ankete son şekli verilmiştir. Anket çalışması 03.12.2018 -21.12.2018 tarihleri arasında yapılmıştır. Kesin anket formu düzenlendikten sonra 384 kişiye anket uygulanmış yanlış ve eksik doldurulan anketler elendikten sonra 300 anket formu değerlendirmeye alınmıştır. Veriler SPSS 22.0 paket programında analiz edilmiştir. Verilere; tanımlayıcı istatistikler, güvenilirlik analizi ile regresyon analizi uygulanmıştır.

#### 4. ARAŞTIRMA BULGULARI

##### 4.1. Demografik Özellikler

Araştırmaya katılanların demografik özelliklerine ilişkin bilgiler şu şekildedir: Katılımcıların %56'sı erkek ve %44'ü kadındır. Katılımcıların yaş gruplarına göre dağılımlarında; çoğunluğu %83 ile 18-24 yaş grubu oluşturmaktadır. Katılımcıların genel olarak %61 ile 1000 TL ve altı gelire sahip oldukları görülmektedir.

##### 4.2. Ölçeklere İlişkin Güvenilirlik Analizi

Cronbach's Alpha değeri sorular arasındaki korelasyona ilişkin uyumdur. Katsayıların yorumunda ise Cronbach's Alpha değerinin 0,70 ve üstü olması durumunda ölçeğin güvenilir olduğu kabul edilir. Fakat soru sayısının az olduğu durumda bu sınır 0,60 değeri ve üstü olarak kabul edilebilir (Durmuş vd., 2013: 89).

**Tablo 1: Güvenilirlik Sonuçları**

Değişkenler	Cronbach's Alpha Değeri
Benlik-marka Bağı	0,91
Marka Aşkı	0,92
Marka Deneyimi	0,91
Marka Sadakati	0,96

Tablo 1'e bakıldığında ölçeklerin güvenilir olduğu görülmektedir.

##### 4.3. Regresyon Analizi Sonuçları

Benlik-marka bağının marka aşkı, marka deneyimi ve marka sadakati üzerindeki etkisinin belirlenmesi amacıyla doğrusal regresyon analizi yapılmıştır. Sonuçlar Tablo 2, Tablo 3 ve Tablo 4'te gösterilmiştir.

**Tablo 2: Marka Aşkı Üzerinde Benlik-Marka Bağının Etkisi**

Bağımlı Değişken: Marka Aşkı	R	R <sup>2</sup>	Düzeltilmiş R <sup>2</sup> Kare
Bağımsız Değişken: Benlik-Marka Bağı	0,80	0,64	0,64
ANOVA Değerleri	Kareler Toplamı	Serbestlik Derecesi	Ortalama Kare
Regresyon	199,122	1	199,122
Artıklar	111,838	298	0,305
Toplam	310,960	299	
B=0,661    β=0,800    Std. Hata=0,029    F=530,576    t=23,034    p=0,000			

Tablo 2'de görüldüğü gibi oluşturulan regresyon modeli %5 önem düzeyinde istatistikî açıdan anlamlıdır ve R<sup>2</sup> değeri 0,64 olarak bulunmuştur. Modelde yer alan benlik-marka bağı marka aşkını etkilemektedir (β =0,800: p=0,000<0,05). Bu sonuç ışığında H<sub>1</sub> hipotezi kabul edilmiştir. Bireyin benliğiyle uyumlu gördüğü markalara yönelik duygusal yakınlık hissettiğini söylemek mümkündür.

**Tablo 3: Marka Deneyimi Üzerinde Benlik-Marka Bağının Etkisi**

Bağımlı Değişken: Marka Deneyimi Bağımsız Değişken: Benlik-marka Bağı	R	R <sup>2</sup>	Düzeltilmiş R <sup>2</sup> Kare
	0,79	0,62	0,62
ANOVA Değerleri	Kareler Toplamı	Serbestlik Derecesi	Ortalama Kare
Regresyon	155,534	1	155,534
Artıklar	93,730	297	0,316
Toplam	249,264	298	
B=0,585 $\beta$ =0,790    Std. Hata=0,026    F=492,835    t=22,200    p=0,000			

