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TRANSNATIONAL COMPANIES AND RADICAL TRANSFORMATION PROCESSES: A study of performance in comparison to other multinational companies

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TRANSNATIONAL COMPANIES' AND RADICAL TRANSFORMATION
PROCESSES: A STUDY OF PERFORMANCE IN COMPARISON TO OTHER
MULTINATIONAL COMPANIES

By
Jorge Alejandro Palacios

Submitted to
H. Wayne Huizenga School of Business and Entrepreneurship
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A Dissertation
entitled

TRANSNATIONAL COMPANIES' AND RADICAL TRANSFORMATION
PROCESSES: A STUDY OF PERFORMANCE IN COMPARISON TO OTHER
MULTINATIONAL COMPANIES

By

Jorge Alejandro Palacios

We hereby certify that this Dissertation submitted by Jorge Alejandro Palacios conforms
to acceptable standards, and as such is fully adequate in scope and quality. It is therefore
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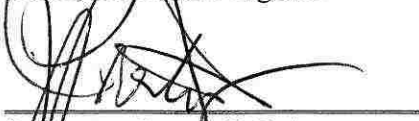
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Jorge Alejandro Palacios

ABSTRACT

TRANSNATIONAL COMPANIES' AND RADICAL TRANSFORMATION
PROCESSES: A STUDY OF PERFORMANCE IN COMPARISON TO OTHER
MULTINATIONAL COMPANIES

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The objective of this study was to answer the following question: Do organizations that were defined as having successfully adopted the transnational model, as per Bartlett and Ghoshal (1989), and labeled as transnational companies (TNC), perform significantly better than other multinational companies (MNC) when going through radical transformation processes?

This research question was answered through a mixed method research design. The first part used a quantitative research approach and evaluated the financial performance of TNCs selected from the Bartlett and Ghoshal (1989) research, using secondary data sources from 6 TNCs and 20 MNCs. The second part used a qualitative approach based on empirical research to answer the question, "What is happening now, 25 years later?," through three in-depth interviews. Qualitative data was analyzed to discuss the contribution of the characteristics of TNCs to the performance of these organizations and their capacity to successfully go through radical transformation processes.

The term, transnational, as a type of MNC that was introduced by Bartlett and Ghoshal (1988) and expanded by Zanfei (2000), served as the theoretical basis for this study. TNCs have differentiated characteristics, such as an integrated network structure, where complex coordination and knowledge-sharing processes are in place; resources and capabilities are distributed among different sites; and information, technology, and resources flow among interdependent units.

This research contributes to bringing the discussion of TNCs back to the forefront of international business strategy research by assessing the applicability of certain elements of the "transnational solution" (Bartlett & Ghoshal, 1998) as an evolutionary next step for MNCs that seek long-term sustainable grow. Several directions are suggested for future research, including mapping performance variations over a longer period of time in combination with strategic content analysis; studying the consistency in share price and revenue performance among TNCs as a differentiating factor when compared to other MNCs; and understanding the increasingly predominant role of regions and regional offices in the organizational model of multinationals.

Finally, this research further reinforces the suitability and additional depth brought by the application of mixed method research models to academic research in the field of international business.

ACKNOWLEDGEMENTS

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Chapter I

Introduction

This study answers the following question: Do organizations that were defined as having successfully adopted the transnational model, as per Bartlett and Ghoshal (1989), and labeled as transnational companies (TNC), perform significantly better than other multinational companies (MNC) when going through radical transformation processes? This research question is answered through a mixed method research design. The first part uses a quantitative research approach and evaluates the financial performance of TNCs selected from the Bartlett and Ghoshal (1989) research, using secondary data sources. The second part uses a qualitative approach based on empirical research to answer the question, "What's happening now, 25 years later?," through a series of five in-depth interviews. Qualitative data was analyzed to discuss the contribution of the characteristics of TNCs to the performance of these organizations and their capacity to successfully go through radical transformation processes.

The term *transnational* as a type of multinational company (MNC), which was introduced by Bartlett and Ghoshal (1988) and later expanded by Zanfei (2000), serves as the theoretical basis for this study. This theory base is further supported by already existing models and studies, such as Camara and Renjen (2004), Harzing (2000), Leong and Tan (1993), Filley and Aldag (1978), Bartlett and Ghoshal (1987a), Bartlett and Ghoshal (1987b), and White and Poynter (1989), that were evaluated to propose a unified depiction of both TNCs and a definition of radical transformation processes. This study aims to determine whether MNCs that invest time and resources in evolving into TNCs have a greater probability to successfully go through radical transformation processes

than other MNCs. It is proposed that TNCs would have differentiated characteristics, such as an integrated network structure, where, as described by Bartlett and Ghoshal (1989), complex coordination and knowledge-sharing processes would be in place; resources and capabilities would be distributed among different sites; and, finally, information, technology, and resources would flow among interdependent units.

This research brings the discussion of TNCs back to the forefront of IB strategy research, not expanding the study from the few MNCs that originally were qualified as TNCs, but rather by assessing the applicability of the "transnational solution" (Bartlett & Ghoshal, 1998) as an evolutionary next step for MNCs that seek to grow through large-scale and perilous business decisions.

Background of the Problem

Organizations are complex systems, as discussed by Simon (2001) in a study on the interactions of markets with business firms, by Richardson (2008) when discussing the difficulty in grasping the infinite possibilities generated by a large multidepartment organization, and by Dominici and Levanti (2011) in a study that applies complex system theory to the analysis of inter-firm networks. In an attempt to develop a framework for categorizing organizational complexity, Damanpour (1996) developed a model that analyzes complexity based on two dimensions: structural complexity and organizational size. In an effort to bring understanding to the complex host of factors that affect an organization's functioning, the model also considered contingency factors, including environmental uncertainty, industrial sectors, types of innovation, and stages of innovation adoption.

Within the universe of firms, MNCs stand out for their proliferation and complexities. Since the focus of many researchers is on defining the different types of MNCs, it is quite a challenge to find a definition that would create some sort of consensus among academics; this is why, in this case, a minimalist approach is probably best. A multinational corporation simply is a firm that has significant operations in more than one country: Beginning with Robock and Simmonds (1983), it is "a group of corporations with business in several different countries but with a single headquarters" (p. 7); or, as defined by Kogut and Zander (2003b), "the multinational corporation is an economic organization that evolves from its national origins to spanning across borders" (p. 516).

In outlining the major change factors affecting the life of organizations at all levels, as stated by Jones (2002), "*globalization* and *restructuring* are undoubtedly two of the major catch words of the past decade" (p. 325). Another part of corporate growth strategy that has been widely researched is *M&A* (Mergers and Acquisitions). In their field-based study, Camara and Renjen (2004) predicted that merger activity would rebound to its highest activity levels since the 1990s. Despite the decline in activity driven by the global economic crisis that started in 2008, DeCarlo stated in February 2011 that cross-border merger activity rose up 59% from the same time in 2010, which is the strongest start for cross-border M&A since 2008.

Even when studying MNCs in a "stand-still mode," it is evident that their complexity and individuality are impossible to comprehend in a sole attempt. As an example, in a study of globalization and organizational restructuring, Jones (2002) describes a company's business model as a combination of boundary configuration

(vertical, horizontal, and spatial in nature), governance structure (organizational hierarchy, centralization and decentralization of decision making, and communication patterns), and competitive strategy (includes promotion of shareholders' value, resource allocation issues, and differentiation/cost strategy).

This study focuses on one type of MNC—transnational companies—and their performance when going through radical transformation processes. Although the original term introduced by Bartlett and Ghoshal (1988) is *transnational capabilities of multinational companies*, the term *transnational companies* (TNCs) was used in this study as seen in more recent studies, such as Zanfei (2000).

> The definition of transnational organizations that is used in this study is [organizations that have] the ability to manage across national boundaries retaining global flexibility while achieving global integration. More than anything else this [involves] the ability to link local operations to each other and to the center in a flexible way, and in so doing, to leverage those local and central capabilities. (Bartlett & Ghoshal, 1988, p. 66)

In summary, "dynamic interdependence is the basis of a transnational company— one that can think globally and act locally" (Bartlett & Ghoshal, 1988, p. 69). In other words, TNCs already may have a significant head start when going through radical transformation processes because of processes and organizational capabilities they already may have implemented in their evolution process to become a TNC. Furthermore, TNCs have embraced change precursors as an inherent part of their business models. As described by Zanfei (2000), "this new mode of TNC organization implies considerable, conscious effort to enhance the decentralized units' abilities to innovate; this requires

high investment in resources, competences and cultural background" (p. 538). The key characteristic Zanfei emphasizes is the embracing of innovative activities through international dispersion, heavy investment in R&D, and the interaction of subsidiaries with their local context. All of these are characteristics that, if adequately identified and leveraged, would present a solid foundation for successful radical transformation processes.

Justification of the Study

Radical transformation in MNCs seems to be so common that whoever is not doing it seems to be planning it or at the very least considering it. Based on this idea, one would think processes that have been studied and documented so often could be put in place in a quasi-flawless fashion; but this does not seem to hold true. Actually, in the case of M&A transformations, "studies by academics, consulting firms, and the business press confirm that mergers are just as likely to destroy as to create shareholders value" (Camara & Renjen, 2004, p. 10).

Taking M&As as an example of radical transformation in MNCs, Camara and Renjen (2004) describe the Hewlett-Packard/Compaq and the AmeriSource Health Corporation/Bergen Brunswig Corporation mergers as exhibiting best practices. This description was because their model included concentration on synergies, quick integration, and communication, maintaining a focus on customer and revenue growth and continuously addressing human and cultural issues.

The capability to enact these tasks might already be a part of the day-by-day operation of many TNCs. For instance, Bartlett and Ghoshal (1988) describe what they

term *transnational capabilities* as "the ability to manage across boundaries, retaining local flexibility while achieving global integration" (p. 66). They observed that organizations, such as Ericsson, had developed "the ability to link local operations to each other and to the center in a flexible way, and in so doing, to leverage those local and central capabilities" (Bartlett & Ghoshal, 1988, p. 66). These efforts create what they summarized into three organizational characteristics:

- "an interdependence of resources and responsibilities among organizational units;

- a set of strong cross-unit integrating devices; and

- a strong corporate identification and well-developed worldwide management perspective" (Bartlett & Ghoshal, 1988, p. 66).

These characteristics seem to be compatible to the best practice tasks identified by Camara and Renjen (2004). With this in mind, this study seeks to define whether organizations that have successfully adopted the transnational model have performed significantly better than other MNCs when going through radical transformation processes.

This study is especially timely and useful because of the current sustained news about the deepest global recession since the Great Depression that started in 1929. It is increasingly clear that the weakening of the largest economies in the world will be here for some years to come. As stated by Global Insight's (2011) global overview, the world economy's expansion could prove rather lethargic in the next 5 years. Furthermore, this analysis foresees that the weakened global banking system may not be able to provide financial support to sustained growth for some years to come (Global Insight, 2011, p. 3).

Based on the previous statement, and extrapolating from the description of Bartlett and Ghoshal (1998) in the context of the turbulent competitive environment of the 1970s and 1980s, a rash of studies, reports, and recommendations telling managers how to run their businesses effectively in this new global environment will be unleashed. As explained by Ghoshal (1998), this will be driven by the need to take action towards radical transformations to prevent organizations from seeing sharp decreases in their share value and cash flow and from even going bankrupt. The predictions in Global Insight (2011) point to organizations needing to take action, adapt, and make changes, as well as to a renewed influx of studies, reports and recommendations; this environment makes research on the impact of the Bartlett and Ghoshal (1989) TNC model timely and relevant.