Tablo 3’de görüldüğü gibi oluşturulan regresyon modeli %5 önem düzeyinde istatistiki açıdan anlamlıdır ve R<sup>2</sup> değeri 0,62 olarak bulunmuştur. Modelde yer alan benlik-marka bağı marka deneyimini etkilemektedir ( $\beta$  =0,790: p=0,000<0,05). Bu sonuç ışığında H<sub>2</sub> hipotezi kabul edilmiştir. Bu doğrultuda insanlar öz kimliğiyle uyumlu gördüğü markalardan daha çok tecrübe kazanabilirler. Çünkü kişinin benliğiyle ilişki kurduğu markanın yaşatacağı deneyimlere vereceği yanıt daha olumlu olacaktır.

**Tablo 4: Marka Sadakati Üzerinde Marka Aşkı, Marka Deneyiminin ve Benlik-Marka Bağı Etkisi**

Bağımlı Değişken: Marka Sadakati Bağımsız Değişken: Marka Aşkı, Marka Deneyimi, Benlik-marka Bağı	R	R <sup>2</sup>	Düzeltilmiş R <sup>2</sup> Kare
	0,88	0,77	0,76
ANOVA Değerleri	Kareler Toplamı	Serbestlik Derecesi	Ortalama Kare
Regresyon	240,150	3	80,050
Artıklar	73,559	296	0,249
Toplam	313,719	299	
Marka Deneyimi; B=0,278 $\beta$ =0,248    Std. Hata=0,071    F=322,077    t=3,892    p=0,000			
Marka Aşkı; B=0,510 $\beta$ =0,508    Std. Hata=0,065    F=322,077    t=7,787    p=0,000			
Benlik-Marka Bağı; B=0,136 $\beta$ =0,163    Std. Hata=0,041    F=322,007    t=3,337    p=0,000			

Tablo 4’de görüldüğü gibi oluşturulan çoklu regresyon modeli %5 önem düzeyinde istatistikî açıdan anlamlıdır ve R<sup>2</sup> değeri 0,77 olarak bulunmuştur. Modelde yer alan marka deneyimi, marka aşkı ve benlik-marka bağı marka sadakatini etkilemektedir ( $\beta$  =0,248,  $\beta$  =0,508,  $\beta$  =0,163; p=0,000<0,05). Bu sonuçlar ışığında H<sub>6</sub>, H<sub>7</sub> ve H<sub>3</sub> hipotezleri kabul edilmiştir. Bu bağlamda markanın tekrar tekrar satın alınması veya müşterinin markaya kendini adanması için duygusal bir yakınlık kurulması, kişinin öz varlığıyla ahenk içerisinde olması ve markayla yaşadığı anıları hatırlaması önemlidir.

#### 4.4. Aracılık Etkisi Analizleri

Aracı değişken; iki değişken arasındaki sebep-sonuç ilişkisinin bir parçasıdır (McKinnon ve diğ., 2010: 594). Ayrıca araştırmalarda aracılık etkisi araştırılırken Baron ve Kenny (1986) tarafından önerilen aracı değişken analizi yöntemi kullanılmıştır. Analize göre bağımsız değişkenin aracı değişkenin üzerinde etkisi olmalıdır. Ayrıca bağımlı değişken üzerinde bağımsız değişkenin etkisi olmalıdır. Son olarak ise aracı değişken analize dâhil edildiğinde bağımsız değişken ve bağımlı değişken arasındaki ilişkide azalma meydana gelmeli veya aradaki ilişki anlamsızlaşmalıdır (Baron ve Kenny, 1986: 1173).

Araştırma modelinde aracı değişken olarak yer alan marka aşkı değişkeninin benlik-marka bağı ile marka sadakati değişkenleri arasında aracılık etkisinin olup olmadığı regresyon analizi ile incelenmiştir. Tablo 5’de benlik-marka bağı ile marka sadakati arasında marka aşkının aracılık etkisi analizinin sonuçları gösterilmiştir.

**Tablo 5: Benlik-Marka Bağı ile Marka Sadakati Arasında Marka Aşkının Aracılık Etkisi**

Adımlar	B	Std. Hata	$\beta$	t	R <sup>2</sup>	Düz. R <sup>2</sup>	F	p
<b>1.Adım:</b> Benlik-marka Bağı Marka Aşkı	0,661	0,029	0,800	23,034	0,640	0,639	530,576	0,000
<b>2.Adım:</b> Benlik-marka Bağı Marka Sadakati	0,635	0,031	0,765	20,506	0,585	0,584	420,504	0,000
<b>3.Adım:</b> Benlik-marka Bağı Marka Aşkı Marka Sadakati	0,177	0,040	0,214	4,455	0,755	0,754	456,909	0,000
	0,693	0,048	0,688	14,340				
Tolerans=0,359 VIF=2,788 p=0,000								

Tablo 5’de görüldüğü üzere, birinci adımda benlik-marka bağıının marka aşkı üzerinde istatistiksel olarak anlamlı bir etkisi vardır ( $\beta=0,800$ ;  $p=0,000$ ). İkinci adımda, benlik-marka bağı ile marka sadakati arasında istatistiksel olarak anlamlı bir etki tespit edilmiştir ( $\beta=0,765$ ;  $p=0,000$ ). Son olarak üçüncü adımda, benlik-marka bağı ve marka sadakati ile marka aşkı (aracı değişken) modele dâhil edilmiş ve sonucun istatistiksel olarak anlamlı olduğu saptanmıştır ( $\beta=0,214$ ;  $p=0,000$ ). İkinci adımla karşılaştırıldığında üçüncü adımın Beta ( $\beta$ ) değerinde azalma olduğu görülmektedir. Beta değerindeki azalmanın anlamlı olup olmadığının tespit edilmesi için Sobel Testi yapılmıştır. Sobel Testi neticesinde üçüncü adımın Beta değerindeki düşüşün istatistiksel olarak anlamlı olduğu görülmüştür ( $Z=12,719$ ;  $p=0,000$ ). Son olarak üçüncü adımda analize dâhil edilen bağımsız değişkenler arasında çoklu doğrusallık (multicollinearity) olmadığı belirlenmiştir (Tolerans=0,359>0,2; VIF=2,788<5). Bu sonuçlar doğrultusunda, benlik-marka bağı ile marka sadakati arasında marka aşkının aracılık etkisinin olduğu belirlenmiş ve  $H_4$  hipotezi kabul edilmiştir. Bireyin kimliğiyle uyumlu olan markaya duyduğu bağlılığa duygularının da etki ettiği görülmektedir.

Araştırma modelinde aracı değişken olarak yer alan marka deneyimi değişkeninin benlik-marka bağı ile marka sadakati değişkenleri arasında aracılık etkisinin olup olmadığı regresyon analizi ile incelenmiştir. Tablo 6’da benlik-marka bağı ile marka sadakati arasında marka deneyiminin aracılık etkisi analizinin sonuçları gösterilmiştir.

**Tablo 6: Benlik-Marka Bağı ile Marka Sadakati Arasında Marka Deneyiminin Aracılık Etkisi**

Adımlar	B	Std. Hata	$\beta$	t	R <sup>2</sup>	Düz. R <sup>2</sup>	F	p
<b>1.Adım:</b> Benlik-marka Bağı Marka Deneyimi	0,585	0,026	0,790	22,200	0,624	0,623	492,835	0,000
<b>2.Adım:</b> Benlik-marka Bağı Marka Sadakati	0,635	0,031	0,765	20,506	0,585	0,584	420,504	0,000
<b>3.Adım:</b> Benlik-marka Bağı Marka Deneyimi Marka Sadakati	0,239	0,042	0,288	5,746	0,721	0,719	380,415	0,000
	0,674	0,056	0,602	12,001				
Tolerans=0,376 VIF=2,660 p=0,000								