Significance of the Study: MNC Reorganization Failures

Transformation seems to be one of the few constants that alter the functioning of organizations, regardless of industry or location. As described by Hoyte and Greenwood (2007), information as a value driver, global markets and competition, rocketing IPOs, mega-mergers, and predatory acquisitions already have changed both the landscape and speed of change in organizations. Yet, several authors point to the risks and probabilities of failure of such changes and new strategies: Hoyte and Greenwood state that implementing a new strategy is a difficult task—one that is prone to failure; and, likewise, Head (2006) states that organizational development processes have been nothing but a failure when applying traditional tools and processes in companies that have waited too long and have not identified the correct problems to solve. The

confluence of both the omnipresence of change and transformation in organizations as well as the high risk for failure calls for the identification of alternatives to increase organizations' chances of success. Based on this statement, it is pertinent to investigate whether organizations equipped with certain preexisting elements can increase their probability of success when embarking on radical transformation processes.

The outcome of this research aims at

- presenting a consolidated overview of characteristics of TNCs, consolidating major existing models and definitions derived from the studies of Bartlett and Ghoshal (1989);

- analyzing the financial performance of TNCs and how it compares to other MNCs when going through radical transformation processes;

- supporting the financial information with an understanding and validation of the factors that contribute to the success or failure of these organizations, based on the existence of elements of the transnational model; and,

- contributing to the understanding of success factors in radical transformation processes, because this study implicitly reinforces the fact that transformation may be a prevalent component of the lifecycle of organizations.

Research Question

This study addresses the following research question: Do organizations that were defined as having successfully adopted the transnational model, as per Bartlett and Ghoshal (1989), and labeled as transnational companies (TNC), perform significantly

better than other multinational companies (MNC) when going through radical

transformation processes?

As depicted in Figure 1, the search for the answer to this question focuses on the

following:

- Financial performance of TNCs and other MNCs within the same sectors, in a

  5-year period. Analysis is based on ratios and percentages; therefore, the size

  of the MNCs is not a direct consideration, although the profile of each

  organization was documented.

- Characteristics of TNCs, such as coordination and knowledge-sharing

  processes; distribution of resources and capabilities; and flow of information,

  technology, and capabilities that can be observed irrespective of size and

  industry. This study does not focus on isolated best practices but rather on

  common characteristics.

- Cases of TNCs that have gone through radical transformation processes.

  Additionally, whether the determinant factors present at the time of the change

  process were sustained in the long term is not considered relevant in this

  context.

```
┌─────────────────────────────┐
│ Share Price Performance (SPP)│ ─── H ──→
│ Compared to Industry Average │
│     5-year performance       │
└─────────────────────────────┘

┌─────────────────────────────┐
│   Annual Revenue (REV)       │ ─── H ──→
│    5-year performance        │
└─────────────────────────────┘

┌─────────────────────────────┐
│    Gross Margin (GM)         │ ─── H ──→
│    5-year performance        │
└─────────────────────────────┘

┌─────────────────────────────┐
│   Return on Sales (ROS)      │ ─── H ──→
│    5-year performance        │
└─────────────────────────────┘

┌─────────────────────────────┐
│ Earnings before Interest,    │ ─── H ──→
│ Tax & depreciation (EBITD)   │
│    5-year performance        │
└─────────────────────────────┘

┌─────────────────────────────┐
│   EBITD to REV ratio         │ ─── H ──→
│     (EBITD/REV)              │
│    5-year performance        │
└─────────────────────────────┘
```

Quantitative discussion
Organization's
Financial Performance (OFP)

TNCs   Other MNCs

Qualitative discussion
In-depth semi-structured
interviews

What's happening now 23 years after Bartlett & Ghoshal (1989)?   Assessment of the role of 7 characteristics of TNCs

Figure 1. Research model.

Developing answers for the research question is of great importance for MNCs seeking to transform themselves to remain competitive and continue to grow or even exist but that are cautious to pay a high price for possible failures. This argument is in line with the research of Kogut and Zander (2003a, 2003b) on internal transfer of knowledge where they show, through a benchmark discussion, that MNCs make the decision to transfer a technology internally based on the efficiency gain they can attain relative to other firms. To support their argument, Kogut and Zander cite from the literature on the failure of the market for information among multinational corporations. Driving an organization to evolve into a TNC and using knowledge transfer as a mechanism to create profitable products and services requires complex changes within an

organization, and, as Erakovic and Wilson (2006) state in their study of market technology and radical transformation, "the probability of failure is heightened in radical organizational transformation" (p. 486).

Definitions of Terms

The following are the most significant terms used in this study and the definition that has been chosen for each:

Multinational Company (MNC): As previously mentioned, there currently is little consensus among academics as to what is the definition of the term *multinational company* (MNC). The simple definition of Westney and Zaheer (2003) serves as a starting point for this research. They state that the MNC is defined by its "multi-country organizational presence" (Westney & Zaheer, 2003, p. 349). This definition is in line with the definition used by Buckley and Casson (2009) as the starting point of their retrospective discussion about internationalization theory and the multinational company: A MNC "may be defined as an enterprise which owns and controls activities in different countries" (p. 1), based on Buckley and Casson (2002). Westney and Zaheer (2003) go on to explain that in the field of international business there is no agreement on the number of countries an organization has to operate in, in order to qualify as an MNC. Cantwell, Dunning, and Lundan (2010) define an MNC as "a coordinated system or network of cross-border value-creating activities, some of which are carried out within the hierarchy of the firm, and some of which are carried out through informal social ties or contractual relationships" (p. 569).

Transnational Companies (TNC): The term *transnational* has been chosen to characterize the type of organizations whose characteristics were studied as a subset of the more common term *multinational*. This is based on the categorization introduced by Bartlett and Ghoshal (1988) and further expanded by Harzing (2000) and others. In an article that discusses the challenges of globalization that both Japanese and Western organizations were facing since the 1960s and the 1970s, Bartlett and Ghoshal (1988) introduce the term transnational to characterize one type of multinational company. Their categorization comes from a "three-fold typology of multinational companies: Global, Multidomestic and Transnational" (Harzing, 2000, p. 101). Other views of this typology are presented in Chapter II, such as from Leong and Tan (1993) and Kostova (1999), to determine a single definition of transnational companies (TNC) and a consolidated typology of MNCs. In summary, as introduced by Bartlett and Ghoshal (1988), the overarching tag line to characterize a TNC is "think globally and act locally" (p. 69).

For the purpose of this study, only fully consolidated TNCs were considered; organizations that use the term without having fully embraced all major characteristics into their business model and corporate culture were omitted.

Radical Transformation Processes: The term *radical transformation process* is used instead of *change process* or *organizational change* to limit the study to only those processes that consist of fundamental modifications to the business model, culture, and competitive position; or, as described by Sheaffer, Honig, Zionit, and Yeheskel (2011), how the organization itself, its parts, and its relationships will concurrently change. Radical transformation process refers to those processes implemented either for the survival or reinvention of an organization. Similar terms are used in studies such as the

Erakovic and Wilson (2006) case study of Telecom New Zealand, where they state that the "radical change pathway" (p. 485) is more likely than others to be characterized by technological change and abrupt market transitions. Erakovic and Wilson define a change process that contains various elements that impact the organization simultaneously: these include government coercive actions that result in governance and structural changes, the organization's market position, its level of dependence on technology, and institutional new practices and power relationships.

Another example is the Kawalek and Wastall (2005) case study of radical transformation in British government institutions through the implementation of a new process reengineering method that would reshape the way decisions are made in public institutions, favoring a model of enhanced innovation and collaborative participation.

In the case of this study, the global economic recession that started in 2008 and persists through 2012 serves as the chosen factor of environmental pressure that triggers radical transformation in MNCs. In a longitudinal study of radical change and financial distress of the Israeli Kibbutz, Sheaffer et al. (2011) explain how changes such as privatization, introduction of differential incentives, and reduced government subsidies have resulted in radical changes leading to financial distress of several kibbutzim. They observed an inverted linkage between radical changes and stagnating or declining organizational performance, concluding that radical change leads to a vicious cycle of deterioration as opposed to a successful reinvention of organizations (Sheaffer et al., 2011).

Chapter Summary

Chapter I frames this research within an international environment characterized by frequent change processes in MNCs as described by Jones (2002), Camara and Renjen (2004), and DeCarlo (2011). Cantwell et al. (2010) state that MNCs are among the focal entities that have come to co-evolve with unpredictable shifts in a continually emergent and uneven environment; they observed that this is particularly true in light of the institutional transformation initiated by the recent financial crisis. Transnational companies (TNC) as defined by Bartlett & Ghoshal (1989) are the form of MNCs examined in this study, and the term *radical transformation processes* is used as a type of change that fundamentally reshapes the way an organization will function going forward. As an example, Prasad (2006), in discussing the major effects and consequences of globalization, provides examples of drivers of radical transformation, including offshoring/outsourcing, the increased significance of the services sector, a shift in gravity of the global economy, and the changes in income and wealth distribution within and between countries. Finally, it has been stated that there is a need for strategic alternatives for MNCs in order to go through radical transformation processes without having such high costs and the possibility of failure. In studying MNCs, climate change, and institutional failures, Pinske and Kolk (2012) argue that MNCs need to consider carefully their strategic options to cope with non-market forces, citing as examples stimulus packages, particularly in an environment characterized by institutional failures.

This research was conducted through a mixed methodology, where the quantitative element consists of the analysis of financial performance indicators of TNCs and other MNCs using binary logistic regression, and the qualitative empirical research

element is based on in-depth interviews of five executives from the TNCs that are analyzed.

Plan of Study

      This study is divided into five chapters. Chapter I provides a background of the problem, justification and significance of the study, the research question, and definition of terms. Chapter II outlines the literature to be reviewed to set the framework for this study; it examines empirical and theoretical work in the areas of international business, business management, change management, and organizational behavior. Chapter III presents the methodology and research design used for this study. It describes a mixed-methodology approach, and it defines the data sources, data collection techniques, statistical methodology, and other techniques that have been utilized.

Review of Literature

Introduction

As stated in Chapter I, this study addresses the following research question: Do organizations that were defined as having successfully adopted the transnational model, as per Bartlett and Ghoshal (1989), and labeled as transnational companies (TNC), perform significantly better than other multinational companies (MNC) when going through radical transformation processes?

In order to frame this study in a solid theoretical foundation, Chapter II focuses on discussing the major components of this research, which are multinational companies, transnational companies, and radical transformation processes. Chapter II, therefore, reviews the relevant research focusing on (a) definition and typologies of multinational companies, (b) definition and characteristics of transnational companies, and (c) discussion to further define the term *radical transformation process*.

Definition and Typologies of Multinational Companies

Definition of multinational companies. The discussion around multinational companies often is centered in their role as either ruthless exploiters or benign engines of prosperity (Stopford, 1998). In a discussion on multinational corporations, Stopford (1998) challenges the various assumptions, both positive and negative, about the MNC in light of their evolution and current role in globalized economies. Stopford discusses that the assumptions that globalization has made MNCs more mobile than ever and that MNCs are bigger than their assets have been validated; although Buckley and Casson

(2009) discuss that there is no clear consensus on whether the proliferation of MNCs has accelerated globalization or if it is the other way around. On the other hand, Stopford rejects the assumptions that MNCs are first and foremost creatures of their home countries, that all multinationals are large corporations, that MNC markets are impenetrable to rival companies, that only some industries are going global, that MNCs are creations of wealthy countries, and that MNCs are beyond government control.

Multinational corporations most often are seen as an evolution from a non-multinational corporation, but as stated by Kogut and Zander (2003b), the MNC is not a response to a failure of markets and organizations in buying and selling knowledge; it is a model that seeks greater efficiency in using its organizational capabilities to transfer knowledge across borders. Following the Coasian approach applied to international business theory by Buckley and Casson (2009), firms do not have to necessarily internationalize incrementally; organizations can be born global, driven by the application of the business model that was originally designed to start the firm in the first place.