Tablo 6’da görüldüğü üzere, birinci adımda benlik-marka bağıının marka deneyimi üzerinde istatistiksel olarak anlamlı bir etkisi vardır ( $\beta=0,790$ ;  $p=0,000$ ). İkinci adımda, benlik-marka bağı ile marka sadakati arasında istatistiksel olarak anlamlı bir etki tespit

edilmiştir ( $\beta=0,765$ ;  $p=0,000$ ). Son olarak üçüncü adımda, benlik-marka bağı ve marka sadakati ile marka deneyimi (aracı değişken) modele dâhil edilmiş ve sonucun istatistiksel olarak anlamlı olduğu saptanmıştır ( $\beta=0,288$ ;  $p=0,000$ ). İkinci adımla karşılaştırıldığında üçüncü adımın Beta ( $\beta$ ) değerinde azalma olduğu görülmektedir. Beta değerindeki azalmanın anlamlı olup olmadığının tespit edilmesi için Sobel Testi yapılmıştır. Sobel Testi neticesinde üçüncü adımın Beta değerindeki düşüşün istatistiksel olarak anlamlı olduğu görülmüştür ( $Z=10,134$ ;  $p=0,000$ ). Son olarak üçüncü adımda analize dâhil edilen bağımsız değişkenler arasında çoklu doğrusallık (multicollinearity) olmadığı belirlenmiştir (Tolerans= $0,376>0,2$ ; VIF= $2,660<5$ ). Bu sonuçlar doğrultusunda, benlik-marka bağı ile marka sadakati arasında marka deneyiminin aracılık etkisinin olduğu belirlenmiş ve  $H_3$  hipotezi kabul edilmiştir. Bireyin kimliğiyle uyumlu olan markaya duyduğu bağlılığa yaşadığı tecrübeler veya kazandığı deneyimler etki etmektedir.

## 5.SONUÇ VE ÖNERİLER

Rekabetin yoğun olduğu pazarlarda marka bağlılığı yaratabilmek firmaya uzun vadede karlılık ve stratejik avantaj sağlamaktadır. Özellikle teknolojinin hızlı gelişmesiyle ürünler arasındaki farklılıkların ortadan kalkması, firmaların marka sadakati oluşturacak unsurları doğru tespit etmesini gerekli kılmaktadır. Çalışma kapsamında cep telefonu sektöründeki firmaların diğer işletmelerden kendini ayırt etmesini sağlayacak bir diğer ifadeyle marka sadakati oluşturabilecek öğeler araştırılmıştır. Marka sadakatini etkileyen unsurlar olarak; benlik-marka bağı, marka aşkı ve marka deneyimi ele alınmıştır. Elde edilen bulgulardan şu sonuçlara ulaşılmıştır:

Benlik-marka bağının marka aşkı ve marka deneyimi üzerinde anlamlı etkisi bulunmaktadır (Van der Westhuizen, 2018; Hwang ve Kandampully, 2012). Benlik-marka bağının marka aşkı üzerindeki etkisi ele alındığında bireyi tam olarak anlayan veya tanıyan firmalar müşteri ile marka arasında güçlü duygular yaratabilirler. Çünkü birey benliğiyle, duygularıyla ve markaya duyduğu aşkla bir bütündür. Dolayısıyla marka bireyi ne kadar yansıtırsa müşteri o kadar marka için tutkulu duygular hissedecektir. Benlik-marka bağının marka deneyimi üzerindeki etkisi incelendiğinde ise kendisiyle uyumlu olan markaları tercih eden müşterilerin o markayı bütünüyle daha çok sahiplendiği gözlenmektedir. Markanın bireyin benliğine uygun olması müşterilerin yaşayacağı deneyimi etkilemektedir. Bu bulgular doğrultusunda firmalara şu önerilerde bulunulabilir; müşteriler yakından tanınmalı, özel ilgi alanları ve istekleri belirlenmeye çalışılmalı, bu konuda teknolojinin sunduğu fırsatlardan yararlanılmalıdır. Sosyal medya hesapları firmalar tarafından aktif kullanılmalıdır. Ayrıca bu mecraayı fırsata çevirmek için tüketicilerin ilgi alanları dikkatlice incelenmelidir. Mobil iletişim araçları ise firmaların tüketicilerin düşüncelerini öğrenmek için kullanılabilecekleri diğer bir alandır.