There are various definitions of multinational companies, each bringing diverse differentiators, which, in many cases, may limit the scope of this study; the following are some examples. For the purposes of this discussion, the terms *multinational corporation*, *multinational enterprise*, and *multinational company* are considered equivalent and interchangeable.

- A MNE is an enterprise that carries out transactions in or between two sovereign entities, operating under a system of decision making that permits influence over resources and capabilities, where the transactions are subject to

influence by factors exogenous to the home country environment of the enterprise. (Robock & Simmonds, 1983, p. 731)

- "A multinational corporation (MNC) is simply a firm that has significant operations in more than one country. MNC may also be multinational enterprises—a group of corporations with businesses in several different countries but with a single headquarters" (Higgins, 1994, p. 93).

- "The MNC (multinational company) is defined as a company that is headquartered in one country and owns or controls production or service subsidiaries in some other country or countries" (Mead, 1998, p. 348).

- "The multinational corporation is an economic organization that evolves from its national origins to spanning across borders" (Kogut & Zander, 2003b, p. 516).

- "A MNE is a coordinated system or network of cross-border value-creating activities, some of which are carried out within the hierarchy of the firm, and some of which are carried out through informal social ties or contractual relationships" (Cantwell et al., 2010, p. 569).

These definitions of MNCs show a progression from the argument of Higgins (1994) that organizations that operate in a single country, irrespective of their complexities, belong to a different category. As Buckley and Casson (2009) discuss, the research agenda in the field of international business has evolved from explanations of the existence of the multinational company to more complex discussions that can be framed under internationalization theory, where research streams focus on five areas: (a) extending the theory of the firm; (b) refining the analysis of foreign market entry and

development strategies; (c) IJVs; (d) international entrepreneurship, dynamics, innovation and real options; and (e) the role of culture and strategic complexity in international business. Another stream of research gaining in strength is that of the applications of transaction cost economics to MNCs. Williamson (2010a, 2010b) describes how the neoclassical theory of the firm that treated organizations as a black box that transforms inputs into outputs has been largely discontinued. The application of transaction cost economics to marketing, strategy, organizational behavior; finance, operations management, and accounting are increasingly developed.

This study uses the definition of Cantwell et al. (2010), since it incorporates elements such as ownership of resources and outputs, the sovereignty to each country, and the influence of local offices as a differentiating factor from a non-MNC; without concepts that would distract from the focus of this particular research. As Sundaram and Black (1992) discuss, there are several aspects of MNCs that are substantially different from aspects of non-MNCs, and these differences are sufficient to justify a separate stream of academic research.

Typologies of multinational companies. Harzing (2000) states that a typology serves as a predictor of strategic success by assessing whether there is an alignment between environment, strategy, structure, and processes. In the case of organizations, attempting to incorporate all variations of MNCs in a typology is a complex exercise, mainly because there is a multitude of guiding criteria that can be used to build diverse but equally solid typologies.

For many years, authors have tried to identify a single criterion to catalogue organizations; views were diverse and complex even before considering the multinational

component as a major differentiating factor. There were then various attempts to simplify

the task to create a typology of organizations. The following examples are suggested by

Filley and Aldag (1978):

> Taxonomies of organizations have utilized single criteria such as size (Kimberly,
>
> 1976), technology (Child, 1973; Thompson, 1967; Woodward, 1965), control
>
> systems (Etzioni, 1964), prime beneficiaries (Blau & Scott, 1962), industry type,
>
> and degree of environmental stability (Lawrence & Lorsch, 1969). (p. 578)

Filley and Aldag presented their own attempt at an all-inclusive organizational typology

based on three adaptive strategies: craft, promotion, and administrative firms.

    As the understanding of the complexity of organizations evolves, additional

elements become the focus of categorization criteria. Prahalad and Hamel (1990) discuss

that it is how the organization interacts within itself and with its environment that defines

it best; the key element being the strategic approach and not the organization's

organizational units by themselves. Prahalad and Hamel present the case of NEC and its

use of core competencies as the foundation for the dynamics of each of their business

units and their development of products and approach to market; NEC was not

considered a collection of business units. The company was seen rather as a portfolio of

core competencies; the company's collective knowledge about how to coordinate their

production processes and technologies.

    The same holds true when looking at the characteristics of interactions and

interdependencies of multinational firms as a dynamic symbiotic group on its own

(Ghoshal & Bartlett, 1990), where terms such as polycentric, geocentric, ethnocentric,

multidomestic, international, global, and transnational have been used and often

researched (Harzing, 2000). Ghoshal and Bartlett (1990) use the term *interorganizational network* to characterize the interactions among several MNCs. These typologies are useful to reduce the complexity of MNCs into smaller lists of interacting constructs, making it easier to allocate MNCs into clusters.

Global, multidomestic, and transnational MNCs. Bartlett and Ghoshal (1988), in their article on worldwide effectiveness, discuss a model of multinational setup based on organizational strategy that later served as a precursor to their three-fold typology of MNCs: global, multidomestic, and transnational.

The three types of MNCs were illustrated by Bartlett and Ghoshal (1998) through the presentation of the case of the VCR video technology standoff between the widely successful Beta and the newer VHS alternative. The attributed success factors of two distinct multinational setups were described as follows:

- The *decentralized federation*, ascribed as the European/American model, which is designed as an aggregation of largely independent local units that add up to a multinational organization. This model is very flexible to the requirements of local markets but inefficient at leveraging on global resources.

- The *centralized hub*, which is ascribed as the Japanese model of operations concentrated in the home country headquarters. This model emphasizes high levels of efficiency and capacity for reaction to large global demands, but with diminished capacity to react to local changes.

Bartlett and Ghoshal (1988) cite Matsushita Electric Company (Panasonic) as a classic example of a centralized hub. On the other hand, Bartlett and Ghoshal cite Philips

(the multinational Dutch competitor) as following the decentralized federation model. The three key success factors cited by Bartlett and Ghoshal for Matsushita's National and Panasonic centralized hub organizational setup were

- gaining the input of subsidiaries into its management process,

- ensuring that development efforts were linked to market needs, and

- managing responsibility transfers from development to manufacturing to marketing. (Bartlett & Ghoshal, 1988, p. 57)

Conversely, despite their failure in adequately marketing the VCR technology globally, Philips was successful at having a large, international footprint and a high sensitivity to local markets. The key success factors cited by Bartlett and Ghoshal (1988) of their decentralized federation model were

- Philip's use of a cadre of entrepreneurial expatriates,

- an organization that forces tight functional integration within a subsidiary, and

- a dispersion of responsibilities along with the decentralized assets. (p. 62)

According to Bartlett and Ghoshal (1988), the term *centralized hubs* later became *global organizations*, and the term *decentralized federations* was later referred to as *multidomestic organizations*. Nevertheless, these terms are not used in this study due to the inconsistency of their usage across publications by other authors. As an example, Adler and Ghadar (1990) have a description of *global company* that fits the transnational category as described by Bartlett and Ghoshal (1988). The third type of MNC, transnational companies, is described in length in the next section of this chapter.

Bartlett's and Ghoshal's (1989) typology of MNCs is used as a basis for empirical studies by many authors, such as Harzing (2000), who developed an overview of

typologies of multinational companies. Harzing summarizes her typology of MNCs in two summary tables: This research was aimed at confirming the differentiation of the three types of MNCs, in aspects of interdependence and local responsiveness in a large-scale empirical setting. Her research includes many of the major authors that have contributed to this discussion since 1969, including Adler and Ghadar (1990); Doz (1980); Leong and Tan (1993); Perlmutter (1969); Porter (1986); Prahalad and Doz (1987); Roth, Schweiger, and Morrison (1991); Sundaram and Black (1992); and White and Poynter (1989).

Along the same lines, Leong and Tan (1993) conducted empirical research that sustained Bartlett and Ghoshal's (1989) typology through a senior executive survey that evaluated the configuration of assets and capabilities, the role of overseas operations, and the development and diffusion of knowledge of several organizations.

To further expose the complexities of MNCs, Ghoshal and Bartlett (1990) add that MNCs are what they call internally differentiated interorganizational networks. They describe MNCs as networks that operate within and in conjunction with other networks, which include all external organizations that affect their operation. This highlights the elements of intra- and inter-MNC dynamics in a discussion that often is limited to the strategic and organizational positioning of MNCs in the context of market- and country-specific environments.

Intra- and extra-organizational dynamics of MNCs. The understanding of the intra- and extra-organizational dynamics of MNCs, beyond just their organizational layout, can be covered by describing the attributes of the different contexts of interorganizational interactions based on the article by Warren (1967) and referenced by

Ghoshal and Bartlett (1990), where they describe that the MNC lies somewhere between

Warren's unitary and federative structures, as shown in the table reproduced in Table 1.

Table 1

Different Contexts of Interorganizational Interactions

	Type of context			
Dimension	Unitary	Federative	Coalitional	Social choice
Relation of units to an inclusive goal	Units organized for achievement of inclusive goals	Units with disparate goals, but some formal organization for inclusive goals	Units with disparate goals, but informal collaboration for inclusive goals	No inclusive goals
Locus of inclusive decision making	At top of inclusive structure	At top of inclusive structure, subject to unit ratification	In interaction of units without a formal inclusive structure	Within units
Locus of authority	At top of hierarchy of inclusive structure	Primarily at unit level	Exclusively at unit level	Exclusively at unit level
Structural provision for division of labor	Units structured for division of labor within inclusive organization	Units structured autonomously; may agree to a division of labor, which may affect their structure	Units structured autonomously, may agree to ad-hoc division of labor, without restructuring	No formally structured division of labor within an inclusive context
Commitment to a leadership subsystem	Norms of high commitment	Norms of moderate commitment	Commitment only to unit leaders	Commitment only to unit leaders
Prescribed collectivity, orientation of units	High	Moderate	Minimal	Little or none

Note. Adapted from "The Multinational Corporation as an Interorganizational Network," by S. Ghoshal & C. A. Bartlett, 1990, *Academy of Management Review, 15*, p. 608.

To further expose the complexities of MNCs, Ghoshal and Bartlett (1990) discuss

the characteristics of MNCs as internally differentiated interorganizational networks.

They describe MNCs as networks that operate within and in conjunction with other

networks (all external organizations that affect or drive its operation); this is further

outlined in other related literature updated through 2003, as summarized in Table 2.

Table 2

Literature Review of MNC Complexities

Article title	Author and year
The "Unitary Form" depiction of organizations, called "Mandated Networks"	Aldrich (1976); Hall, Clark, Giordano, Johnson, and Roekel (1977)
The sequential and reciprocal interdependencies among units of one organization	Ghoshal and Nohria (1989)
The interorganizational approach to understanding MNCs as a way to infer their internal relationships	Provan (1983); Provan, Beyer, and Kruytosch (1980)
The importance to separate the organization from its relevant environment	Nohria and Venkatraman (1987)
The empirical applications of the context perspective and the inclusion of Unitary and Federative contexts into the domain of intraorganizational analysis	Cook (1977)
The analysis of strategies and administrative processes utilized by MNCs to reconcile the often conflicting economic and political imperatives	Doz (1980)
The search for a new paradigm to describe the nature of Diversified Multinational Companies (DMNC) and its contribution to research in the field of multinational management	Doz and Prahalad (1991)
The inclusion of "differentiated Network MNEs" into a criticism of transaction-cost-based research	Rugman (2001); based on the Buckley and Casson (2003) book, *The Future of the Multinational Enterprise*, originally printed in 1976
The controversy around MNCs as "ruthless exploiters" or "benign engines of prosperity" through an opinion paper that seeks to provide updated responses to old paradigms	Stopford (1998)

A related topic is that of the influence of external factors or environment on the

structure and management processes of MNCs, as shown by the empirical research by

Ghoshal and Nohria (1993) that matches environmental characteristics to the structure of

MNCs. Ghoshal's and Nohria's (1993) research concludes that the fit between environment and organizational structure is defined by the principle of requisite complexity, which states that "the structures of organizations, in which term . . . include formal structural arrangements as well as formal and informal management processes, are and should be differentiated based on the characteristics of the external environment they face" (Ghoshal & Nohria, 1993, p. 324).