Marka sadakati üzerinde marka aşkının, benlik-marka bağı ve marka deneyiminin etkisi olduğu görülmüştür (Van der Westhuizen, 2018; Hemsley-Brown ve Alnawas, 2016; Lin ve diğ., 2017; Huang, 2017; Hwang ve Kandampully, 2012). Marka aşkının marka sadakati üzerinde etkili olması ele alındığında tüketicilerin duygusal tercihleri marka bağlılıklarını etkilemektedir. Bu sayede marka ve birey arasında yoğun duygular yaratabilen firmalar markaya yönelik sadakat oluşturabilirler. Duygusal yarar sağlayarak marka bağı oluşturan firmalar tüketicinin yaşadığı hazdan uzun vadeli karlılık olarak geri dönüş alabilirler. Marka sadakati üzerinde etkili olan diğer bir değişkenimiz ise benlik-marka bağıdır. Bireyin marka sadakati göstermesi için markada kendinden bir şeyler bulması, markanın bireyi yansıtması gerekir. Benliklerinden izler taşıyan markaları tercih eden müşteriler bu markalarla uzun vadeli ilişkiler kurmaya gönüllü olacaklardır. Marka deneyimi ise marka sadakati üzerinde etkili olan diğer bir değişkenimizdir. Markayla olumlu deneyim yaşayan müşterilerin yaşadığı pozitif duygular onları memnun edecek ve hatta sadık bir müşteri olmalarında önemli katkı sağlayacaktır. Benliğin, aşkın, deneyimin sadakat üzerindeki etkisinden yola çıkarak firmalara şu önerilerde bulunulabilir; görülmektedir ki müşteriler duygusal yaklaşımlara önem vermektedirler. Firmalar somut özelliklerden ziyade duygulara yönelmelidirler. Reklamlarda ürünün rengi, logosu ve tasarımına daha estetik özellikler katılmalıdır. Benlik kavramıyla anlatılmak istenen ise müşterinin öz kimliğidir. Bu yüzden bireyin markayı tercih etme sebebi belirlenip ona göre tanıtımlar yapılmalıdır. Örneğin gösterişi tüketim veya statü kazanmak için tercih edilen bir marka için fiyat olgusundan ziyade kullanımdan doğacak statü kazanımı vurgulanmalıdır. Ayrıca markanın kendine has özellikleri olmalı, bu bazen renk bazen bir logo veya tasarım olabilir. Kimi zaman ise bireyin markayla benlik bağı kurmasının ardında markanın hikâyesi karşımıza çıkabilir. Benzer şekilde bireyin duygularına ve deneyimlere hitap etmede çalışanlar da önemli rol oynamaktadır. Çalışanların markanın savunucu olması ve müşterinin olumlu anılar yaşamasına katkıda bulunması gerekir. Marka deneyimi boyutlarından düşünsel yaklaşım ise sadakatin oluşması için akla veya zihne hitap etmenin göz ardı edilmemesi gerektiğini gösterir. Böyle bir durumda ise tüketicinin ihtiyacının marka tarafından karşılanıp karşılanmadığı sorgulanır. Firmanın yapması gereken ise ihtiyaçları tam olarak belirlemekle yetinmeyip karşılanmamış ihtiyaçları ve müşterinin şikâyetlerini çözüme ulaştırmaktır. Bu yüzden firmalar markalarına tutkun müşteriler yaratmak isterken markanın çağrışımlarına dikkat etmelidirler. Günümüzde özellikle çevreye duyarlı markalar müşteri nezdinde daha olumlu algılanmaktadır. Cep telefonu sektörü açısından düşünüldüğünde geri dönüşüme katkı sağlanabilir. Firmalar üretim süreçlerinde doğayı düşünerek faaliyet gösterebilir. Zihinlerde yer edinebilmek için maskotlar kullanabilir. Bu sayede marka hem duyguları harekete geçirir hem de daha cezbedici bir hal alır.