Performance and MNCs. A widespread discussion in the field of international business (IB) is the need for the next big question, as a driver to uniting and energizing scholars, achieving progress in the IB field, and enhancing the status of the field as a stream in itself (Peng, 2004). In an attempt to determine what this question may be, Peng (2004) proposed a question that, in various ways, already has been presented in many research studies of past and present: "What determines the international success and failure of firms?" (p. 99).

As shown in the discussion of the various typologies of MNCs and further explained by Thomas and Eden (2004), the difficulty in assessing the success of MNCs stems from the fact that there are confusing results from the literature available; there are only partial explanations for companies' successes or failures, and the term *multinationality* itself means different things to different authors. A three-component approach is used to define multinationality and, ultimately, to categorize organizations based on their degree of foreign market penetration, foreign production scope, and country scope. The first two constructs are assessed through the question, "what percent of the MNE's activities are conducted outside the home country?" (Thomas & Eden, 2004, p. 92); while the third construct is assessed through the question, "how wide is the

global reach of the multinational enterprise?" Thomas and Eden discuss the various degrees of multinationality of firms in comparison to performance measured using four indicators: return on assets, return on equity, excess market value, and average market value.

Buckley (2002) states, "the way forward is paradoxically to look back" (p. 370). This is why focusing on the question posed by Peng (2004) may help the field of IB better organize its research activities, reach at least a partial consensus, and become a more consolidated discipline. Furthermore, one additional influencing factor that is pertinent to the impact of a firm's multinationality on performance is time. This is possibly explained by the fact that the high costs of expanding to foreign markets are absorbed over time in the case of long-run market performance (Thomas & Eden, 2004).

Other typologies of MNCs. In their study of the implications of external environment on various aspects to internal organization, Sundaram and Black (1992) developed a framework that uses three clusters of MNCs: global, transnational, and multidomestic organizations. Their alignment exercise is summarized in Table 3.

Table 3

Alignment of Nomenclatures Found in Academic Research on Typologies of MNCs Versus that of Bartlett and Ghoshal, Adapted from Sundaram and Black (1992)

Bartlett and Ghoshal's MNC nomenclature	Authors and year	Other authors' MNC nomenclature (Sundaram & Black, 1992)	Authors and year
Global	Porter (1986); Bartlett and Ghoshal (1989)	Ethnocentric Centralized	Perlmutter (1969); Ghoshal and Bartlett (1990)
		Hierarchy	Hedlund (1986)

(continued)

Bartlett and Ghoshal's MNC nomenclature	Authors and year	Other authors' MNC nomenclature (Sundaram & Black, 1992)	Authors and year
Multinational	Kindleberger (1984); Bartlett and Ghoshal (1989)	Multidomestic	Porter (1986)
		Polycentric	Perlmutter (1969)
		Hierarchy M-form	Hedlund (1986); Filley and Aldag (1978)
		Decentralized	
			Ghoshal and Bartlett (1990)
Transnational	Bartlett and Ghoshal (1989)	Geocentric	Perlmutter (1969)
		Complex-Global	Porter (1986)
		Network	Ghoshal and Bartlett (1990)
		International	Kindleberger (1984); Bartlett and Ghoshal (1989)

Note. Adapted from "The Environment and Internal Organization of Multinational Enterprises," by A. K. Sundaram & S. Black, 1992, *Academy of Management Review, 17*, p. 105.

In a study of Bartlett and Ghoshal's typology of multinational companies, Harzing (2000) summarizes the spectrum of types of MNCs in four clusters: multinational, international, global, and transnational organizations. Harzing aligns these four nomenclatures found in academic research on typologies of MNCs to that of Bartlett and Ghoshal (1988), as outlined in Table 4.

Table 4

Alignment of Nomenclatures Found in Academic Research on Typologies of MNCs Versus that of Bartlett and Ghoshal, Adapted from Harzing (2000)

Bartlett and Ghoshal's MNC nomenclature	Authors and year	Other authors' MNC nomenclature (Harzing, 2000)	Authors and year
Multinational	Bartlett (1986); Ghoshal and Nohria (1993); Leong and Tan (1993)	Multidomestic	Roth et al. (1991); Sundaram and Black (1992)
			Porter (1986)
		Multidomestic industry	Perlmutter (1969); Adler and Ghadar (1990)
		Polycentric International	
International	Ghoshal and Nohria (1993)	Domestic functional with international division	White and Poynter (1989)
Global	Bartlett (1986); Ghoshal and Nohria (1993); Roth et al. (1991); Sundaram and Black (1992); Leong and Tan (1993)	Ethnocentric	Perlmutter (1969)
		Worldwide integration	Doz (1980)
		Global Industry	Porter (1986)
		Multinational	Adler and Ghadar (1990)
Transnational	Bartlett (1986); Ghoshal and Nohria (1993); Sundaram and Black (1992); Leong and Tan (1993)	Geocentric	Perlmutter (1969)
		Administrative coordination	Doz (1980)
		Global Industry	Porter (1986)
		Multifocal strategy and Matrix organization	Prahalad and Doz (1987)
		Mixed	
		Horizontal	White and Poynter (1989)
			Roth and Morrison (1990)
		Multifocal	
		Interaction strategy	

Note. Adapted from "An Empirical Analysis and Extension of the Bartlett and Ghoshal Typology of Multinational Companies," by A. W. Harzing, 2000, *Journal of International Business Studies*, p. 104.

Definition and Characteristics of Transnational Companies

Definition of transnational companies. As discussed previously, the introduction of the term *transnational* to characterize a type of multinational company was introduced by Bartlett and Ghoshal (1988) in an article that discusses the challenges of globalization that both Japanese and Western organizations have been facing since the 1960s and 1970s. In the article, they discuss that the main challenge of large organizations that operate internationally is their inability to redirect resources to environments or markets facing threats and weaknesses. The authors discuss that two opposite models seem to be dominant among these companies, but neither one is fully effective in an economy that simultaneously requires increased globalization and localized flexibility. These models are the decentralized federations and the centralized hubs previously discussed in this chapter.

> A third model was found in organizations that had the ability to manage across national boundaries retaining global flexibility while achieving global integration. More than anything else this involved the ability to link local operations to each other and to the center in a flexible way, and in so doing, to leverage those local and central capabilities. (Bartlett & Ghoshal, 1988, p. 66)

One example is the Swedish telecommunications company, Ericsson, where three organizational characteristics that facilitate the development of transnational capabilities were identified:

- "an interdependence of resources and responsibilities among organizational units;
- a set of strong cross-unit integrating devices; and

- a strong corporate identification and a well-developed worldwide management perspective" (Bartlett & Ghoshal, 1988, p. 66).

In their book, Bartlett and Ghoshal (1998) expand their discussion of the TNC model at length through a 5-year long study of nine large multinational companies: Kao, Unilever, and Procter & Gamble in the branded package products business; GE, Philips, and Matsushita in the consumer electronics industry; and ITT, Ericsson, and NEC in the telecommunications switching industry. This study, therefore, spans across three industries and three continents to further emphasize the point that discussions about the TNC model are relevant to all MNCs. The overarching conclusion of Bartlett and Ghoshal (1998) is that the challenges, disappointments, and failures of three of these companies—GE, Kao, and ITT—in the context of their international operations was not primarily due to inappropriate strategic analyses or managerial ineptitude but to organizational deficiencies.

In the course of their study, Bartlett and Ghoshal (1998) developed an understanding of the reasons why Unilever, Procter & Gamble, Philips, Matsushita, Ericsson, and NEC succeeded in defending and even strengthening their position as global players during the decade of the 1980s, when many companies were simultaneously pushing to internationalize their operations and commercial reach. They reached three major conclusions:

1. The forces of global integration, local differentiation, and worldwide innovation force companies to develop a model that would allow for simultaneously achieving global competitiveness, multinational flexibility, and worldwide learning capabilities.

2. Building these strategic competencies simultaneously is primarily an organizational challenge, which forces companies to develop a new organizational model; this model was termed *transnational* and described as a new way to manage multinational organizations.

3. The transition to a transnational mode of management is a complex exercise that only can be successful if supported by a high level of management attention and effort. An organization working with the transnational model would have to be self-adaptive, competitive, and flexible all at the same time.

As Bartlett and Ghoshal (1988) state, the overarching tag line to characterize a transnational company is "think global, act local."

As Zanfei (2000) reinforces, it would be erroneous to conclude that TNCs are the natural result of an organization's evolution. Even though market forces do drive organizational constructs, such as structure, technology developments, R&D, and information flows, TNCs need to make a conscious effort and investment to enhance a decentralized unit's abilities to innovate. On the other hand, the TNC needs to avoid the idea that the knowledge-sharing network collapses as a result of this drive for autonomy. It is this balance among autonomous developments, information sharing, and activity coordination that makes the TNC model so difficult to implement and sustain. In essence, the transnational model goes beyond a proposed strategic approach or a particular organizational design; it is a management mentality (Bartlett & Ghoshal, 1998).

Explanation of the need for the transnational model. The field of IB has been challenged strongly to consider itself in terms of its relevance as a mature discipline organized around paradigms, and it has been criticized for its "trade deficit" of

researchers and research content into other disciplines (Buckley, 2002; Peng, 2004). Within this context, the validation of the field of IB may be driven by the empirical demonstration of long-term performance (Peng, 2004), based on models such as the TNC model.

Overall, as Hamel and Prahalad (1983) describe, in a multifirm and multinational environment, different businesses are subject to various pressures driven by performance and integration requirements. Managing these demands from a strategic point of view often requires companies to go beyond traditional solutions to achieve a desired level of division of strategic responsibilities between headquarters and subsidiaries or local offices. Furthermore, Hamel and Prahalad conclude that traditional structures are inadequate to cope with the demands and complexities of complex multinational businesses.

As Bartlett and Ghoshal (1998) describe, for a multinational organization to achieve global competitive advantage and for costs and revenues to be managed simultaneously, both efficiency and innovation are important, and new ideas can come from any part of the organization. Based on this idea, they argued that instead of making a binary choice between centralization and decentralization, multinational companies should implement the transnational model, which allows for selective flexibility and for various models cohabiting within one large MNC.

Through the analysis of successful results of MNCs, such as P&G, NEC, and Unilever, as well as the many challenges that companies such as ITT, GE, and Kao faced in adapting to changing market conditions, the following three conclusions were reached

and are used as the foundation for explaining why the transnational model was

developed:

- To compete effectively, a company had to develop global competitiveness, multinational flexibility, and worldwide learning capability simultaneously.

- Building these multiple strategic competencies was primarily an organizational challenge, which required companies to break away from their traditional management modes and adopt a new organizational model.

- Such organizational capability was not built and managed. The transition from multinational, global, or international posture to the transnational mode of management required time and could be achieved only with a great deal of top management attention and effort. (Bartlett & Ghoshal, 1998, pp. 18–19)

More specifically, in the context of sustained competitiveness in changing global

environments, Prahalad and Hamel (1990) discuss how the high-tech industry giant,

NEC, managed to be successful in a wide variety of markets through the management of

a "portfolio of core competencies" (p. 1). The organization is described as a tree, which,

as a whole, constitutes a systemic advantage and is not replicable by competitors.

Prahalad and Hamel (1990) further explain that, in the long run, competitiveness is

derived from the capacity to consistently deliver at lower costs and higher quality in

markets that will present unanticipated products. Although this is more of a process- and

product-driven approach, the fundamental principle of the importance of non-replicable

core competencies fully aligns with the TNC model as well as a complex and time-

consuming process to achieve full implementation.

Description of the transnational model. Bartlett and Ghoshal (1998) define the transnational model as a self-adaptive organization; it is a type of MNC that comes as a result of the evolution of other types of MNCs that are less capable to adapt themselves to changing international operative environments. A TNC cannot be described as a single model, a unique strategic posture, or a defined organizational design; the TNC model was developed to encapsulate the concept of a new management mentality. The benefit of this model is that it allows for many different approaches to its implementation; for instance, a TNC may centralize some resources at home, some abroad, and may distribute others among various national operations (Bartlett & Ghoshal, 1998). Specifically, Bartlett and Ghoshal (1998) describe the organizational characteristics of the transnational as differentiated from that of the multinational (see Table 5). Global and international organizations, as shown in Figure 2, also emphasize the focus of the TNC model on the configuration of assets and capabilities, the role of overseas operations, and the development and diffusion of knowledge.

Table 5

Organizational Characteristics of the Transnational

Organizational characteristics	Multinational	Global	International	Transnational
Configuration of assets and capabilities	Decentralized and nationally self-sufficient	Centralized and globally scaled	Sources of core competencies centralized, others decentralized	Dispersed, interdependent, and specialized

<div align="right">(continued)</div>

Organizational characteristics	Multinational	Global	International	Transnational
Role of overseas operations	Sensing and exploiting local opportunities	Implementing parent company strategies	Adapting and leveraging parent company competencies	Differentiated contributions by national units to integrated worldwide operations
Development and diffusion of knowledge	Knowledge developed and retained within each unit	Knowledge developed and retained at the center	Knowledge developed at the center and transferred to overseas units	Knowledge developed jointly and shared worldwide

Note. Adapted from *Managing Across Borders: The Transnational Solution* (p. 75), by C. A. Bartlett & S. Ghoshal, 1998, Boston, MA: Harvard Business Review Press.

As Bartlett and Ghoshal (1998) describe, the strategic challenge of the leader implementing the TNC model is that several elements have to come together simultaneously and be developed in unison; these elements include efficiency improvements, flexibility in responding to internal or external challenges, and the capability for learning and innovation to flourish from any location worldwide. The conceptual model being proposed to achieve this simultaneous focus on various elements, while maintaining a cohesive organization, is described as an integrated network. As shown in Figure 2, Bartlett and Ghoshal (1998) depict an approach that allows for dynamic communications and empowers any of the organization's units to contribute to development, knowledge management, and decision making.
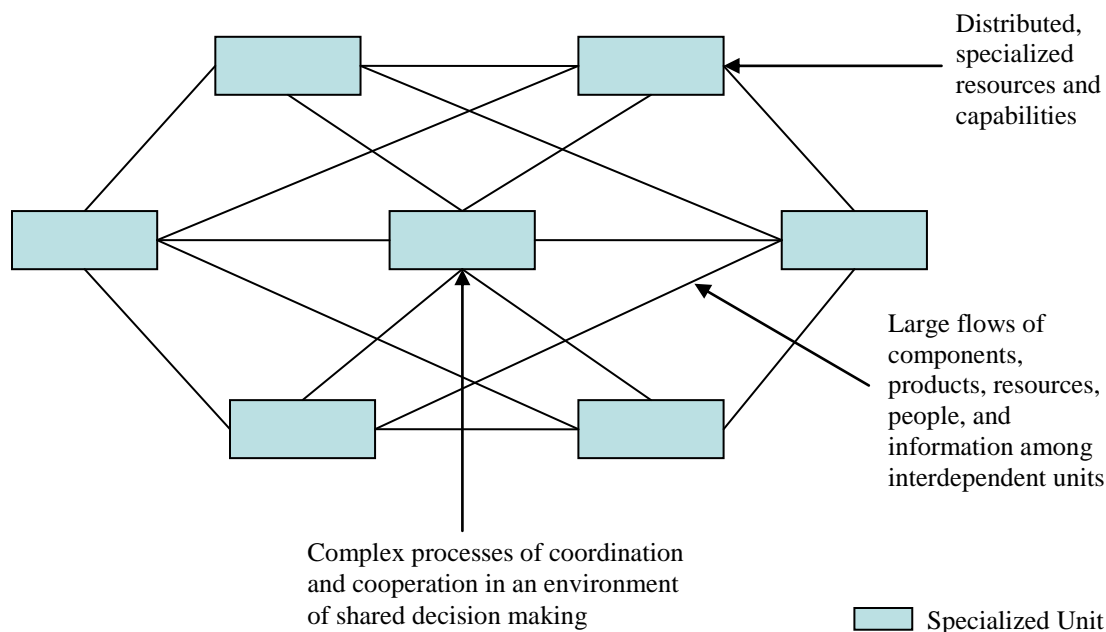
Figure 2. Integrated framework as organizational concept for the TNC. Adapted from *Managing Across Borders: The Transnational Solution* (p. 102), by C. A. Bartlett & S. Ghoshal, 1998, Boston, MA: Harvard Business Review Press.

One fundamental advantage of the TNC is that the model was developed around the fact that learning, innovation, and continuous change are increasingly important realities in the life of an organization that focuses on long-term growth and sustainability (Bartlett & Ghoshal, 1998). The TNC supports the development of what Zanfei (2000) calls internal and external networks, where a traditional, unidirectional transfer of knowledge from the parent company to subsidiaries gradually is being replaced by a model where any unit is capable to develop and circulate new information. Furthermore, these units reach out to other units and organizations that are outside of the TNC, thus creating a double-network organization that exponentially increases the amount of information accumulated and transferred (Zanfei, 2000).

Critique of the transnational model. The following is an outline of various critiques of the Bartlett and Ghoshal (1989) typology of MNCs and their model for

TNCs; the main challenge being that there is little reference to it in academic literature, especially after 2000. Some authors who have used it as reference or studied it include Harzing (2000), Leong and Tan (1993), Rugman and Verbeke (1992), Zanfei (2000), and Ghoshal and Nohria (1993).

As previously discussed, several studies have attempted to differentiate the types of MNCs and develop typologies, such as that of Bartlett and Ghoshal (1989), but empirical studies have not yet found solid support for one clearly defined typology that could drive overall consensus (Harzing, 2000). As an example, Leong and Tan (1993) tried to empirically test the Bartlett and Ghoshal (1989) typology and found that the evidence in general provided only partial support for the differences in characteristics predicted across the four organization types of Bartlett and Ghoshal (1989). Differences between TNCs and other types of MNCs were clearly defined only in reference to location of specialized skills and resources worldwide and overseas units contributing their individual strengths and know-how towards their operations (Leong & Tan, 1993).

Bartlett and Ghoshal (1989) characterize TNCs as integrated and interdependent but equivalent subunits in which headquarters do not play a dominant role. Since in this model subsidiaries may play a significant role as strategic or specialized centers for a particular product or process, there is an expectation of a high level of intra-company sales and purchases (Harzing, 2000). However, even though Harzing (2000) did find a high level of intra-company sales for both global and transnational companies, she could not differentiate between the role of headquarters and subsidiaries.

Rugman and Verbeke (1992) argue that the transaction cost-based theory of international production is a fundamental part of the core explanations of multinational

strategic management; they question the fact that Bartlett and Ghoshal's (1989) transnational solution makes little reference to this theory. Their research is centered on the idea that the transnational solution, as proposed by Bartlett and Ghoshal (1989), is highly compatible with the transaction cost-based model of multinational strategic management. Furthermore, they conclude that it is not a new theory but rather a reinterpretation of the various configurations of firm-specific advantages (FSAs), country-specific advantages (CSAs), and internationalization advantages.

Zanfei (2000) reviewed the original model of dynamic interactions as well as generation and transfer of knowledge between units and subsidiaries of a TNC and expanded it to incorporate the emergence of a *double network*. This incorporates both the traditional interconnections between a large number of internal units, which are called internal networks, and the development of external networks with other firms and institutions located outside the boundaries of the TNC. This dramatically increases the potential for generation and transfer of knowledge.

In a book review discussing the role of emerging markets in reshaping the approach to business of U.S. companies, LeMaster (1998) describes organizations following the TNC model as the companies that simultaneously meet the demands for "global efficiency, national responsiveness and worldwide innovation" (p. 181). He cautions that even though meeting these demands is what will maintain competitive advantage; this will become increasingly difficult due to the need to respond effectively to all the conflicting forces without making significant tradeoffs.

Finally, Masaru Ishida (1999) reviewed the Bartlett and Ghoshal (1998) book, opening with an acknowledgement of the practical ideas around managing various

challenges regarding technological research, new product development, supply,

production, distribution, sales, and marketing, as well as discussing the importance of

human resources management in global business integration, corporate philosophy,

values, mission and vision statements, communications, cooperation, and commitment.

On the downside, Ishida mentions that the book has nothing to say about financing

strategies for global business development: In an open financial market, financial

management and capital procurement strategies need to play a fundamental role in the

development of a global business strategy. Topics such as foreign direct investment,

mergers and acquisitions, equity financing, and the impact of free trade are key elements

for the long-term sustainability model the book advocates. Furthermore, the inclusion of

successful social initiatives and good environmental practices also are critical factors

missing in Bartlett and Ghoshal's (1998) description of successful organizations.

Despite the criticism, possible missing components, and lack of sufficient

empirical evidence to fully validate the Bartlett and Ghoshal (1989) typology of MNCs

and their model for TNCs, the same authors also clarify the value and validity of the

model. Leong and Tang (1993) outline that the typology represents a significant

contribution to the literature on international business, since it "furnished a more fine-

grained delineation of the evolution, structure, and orientation of the four organizational

types not before accomplished" (p. 450); they add that the typology provides propositions

for additional empirical testing and suggests aspects that require additional conceptual

attention. Bartlett and Ghoshal (1989) propose that the TNC model would be most

effective and efficient in the future. In this context, Leong and Tan (1993) state that

"perhaps the most important area meriting research attention is whether transnationals do

indeed outperform other organizational types across countries and industries over time"
(p. 463).

Definition of Radical Transformation Process

> **Discussion regarding change.** The only constant in business seems to be change; therefore, an approach where strategy is derived from static paradigms would fail. In the political, economic, social, and technological arenas, the rules of engagement and interaction dynamics have drastically changed in the past 10 years (Bartlett & Ghoshal, 1998). In this context, Bartlett and Ghoshal (1998) explain that organizations need to be sensitive and respond to these changes in both national and global environments in different ways, depending on the forces influencing change and the specificities of each industry.

MNCs in general face steep challenges that force them to periodically make significant changes in order to sustain or create new competitive differentiators. As Porter (1986) discusses, MNCs need to adjust their strategies to the changing pattern of international competition that has been emerging since the late 1970s. Furthermore, Porter adds that organizations, in order to effectively compete at a global level and develop competitive differentiations, need to determine an optimal configuration and coordination of activities. This means making decisions on location, business model, or process engineering and linkages between organizational constructs.

Roth and Morrison (1990), in explaining the integration-responsiveness framework, also state that MNCs, in order to secure competitive advantages, in relation to both other MNCs and domestic firms, must meet local demands and capitalize on

worldwide competitive advantages. This balance between global and local competitors presents a scenario where each global industry is a single market of its own rather than the sum of various local competitive environments.