Çalışmanın asıl amacını oluşturan aracılık etkisine ilişkin bulgular ise marka aşkı ve marka deneyiminin benlik-marka bağı ve marka sadakati arasında aracılık etkisine sahip olmasıdır (Van der Westhuizen, 2018; Aydın, 2017). Müşterinin benliğiyle marka arasında ilişki kurması veya markanın tüketicinin benliğini yansıtımıyla yaşanan marka aşkı marka sadakati üzerindeki etkiyi arttıracaktır. Benliğiyle marka arasında bağlantı olan bireylerin, marka aşkı yaşamakta ve gelişen marka aşkı sonucunda marka sadakati duymaktadırlar. Ayrıca marka deneyiminin aracılık etkisi ele alındığında ise; müşterinin benliğiyle marka arasında ilişki kurması veya markanın tüketiciyi yansıtımıyla yaşanan marka deneyimi marka sadakati üzerindeki etkiyi arttıracaktır. Benliğiyle marka arasında bağlantı olan bireyler, marka deneyimi yaşamakta ve gelişen marka deneyimi sonucunda marka sadakati duymaktadırlar. Bu sonuçlar ışığında firmalar marka sadakati oluşturmada tüketiciyi yansıtan, onu doğru şekilde tanımlayan özelliklerin üzerinde durmanın yanı sıra aşk ve deneyim unsurlarını da dikkate alarak bağlılık düzeyini etkileyebilirler. Bu sonuçlar göstermedik ki insanların psikolojik yapısı bir bütün içerisinde. Bireyin içsel yapısını içeren benliği ile yaşadığı duygularının örtüşmesi bağlılıklarını etkilemektedir.

## REFERENCES

- Aaker, D. A. (2009). Marka Değeri Yönetimi: Bir Marka İsminin Değerinden Yararlanmak. İstanbul: MediaCat Kitapları.
- Ahuvia, A. C. (1993). I Love It! Towards a Unifying Theory of Love Across Diverse Love Objects. (Yayınlanmamış Doktora Tezi), USA: Michigan University.
- Aguirre-Rodriguez, A., Bosnjak, M., Sirgy, M. J. (2012). Moderators of the Self-Congruity Effect on Consumer Decision-Making: A Meta-Analysis. Journal of Business Research, 65(8), 1179-1188.
- Algharabat, R. S. (2017). Linking Social Media Marketing Activities With Brand Love: The Mediating Role of Self-Expressive Brands. Kybernetes, 46(10), 1801-1819.
- Alnawas, I., Altarifi, S. (2016). Exploring The Role of Brand Identification and Brand Love in Generating Higher Levels of Brand Loyalty. Journal of Vacation Marketing, 22(2), 111-128.
- Aydın, H. (2017). Marka Güveni, Farkındalığı ve Benlik İmaj Uyumunun Marka Bağlılığına Etkisinde Marka Aşkının Aracılık Rolü, Ege Academic Review, 17(2), 281-294.
- Baron, R. M., Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. Journal of Personality and Social Psychology, 51 (6), 1173-1182.
- Batı, U. (2013). Markethink ya da Farkethink "Deneyimsel Pazarlama ve Duyusal Markalama". İstanbul: Destek Yayınları.
- Beckman, E., Kumar, A., Kim, Y. K. (2014). The Impact of Brand Experience on Downtown Success. Journal of Travel Research, 52, 646-658.
- Brakus, J. J., Schmitt, B. H., Zarantonello, L. (2009). Brand Experience: What is It? How is It Measured? Does It Affect Loyalty?. Journal of Marketing, 73, 52- 68.
- Brink, D. V., Gaby, O. S., Pieter, P. (2006). The Effect of Strategic and Tactical Cause-Related Marketing on Consumers' Brand Loyalty. Journal of Consumer Marketing, 23(1), 15-25.
- Carroll, B. A., Ahuvia, A. C. (2006). Some Antecedents and Outcomes of Brand Love. Marketing Letters, 17(2), 79-89.
- Chang, P. L., Chieng, M. H. (2006). Building Consumer-Brand Relationship: A Cross Cultural Experiential View. Psychology and Marketing, 23(11), 927-959.
- Chaudhuri, A., Holbrook, M. (2001). The Chain Of Effects From Brand Trust and Brand Affect to Brand Performance. Journal of Marketing, 65(2), 81-93.
- Dirsehan, T. (2010). Örneklerle Temel Deneyimsel Pazarlama, İstanbul: İkinci Adam Yayınları.
- Durmuş, B., Yurtkoru, E.S., Çinko, M. (2013). Sosyal Bilimlerde SPSS'le Veri Analizi. İstanbul: Beta Yayınları.
- Eelen, J., Özturan, P., Verlegh, P. W. (2017). The Differential Impact of Brand Loyalty on Traditional and Online Word of Mouth: The Moderating Roles of Self-Brand Connection and The Desire to Help The Brand. International Journal of Research in Marketing, 34(4), 872-891.
- Erciş, A., Yıldız, T., Türk, B. (2017). The Influence of Customer Value, Brand Trust, and Self Congruity in Creating Emotional Brand Attachment. [Bildiri], 7th International Conference on Leadership, Technology, Innovation and Business Management (ICLTIBM-2017). Marmaris.
- Escalas, J. E., Bettmann, J. R. (2003). You Are What They Eat: The Influence of Reference Groups on Consumers' Connections to Brands. Journal of Consumer Psychology, 13(3), 339-348.