In his study of strategic organizational development, Head (2006) explains that the main issues that drive the need for transformation often are beyond the control of the organization, but failure in implementing large-scale organizational development processes often comes from the inability to proactively adapt correctly. The forces that create the need for change in an organization, as Head lists, include lifting of significant regulatory requirements, a new external CEO charged with transformation, and technological breakthroughs as well as a fundamental shift in the industry's framework, significant movement in product life cycle, and significant change in organization size (Tushman, Newman, & Romanelli, 1986).

Due to the broad scope of changes that face organizations, discussions regarding change usually are found in a broad scope of academic business literature, as seen in the research of Kostova (1999), who studied the success factors behind successful transfer of organizational practices; Rooney (2005), who discussed the case of Toyota's multiplication of continuous improvement practices at a large scale within their organization; and Jones (2002), who outlined the importance of strategic alignment in restructuring processes to enhance the efficiency and effectiveness of such processes in MNCs. In these environments of change and unprecedented circumstances, the probability of failure for organizations that go through radical transformations is largely increased (Erakovic & Wilson, 2006).

Radical transformation. Although there is no formal definition for the term

radical transformation process, Erakovic and Wilson (2006) refer to the characteristics of

a "radical change pathway" (p. 485) in the public sector, describing a combination of

market and technological factors and both de-institutionalization and institutionalization

of new norms and practices. Other references include the case studies of Kawalek and

Wastall (2005) regarding the impact of process design methodology and IT

transformation projects in achieving radical change in the complex context of e-

government as well as the study of the impact of radical changes in the declining viability

of the Israeli kibbutzim (Sheaffer et al., 2011), equating the term radical change to

"transformational change" (p. 299) and discussing the impact in ideology, demographic

depletion, and financial distress. Sheaffer et al. (2011) found that the magnitude of radical

change has a positive correlation with the degree of financial distress in kibbutzim and

that radical change in kibbutzim representing federations that demonstrate stronger

culture result in higher financial distress, pointing to a greater resistance to change and

lesser capability to adapt to new realities and alternative business models.

In the context of private sector organizations, Bartlett and Ghoshal (1988)

describe the impact of Japanese managerial models developed in the 1960s and 1970s

that coincided with a rapid globalization process and growth of MNCs. They also

describe a multifactorial change process that combined changing technologies, the

increase in scale of economies and industry structures, and the emergence of

sophisticated competitive strategies. These trends are still driven by the Asian continent

and the BRICM countries and are creating what Prasad (2006) describes as a "radical

transformation of the economic landscape of the world" (p. 108). His discussion on

globalization and radical economic transformation goes on to describe the post-Fordism manufacturing system, characterized by flexible work models and a shift from mass-production to batch-production, and the impact of sustained demographic and economic growth in countries such as China and India. Prasad (2006) concludes that, in order to survive and prosper in this environment of radical change, organizations will "require an extraordinary degree of creativity and ingenuity, continual innovation, and a willingness to give up established patterns of thought and old mindsets" (p. 114).

In summary, radical transformation processes within MNCs can be triggered by radical transformations in market, industry, macroeconomic, or geopolitical environments; and organizations will need to quickly adapt, invest, and fundamentally challenge their business models, technology, and relationship dynamics in order to survive and attain market leadership.

Organizational Performance

While organizational performance can be assessed though financial and non-financial indicators, this study mainly uses financial indicators and adds share price performance to recognize the importance of this indicator in a quantitative assessment of publicly-traded companies. Although Cohen, Holder-Webb, Nath, and Wood (2012) outlined the limitations of historical financial information, specifically in evaluating future performance prospects, this research addresses a 5-year span starting in 2007 and encompassing the 2008–2011 period to cover the current global financial recession.

An organization's financial performance. For the purpose of this study, six financial performance indicators have been selected, including variables directly

controlled by the organization, such as annual revenue (REV), gross margin (GM), return on sales (ROS), earnings before interest, tax & depreciation (EBITD), and EBITD to REV ratio, as well as one variable that is greatly driven by external market and investor forces, which is the share price performance (SPP). One critical complication in using any type of data to compare companies is the lack of adequate disclosure and the inconsistency in application of accounting and auditing standards in the past 30 years, as Koprowski, Arsenault, and Cipriano (2010) discuss; therefore, these six indicators have been selected because they are consistently calculated and readily available for all selected companies, regardless of their country of origin and the stock market where they are traded.

Chapter Summary

In summary, this chapter started with defining the term MNC using a progression of views stemming from that of Robock and Simmonds (1983), Higgins (1994), Mead (1998), Kogut and Zander (2003b), and Cantwell et al. (2010). The chapter then discussed the research regarding the typologies of MNCs as summarized by Harzing (2000) and Sundaram and Black (1992) using the studies of Bartlett and Ghoshal as reference points as well as complemented discussions on MNC intra- and inter-organizational dynamics and MNC performance. Also, the Bartlett and Ghoshal (1989) typology of MNCs and their model for TNCs was explained and critiqued with the contributions of Zanfei (2000), Leong and Tan (1993), Rugman and Verbeke (1992), and Ghoshal and Nohria (1993), covering various studies and points of view.

Finally, the term *radical transformation process* was defined as it pertains to the scope of this study, using the cases studied by Erakovic and Wilson (2006), Kawalek and Wastall (2005), Sheaffer et al. (2011), and Prasad (2006); and a discussion on organization performance that delimited the framework of this study to financial performance of TNCs in comparison to that of other MNCs was included.

As established during the literature review, it is clear that MNCs will continue to face periodic challenges that will demand change and even transformation in various dimensions; also, it is clear that there is no one answer, theory, or business model that provides an all-purpose response as to how MNCs should face those challenges. Prior research has identified the need for further studies regarding the efficacy of the TNC model using "objective performance measures that are comparable across countries" (Harzing, 2000, p. 116) as well as the need to assess the performance and success of organizations catalogued as TNCs in comparison to other types of MNCs (Leong & Tan, 1993).

Chapter III presents hypotheses and the research method to further advance the discussion on performance of TNCs and radical transformation processes. Based on the paper of Malina, Norreklit, and Selto (2011) on the usage of mixed methods for management doctoral dissertations, this research follows the view that the research method(s) chosen should be those that provide the best opportunities for answering the research questions. Further arguing that point, academic literature is filled with studies using linear regression to confirm relations, which leaves many phenomena not well understood. Both the quantitative and qualitative elements of the research are explained, as well as the mixed method proposed for this study; with the objective to gain a broader

understanding of the performance of MNCs when going through radical transformation

processes.

Chapter III

Methodology

Overview

Chapter I discussed the transnational model, following the typology of Bartlett and Ghoshal (1989), as an evolved model of MNC where emphasis is placed on the embracement of innovative activities, international dispersion, the role of overseas operations, heavy investment in R&D, the configuration of assets and capabilities, the interaction between subsidiaries with their local context, and the development and diffusion of knowledge. It is argued that organizations defined as having successfully adopted the transnational model, as per Bartlett and Ghoshal (1989), and labeled as TNCs will have a significantly better financial performance than other MNCs when going through a radical transformation process.

Chapter II examined the following topics: (a) a definition and typologies of multinational companies using the Bartlett and Ghoshal (1989) global, multidomestic, and transnational typology of MNCs as a point of reference but discussing other major typologies; (b) a definition and characteristics of transnational companies, simply explained as a "think global, act local" model; and (c) a definition of the term radical transformation process as a type of change that has the potential to create sufficient challenges to put at risk the financial viability of an organization.

Chapter III presents the details of this study's planned research question; the research design, including the definition of a single dependent variable being the categorization of a multinational organization as a TNC or not; six independent variables all related to a company's financial performance and its share price performance;

research hypotheses statements; data analysis procedures; and assumptions and limitations.

Research Question

This study addresses the following research question: Do organizations that were defined as having successfully adopted the transnational model, as per Bartlett and Ghoshal (1989), and labeled as transnational companies (TNC), perform significantly better than other multinational companies (MNC) when going through radical transformation processes?

Answering this question will contribute to a MNC's assessment of whether it would be justified to invest the time and resources and take the concurrent risks in order to evolve from a global or multidomestic model to that of a TNC. The search for the answer to this research question focuses on the financial performance of TNCs during the current global economic recession, which is a trigger for radical change in organizations such as those driven by widespread institutional transformation as Cantwell et al. (2010) describes.

Research Design

This study follows a mixed methodology, also known as the third research paradigm (Johnson & Onwuegbuzie, 2004), following quantitative and qualitative research methods that Jogulu and Pansiri (2011) describe as "a profoundly comprehensive technique for research in social sciences through integration of thematic and statistical data" (p. 688). The purpose of selecting this method is to allow the

qualitative analysis to further explain and validate the quantitative results of this research. As Jogulu and Pansiri depict in Figure 3, the approach followed is a concurrent QUAN + qual mixed method, where the quantitative element is dominant over the qualitative element, and data for both are collected concurrently.
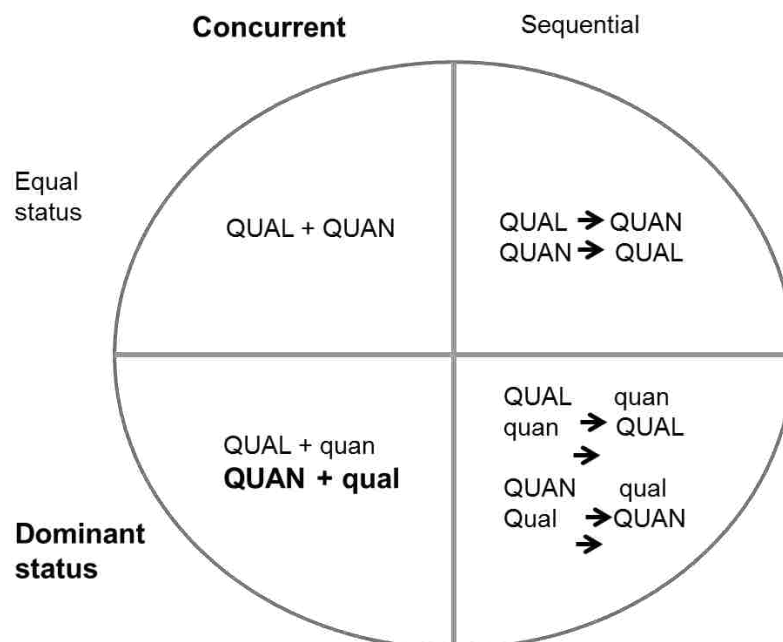
Figure 3. Mixed methods design matrix.

Various studies exhort the advantages of mixed methods and the fact that these are increasingly popular in business-related academic research. Malina et al. (2011), in their assessment of advantages and disadvantages of mixed method research, conclude that using a mixed method approach provides the best opportunity for addressing research questions, and that it allows the researcher to return to the qualitative data and reread the information in the context of the larger document.

The quantitative element focuses on assessing the financial performance of MNCs that have successfully applied the TNC model in the past 5 years as well as focuses on MNCs before and after going through a radical transformation process, and it compares this to average industry performance and major MNC competitors that are not classified as TNCs. Secondary data was used to assess financial performance over the 2007–2011 period, which encompasses the 2009 global financial crisis as an example of a period that forced radical change in all organizations as they weathered the economic downturn and decrease in global demand. Companies selected all are publicly traded due to data availability of both financial figures and annual reports.

The qualitative element of this study, as Bak (2011) discussed in a study of e-business enabled transformations, allows one to gain depth in the understanding of the transformation, which is difficult to understand without participating in the actual transformation effort. The qualitative element is used to complement the discussion on findings stemming from the quantitative element; therefore, the quantitative element has a dominant status over the qualitative element. In this context, the role of the qualitative element is to further explain the quantitative results and enhance the validity and reliability of the study (Jogulu & Pansiri, 2011).