- Escalas, J. E. (2004). Narrative Processing: Building Consumer Connections to Brands. *Journal of Consumer Psychology*, 14(1/2), 168-180.
- Escalas, J. E., Bettman, J. R. (2005). Self-Construct, Reference Groups, and Brand Meaning. *Journal of Consumer Research*, 32(3), 378-389.
- Fandos, C., Flavian, C. (2006). Intrinsic and Extrinsic Quality Attributes, Loyalty and Buying Intention: An Analysis for a PDO Product. *British Food Journal*, 108(8), 646-662.
- Ferraro, R., Kirmani, A., Matherly, T. (2013). Look at Me! Look at Me! Conspicuous Brand Usage, Self-Brand Connection and Dilution. *Journal of Marketing Research*, 50(4), 477-488.
- Fitzgibbon, C., White, L. (2004). The Role of Attitudinal Loyalty in The Development of Customer Relationship Management Strategy within Service Firms. *Journal of Financial Services Marketing*, 9(3), 214-230.
- Fournier, S. (1998). Consumers and Their Brands: Developing Relationship Theory in Consumer Research. *Journal of Consumer Research*, 24(4), 343-373.
- Garg, R., Mukherjee, J., Biswas, S., Kataria, A. (2016). An Investigation into the Concept of Brand Love and Its Proximal and Distal Covariates. *Journal of Relationship Marketing*, 15(3), 135- 153.
- Grubb, E. L., Grathwohl, H. L. (1967). Consumer Self-Concept, Symbolism and Market Behavior: A Theoretical Approach. *Journal of Marketing*, 31(4), 22-27.
- Ha, C. L. (1998). The Theory of Reasoned Action Applied to Brand Loyalty. *Journal of Product & Brand Management*, 7, 51-61.
- Hemsley-Brown, J., Alnawas, I. (2016). Service Quality and Brand Loyalty: The Mediation Effect of Brand Passion, Brand Affection and Self-Brand Connection. *International Journal of Contemporary Hospitality Management*, 28(12), 2771-2794.
- Huang, C. C. (2017). The Impacts of Brand Experiences on Brand Loyalty: Mediators of Brand Love and Trust. *Management Decision*, 55(5), 915-934.
- Hussein, A. S. (2018). Effects of Brand Experience on Brand Loyalty in Indonesian Casual Dining Restaurant: Roles of Customer Satisfaction and Brand of Origin. *Tourism and Hospitality Management*, 24(1), 119-132.
- Hwang, J., Kandampully, J. (2012). The Role of Emotional Aspects in Younger Consumer-Brand Relationships. *Journal of Product & Brand Management*, 21(2), 98-108.
- Khan, I., Rahman, Z. (2015). Brand Experience Anatomy in Retailing: An Interpretive Structural Modeling Approach. *Journal of Retailing and Consumer Services*, 24, 60-69.
- Knapp, D. E. (1999). *Brand Mindset: Five Essential Strategies for Building Brand Advantage Throughout Your Company*. New York: McGraw-Hill Companies.
- Konuk, G. (2014). *Deneyimsel Pazarlama*, Ankara: Detay Yayıncılık.
- Kotler, P., Keller, K. L. (2009). *Marketing Management*. 13. Edition. New Jersey: Pearson Education Inc.
- Kumari, N., Patyal, S. (2017). Customer to Customer: Attitudinal and Behavioural Loyalty. *International Journal of Management Studies*, 4(1), 115-121.
- Lee, S. A., Jeong, M. (2014). Enhancing Online Brand Experiences: An Application of Congruity Theory. *International Journal of Hospitality Management*, 40, 49-58.
- Lin, J., Lobo, A., Leckie, C. (2017). The Role of Benefits and Transparency in Shaping Consumers' Green Perceived Value, Self-Brand Connection and Brand Loyalty. *Journal of Retailing and Consumer Services*, 35, 133-141.
- Liu, F., Li, J., Mizerski, D., Soh, H. (2012). Self-Congruity, Brand Attitude, and Brand Loyalty: A Study on Luxury Brands. *European Journal of Marketing*, 46(7/8), 922-937.
- Mascarenhas, O. A., Ram, K., Michael, B. (2006). Lasting Customer Loyalty: A Total Customer Experience Approach. *Journal of Consumer Marketing*, 23(7), 397-405.
- McKinnon, D. P., Fairchild, A. J., Fritz, M. S. (2010). Mediation Analysis. *Annual Review of Psychology*, 58, 593-614.
- Nadiri, H., Günay, G. N. (2013). An Empirical Study to Diagnose the Outcomes of Customers' Experiences in Trendy Coffee Shops. *Journal of Business Economics and Management*, 14(1), 22-53.
- Oliver, R. L. (1999). Whence Consumer Loyalty?. *Journal of Marketing*, 63, 33-44.
- Onan, G. (2006). *Hizmet Sektöründe Marka Sadakati ve TEB Üzerine Bir Uygulama*. (Yayımlanmamış Yüksek Lisans Tezi). İzmir: Dokuz Eylül Üniversitesi.



- Ridgway, J. L. (2011). Brand Personality: Consumer's Perceptions of Color Used in Brand Logos. (Yayınlanmamış Doktora Tezi), COLUMBIA: University of Missouri
- Schmitt, B. H. (1999). Experiential Marketing. *Journal of Marketing Management*, 15(1-3), 53-67.
- Schmitt, B. H. (2003). *Customer Experience Management: A Revolutionary Approach to Connecting with Your Costomer*. New Jersey: John Wiley & Sons.
- Schmitt, B. H., Rogers, D. L. (2008). *Handbook on Brand and Experience Management*. USA: Edward Elgar Publishing Limited.
- Schmitt, B. (2010). Experience Marketing: Concepts, Frameworks and Consumer Insights. *Foundations and Trends in Marketing*, 5(2), 55-112.
- Schoenbachler, D. D., Geoffrey L. G., Timothy W. A. (2004). Building Brand Loyalty Through Individual Stock Ownership. *Journal of Product & Brand Management*, 13, 488-497.
- Shimp, T. A., Madden, T. J. (1988). Consumer-Object Relations: A Conceptual Framework Based Analogously on Sternberg's Triangular Theory of Love. *Advances in Consumer Research*, 15(1), 163-168.
- Sirgy, M. J., Johar, J. S., Samli, A. C., Claiborne, C. B. (1991). Self-Congruity Versus Functional Congruity: Predictors of Consumer Behavior. *Journal of the Academy of Marketing Science*, 19(4), 363-375.
- Stenberg, R. J. (1986). A Triangular Theory of Love. *Psychological Review*, 93(2), 119-135.
- Uşaklı, A., Baloğlu, S. (2011). Brand Personality of Tourist Destinations: An Application of Self-Congruity Theory. *Tourism Management*, 32(1), 114-127.
- Van der Westhuizen, L. M. (2018). Brand Loyalty: Exploring Self-Brand Connection and Brand Experience. *Journal of Product & Brand Management*, 27(2), 172-184.
- Yang, J., Zheng, R., Zhao, L., Gupta, S. (2017). Enhancing Customer Brand Experience and Loyalty Through Enterprise Microblogs: Empirical Evidence from a Communication Framework Perspective. *Information Technology & People*, 30(3), 580-601.
- Zarantonello, L., Schmitt, B. H. (2010). Using the Brand Experience Scale to Profile Consumers and Predict Customer Behavior. *Journal of Brand Management*, 17(7), 532-540.