This study consists of a series of five in-depth semi-structured interviews to answer the question, "What's happening now?," 23 years after Bartlett and Ghoshal (1989) categorized these organizations as TNCs. It also is an assessment of the existence and perceived role of the characteristics of TNCs in the performance of these organizations and their capacity to successfully go through radical transformation processes. The seven characteristics of TNCs discussed are the embracement of

innovative activities, international dispersion, the role of overseas operations, heavy investment in R&D, the configuration of assets and capabilities, the interaction between subsidiaries with their local context, and the development and diffusion of knowledge (Bartlett & Ghoshal, 1989).

Variables: Dependent and Independent

The conceptual framework proposed in this research seeks to identify the relationship between one dependent variable and six independent variables all related to an organization's financial performance. The objective is to improve the understanding of a MNC's performance related to radical transformation processes, when the organization is categorized as a TNC in comparison to when it is not.

The dependent variable in this study is the categorization of a multinational organization as a TNC, which is represented as a binary dependent variable, where 0 (zero) represents MNCs categorized as having successfully applied the TNC model, and 1 (one) represents MNCs that are not categorized as TNCs. The categorization is based on the organizations covered in the Bartlett and Ghoshal (1989) research. The independent variables are share price performance compared to industry average (SPP); annual revenue (REV); gross margin (GM); return on sales (ROS); earnings before interest, tax, and depreciation (EBITD); and EBITD to REV ratio or EBITD margin (EBITD/REV).

Population and Sample

This study evaluates six MNCs defined as having successfully adopted the

transnational model at the time of the Bartlett and Ghoshal (1989) research (see Tables 6

and 7).

Table 6

MNCs to be Studied, Their Stock Exchange, and Trading Symbol

Company name	Stock exchange	Trading symbol
Panasonic Corporation (Matsushita)	New York Stock Exchange (NYSE)	PC
Philips	Amsterdam Euronext (AEX)	PHG
Unilever	Amsterdam Euronext (AEX)	UN
Procter & Gamble	New York Stock Exchange (NYSE)	PG
LM Ericsson Telephone Company (Ericsson)	Nordic Stock Exchange (OMX)	ERIC-B
NEC Corporation	Tokyo Stock Exchange (TSE)	NEC Corp 6701:JP

Table 7

Other MNCs to be Studied, Their Stock Exchange, and Trading Symbol

Company name	Stock exchange	Trading symbol
LG	Korea Exchange (KRX)	066570
Toshiba	Tokyo Stock Exchange (TSE)	6502
IBM	New York Stock Exchange (NYSE)	IBM
Hewlett Packard	New York Stock Exchange (NYSE)	HPQ
Nokia	New York Stock Exchange (NYSE)	NOK
Microsoft	NASDAQ	MSFT
Apple	NASDAQ	AAPL
Intel	NASDAQ	INTC
Johnson & Johnson	New York Stock Exchange (NYSE)	JNJ
Kimberly-Clark	New York Stock Exchange (NYSE)	KMB
Colgate	New York Stock Exchange (NYSE)	CL
Motorola	New York Stock Exchange (NYSE)	MSI
Research in Motion	NASDAQ	BBRY
Vonage Holdings	New York Stock Exchange (NYSE)	VG
Sierra Wireless	NASDAQ	SWIR
Qualcomm	NASDAQ	QCOM
ARRIS Group	NASDAQ	ARRS
Dolby Laboratories	New York Stock Exchange (NYSE)	DLB
General Electric	New York Stock Exchange (NYSE)	GE
Kao Corporation	Tokyo Stock Exchange (TSE)	4452

TNCs defined as having successfully and unsuccessfully adopted the transnational

model, at the time of the Bartlett and Ghoshal (1989) study, as well as other MNCs added

to this research are listed in Table 8 grouped by industry to increase the comparability

between TNC and MNC financial performance:

Table 8

MNCs to be Studied, and Their Original Classification as TNC as per Bartlett and Ghoshal (1989)

Industry	Successful application of TNC model	Unsuccessful application of TNC model	Other MNCs added for this research
Consumer electronics	- Matsushita (Panasonic Corporation) - Philips	- General Electric (consumer electronics business)	- LG, Toshiba, IBM, HP, Microsoft, Nokia, Apple, Intel
Branded packages products / Personal care products manufacturing industry	- Unilever - Procter & Gamble (P&G)	- Kao	- Johnson & Johnson, Kimberly-Clark, Colgate
Telecommunications (Communications equipment)	- Ericsson (Sony Ericsson) - NEC	- ITT (Telecommunications business)	- Motorola, Research in Motion, Vonage Holdings, Sierra Wireless, Qualcomm, ARRIS Group, Dolby Laboratories

Data Collection Instruments

The quantitative component of this research is based on secondary data sources,

including publicly available official company reports, financial performance, and

industry expert analyses. Close attention was paid to the methodological requirements that are relevant to qualitative inquiry, being fully aware of the limits of scientific discussions based on qualitative empirical data and putting all information into a "broader historical, societal, and ideological context" (Diefenbach, 2009, p. 893). Therefore, the findings are more than "narrative tales or storytelling," as Denzin (1998, p. 314) states.

The qualitative component of this research is a series of five semi-structured in-depth interviews that follow the phenomenological approach. A larger sample is not deemed necessary since, although increasing the number of interviews might improve the quality of the data and may show emerging patterns, it will not increase the validity of the findings (Diefenbach, 2009). A definition of phenomenology that allows for a bridge between classical usage and a more modern application to business and management is presented in the *Stanford Encyclopedia of Philosophy*:

> The discipline of phenomenology may be defined initially as the study of structures of experience, or consciousness. Literally, phenomenology is the study of "phenomena": appearances of things, or things as they appear in our experience, or the ways we experience things, thus the meanings things have in our experience. Phenomenology studies conscious experience as experienced from the subjective or first person point of view. (Smith, 2011, "What is Phenomenology?," para. 2)

This definition incorporates terms such as structures, experience, appearance of things, and meaning of things that are directly applicable to understanding the elements of TNCs and their perceived contribution during radical transformation processes.

The target audience is executives at management levels who potentially have sufficient exposure to the organization's strategy and its implementation to provide pertinent insight; this includes regional, country, or functional leaders at regional or country level. Purposive selection was used to identify respondents. As Pansiri (2006) explains, this qualitative sampling method allows the researcher to decide which members of the population are most likely to provide answers to the research question and purposefully select them to be a part of the sample.

The interview questions were designed to be short and specific and applied for all three interviewees. An interview protocol was developed to address the following seven elements of TNCs, as per Bartlett and Ghoshal (1989):

- embracement of innovative activities,

- international dispersion,

- the role of overseas operations,

- heavy investment in R&D,

- the configuration of assets and capabilities,

- the interaction between subsidiaries with their local context, and

- the development and diffusion of knowledge.

The interview protocol was piloted with one executive to see whether the questions were clearly understood, and appropriate changes were made as pertinent. The data was collected from executives of organizations that fall under the scope of this research, as listed in Table 8.
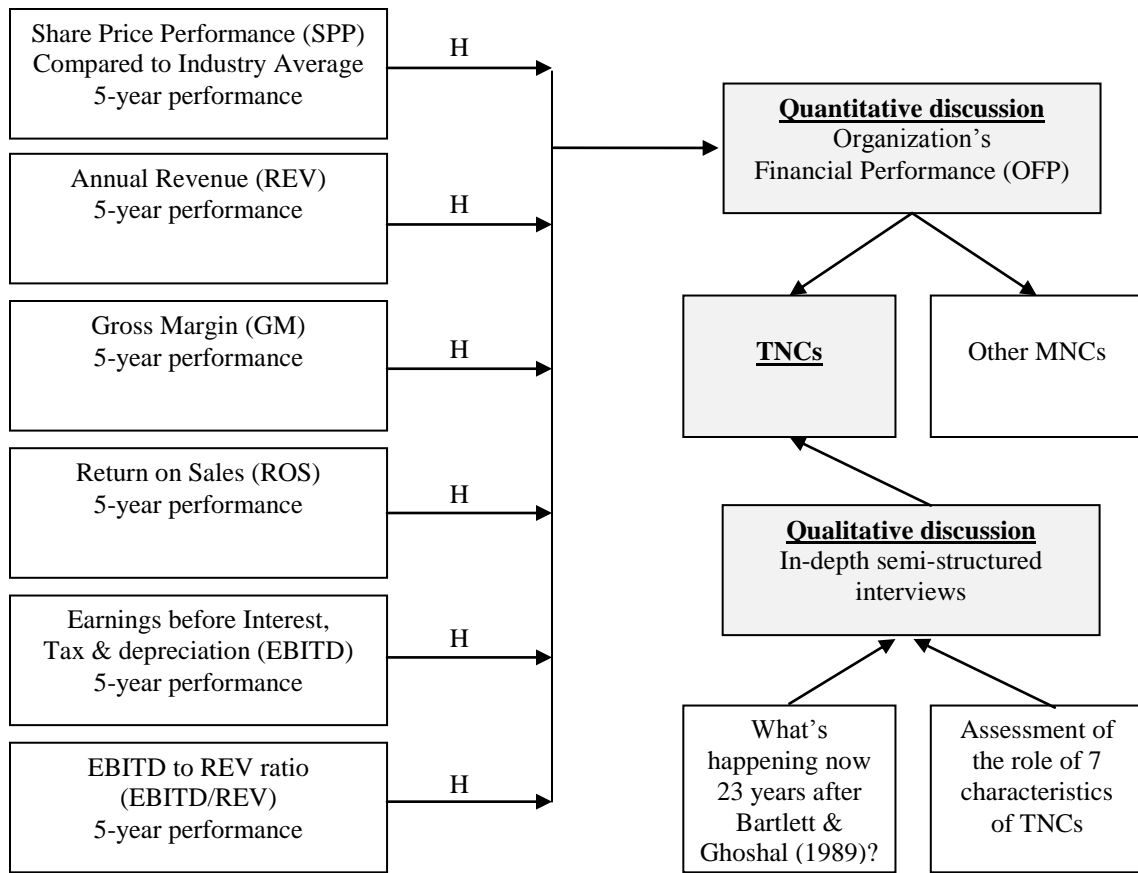
Figure 4. Research model.

The research model in Figure 4 integrates six independent variables to compile a consolidated view of an organization's financial performance. Each variable may have a different behavior depending on internal and external factors, but the combination of these may provide a more conclusive reading of financial performance, which would be comparable to that of other organizations.

Research Hypotheses

In order to develop a comprehensive view of the financial performance of the TNC and other MNC that was reviewed, the following hypotheses were tested, focusing

on six financial indicators that span from investor driven, thus external to the day-to-day

functioning of an organization, to top and bottom line, thus internally controlled and

directly managed by the executive of an organization.

Share price performance is a measure of the returns on shares over a period of

time. There are a number of measures of stock performance, and each includes its own

characteristics and benefits during an analysis of returns. Stock performance includes two

separate components: capital gains or losses and dividends (Sandler, 2011). The periods

over which stock returns were measured in this study were monthly, annually, and

cumulatively over a 5-year period; in this case only capital gains or losses were

considered in order to have a truer picture of external behavior of investors when

evaluating each organization as an attractive investment. Capital gains and losses are the

result of stock price movements or fluctuations: A gain is the result of an increase in price

while a loss is the result of a decrease in price. Stock performance was calculated using

the formula for calculation of returns. Suppose an investor purchased a stock last year for

$100 and the price of the shares today is $120: The share price performance of the stock

is 20% [(120 - 100) / 100]. Similarly, if the stock price had decreased to $70, the stock

performance returns would be negative 30% [(70 - 100) / 100] (Sandler, 2011).

Hypothesis 1

$H1_0$: MNC 5-year Share Price Performance (2007–2011) is negatively

or not related to having successfully applied the TNC model as per

Bartlett and Ghoshal (1989).

H1$_a$: MNC 5-year Share Price Performance (2007–2011) is positively

related to having successfully applied the TNC model as per

Bartlett and Ghoshal (1989).

An organization's revenue is its measure of "top line" or gross income from

where all other costs are deducted to finally assess a company's "bottom line" or EBITD;

it is defined as "the inflow of assets, the reduction in liabilities, or both, from transactions

involving an enterprise's principal business activity (e.g. sales of products and services);

also referred to as turnover or total trading transactions" (Haskins, Ferris, & Selling,

2000, p. 540). It is the starting point for assessing a company's financial performance.

REV is simply calculated by multiplying the price at which goods or services are sold by

the number of units or amount sold; this amount was measured annually.

Hypothesis 2

H2$_0$: MNC 5-year REV performance (2007–2011) is negatively or not

related to having successfully applied the TNC model as per

Bartlett and Ghoshal (1989).

H2$_a$: MNC 5-year REV performance (2007–2011) is positively related

to having successfully applied the TNC model as per Bartlett and

Ghoshal (1989).

An organization's gross margin (GM), also known as gross profit, is defined as "a

measure of a company's profit on sales calculated as net sales minus the cost of goods

and services sold" (Haskins et al., 2000, p. 536). As an example, in a manufacturing

company, the cost of goods sold is calculated by adding the beginning merchandise inventory to the cost of goods purchased and deducting the ending merchandise inventory (Weygandt, Kieso, & Kell, 1996). This is the first step from top to bottom line and was measured annually.

Hypothesis 3

$H3_0$: MNC 5-year GM performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

$H3_a$: MNC 5-year GM performance (2007–2011) is positively related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

An organization's return on sales (ROS), also known as operating profit margin, is a financial ratio frequently used to assess an organization's operational efficiency; it is defined as "a measure of profitability calculated as the percentage of each sales dollar earned as net income (i.e. net income after tax divided by net sales)" (Haskins et al., 2000, p. 540). This ratio provides insight into how much profit is being produced per dollar of sales; increases in ROS show that an organization is becoming more efficient, and ROS was calculated annually.

Hypothesis 4

$H4_0$: MNC 5-year ROS performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

H4$_a$:   MNC 5-year ROS performance (2007–2011) is positively related

to having successfully applied the TNC model as per Bartlett and

Ghoshal (1989).

An organization's earnings usually means the same as income; earnings before

interest, tax, and depreciation (EBITD) is defined as a measure that attempts to gauge a

firm's profitability before any legally required payments, such as taxes and interest on

debt, are paid. Depreciation is removed because this is an expense the firm records but

does not necessarily have to pay in cash (Investopedia, 2011). It is essentially an

organization's revenues, minus expenses, excluding taxes, interest, and depreciation—in

other words, what is understood as an organization's bottom line. EBITD was measured

annually.

Hypothesis 5

H5$_0$:   MNC 5-year EBITD performance (2007–2011) is negatively or not

related to having successfully applied the TNC model as per

Bartlett and Ghoshal (1989).

H5$_a$:   MNC 5-year EBITD performance (2007–2011) is positively

related to having successfully applied the TNC model as per

Bartlett and Ghoshal (1989).

Finally, EBITD to REV ratio, also known as EBITD to sales ratio or EBITD

margin (EBITD/REV), is a financial ratio used to assess a company's bottom line

profitability by comparing its revenue with its earnings; this is the ratio that bridges the

gap between top and bottom line by indicating the percentage of an organization's remaining revenue after all direct operating expenses.

Hypothesis 6

$H6_0$: MNC 5-year EBITD to REV ratio (EBITD/REV) (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

$H6_a$: MNC 5-year EBITD to REV ratio (EBITD/REV) (2007–2011) is positively related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

Data Analysis

The relation between financial performance and TNCs, as opposed to other MNCs, was assessed through a binary logistic regression. As Hair, Black, Babin, and Anderson (2009) describe, along with discriminant analysis, it is the appropriate technique when the dependent variable is a categorical variable and the independent variables are metric or non-metric variables. All six independent variables were considered independently as well as aggregated to obtain a comprehensive picture of financial performance and to increase the number of observations, thus better supporting the estimation of the logistic model. The logistic model uses maximum likelihood (MLE) as the estimation technique; this implies the need for a larger sample than for multiple regressions and assumptions, such as all things being equal, to be made.

The requirements for the recommended number of observations for the dependent variable is higher than for multiple regressions (Hair et al., 2009); in this case this study

considers six TNCs and 18 other MNCs, for a total numbers of observations of 24 organizations.

Table 9 shows the consistency matrix for this study outlining the propositions, sources of information, instruments, and methods of analysis to be used.

Table 9

Consistency Matrix

Proposition	Source (Reference)	Instrument item	Method of analysis
	Quantitative Portion		
Being an organization that has been catalogued as having successfully applied the TNC approach as per Bartlett and Ghoshal (1989) is positively related to having strong share performance when compared to industry average in the 5-year period of 2007–2011.	- Official Company websites (publicly available Annual/Financial Reports), see Appendices D & E for detailed list	Secondary Data	Binary logistic regression
MNC 5-year REV performance in positively related to having successfully applied the TNC model.	- Hoovers Company Profiles- ProQuest (http://search.proquest.com.ezproxylocal.library.nov a.edu/hooverscompany/advanced?accountid=6579& language=def&trials=hide)	Secondary Data	Binary logistic regression
MNC 5-year GM performance in positively related to having successfully applied the TNC model.	- Fidelity Brokerage Services (https://www.fidelity.com/)	Secondary Data	Binary logistic regression
MNC 5-year ROS performance in positively related to having successfully applied the TNC model.	- Key Business Ratios- Mergent (http://kbr.dnb.com.ezproxylocal.library.nova.edu/K BR_Main.asp)	Secondary Data	Binary logistic regression
MNC 5-year EBITD performance in positively related to having successfully applied the TNC model.	- ProQuest Asian Business & Reference- ProQuest (http://search.proquest.com.ezproxylocal.library.nov a.edu/asianbusiness/advanced/1356452AA514DB8 C0BC?accountid=6579)	Secondary Data	Binary logistic regression
MNC 5-year REV to EBITD conversion rate performance in positively related to having successfully applied the TNC model.		Secondary Data	Binary logistic regression

(continued)

Qualitative Portion

Proposition	Source (Reference)	Instrument item	Method of analysis
Validate the contribution of the following seven elements of the Transnational Approach in enabling an organization to successfully go through a radical transformation process: - Embracement of innovative activities - International dispersion - Role of overseas operations - Heavy investment in R&D - Configuration of assets and capabilities - Interaction between subsidiaries with their local context - Development and diffusion of knowledge	Five Interviews to N2 & N-3 Executives from: Matsushita (Panasonic Corporation), Philips, Unilever, Procter & Gamble (P7S), Ericsson (Sony Ericsson) and NEC	In-depth Interview Questionnaire	Phenomenological approach

The qualitative portion of this study is conducted as a semi-structured interview approach, differing from a structured or standardized interview in that it is more flexible, allowing new questions to be brought up during the interview as a result of what the interviewee says. As Diefenbach (2009) discusses, this approach allows for more methodological freedom, but, on the other hand, it requires more methodological rigor on the research design.

The interviews were analyzed using the 7-step process for grounded theory approach to qualitative data analysis, described by Easterby-Smith, Thorpe, and Lowe (2002). These steps are familiarization with the data, including researcher notes made during the interviews; reflection and preliminary conceptualization of the data; coding, recoding, and linking of the codes and data; and finally reevaluating the links between the resulting patterns, themes, and sub-themes of the original data. Elements of the narrative analysis method, as Jogulu and Pansiri (2011) explain, were applied, where the analysis begins from the basis of the verbatim transcripts and allows the researcher to retain the integrity of the data collected. Focus was placed on quoting narratives from the executives' explanations of their observations and experiences.

The analysis was performed using the NVIVO version 9 qualitative data analysis software package, issued in 2010. Although version 10 was available, the added features to categorize and analyze data from social media were not applicable to this study. This software is widely used in qualitative and mixed-method business research. Some recent research examples include the Nair, Malhotra, and Ahire (2011) study, which examined the interrelationships among Six Sigma process improvement projects' elements and success through in-depth field investigation of 10 Six Sigma projects; and the Amel and

Akkari (2012) study, which explored the links between entrepreneurial failures in start-ups versus older entrepreneurial ventures through the analysis of in-depth interviews with four entrepreneurs.

Assumptions and Limitations

The typology of multinational companies developed by Bartlett and Ghoshal (1988) is a valid model to use as the basis for this study. In her study of typology of multinational companies, Harzing (2000) extended the analysis of Bartlett and Ghoshal, concluding that their results "can be confirmed in a large-scale empirical setting" (p. 116).

A *ceteris paribus*, or all things being equal, assumption can provide meaningful conclusions for understanding both TNCs and radical transformation processes. It is clear that every organization will have different characteristics if analyzed in enough depth, and several internal and external driving forces will have varied effects on every radical transformation process; having said that, attempting to do an all-inclusive analysis would be unmanageable in a single study.

This study assumes that the information sources to be used for collecting secondary data, such as official company sites and publicly available information published by financial institutions, is accurate and valid. Also, the executives to be interviewed are assumed to be knowledgeable of their organization, competent, reliable, and honest in their responses. Since the interviewees were either current executives of the organization or limited by non-disclosure agreements, the level of detail and freedom to share concrete examples may have been limited. In addition, depending on their role in

the organization, interviewees may have had a skew towards a specific division, function, or geographic location.

Based on the fact that the implementation of the TNC approach is a challenging one for MNCs, since "the Transnational is less a structural classification than a broad organizational concept or philosophy, manifested in organizational capability and management mentality" (Bartlett & Ghoshal, 1998, p. 296), organizations that follow this model develop over time the organizational capabilities and characteristics that are called the TNC approach. This study assumes that the organizations categorized as having successfully implemented the TNC approach by Bartlett and Ghoshal (1989) have sustained most of the characteristics of the model. This was further validated through the in-depth interviews.

The selection of only six TNCs is due to the small number of organizations that were studied and categorized by Bartlett and Ghoshal (1989) as part of their research; a large sample of non-TNCs was included to increase the statistical validity of the quantitative analysis.

Chapter Summary

Chapter III presented the plan for the mixed methodology to be applied in this study, seeking to address the following research question: Do organizations that were defined as having successfully adopted the transnational model, as per Bartlett and Ghoshal (1989), and labeled as transnational companies (TNC), perform significantly better than other multinational companies (MNC) when going through radical transformation processes? Six organizations that have successfully applied the TNC

approach and 18 other MNCs that are direct competitors in each of the three industries represented are the representative sample for this research.

Financial performance was assessed using six indicators collected through secondary data, and analysis was performed using binary logistic regressions. The qualitative portion of this study was done through five semi-structured in-depth interviews with TNC executives; the data was analyzed using the 7-step process for grounded theory approach to qualitative data analysis described by Easterby-Smith et al. (2002), using NVIVO version 9. In a broad sense, this study aims to be useful in guiding non-TNC multinationals in deciding whether to invest in adopting characteristics of the transnational approach as a way to be more successful when going through radical transformation processes.

<center>**Chapter IV**</center>

<center>**Analysis and Presentation of Findings**</center>

Introduction

      The purpose of this study is to answer the following research question: Do organizations that were defined as having successfully adopted the transnational model, as per Bartlett and Ghoshal (1989), and labeled as transnational companies (TNC), perform significantly better than other multinational companies (MNC) when going through radical transformation processes? This research question is answered through a mixed method research design. The first part uses a quantitative research approach and evaluates the financial performance of TNCs selected from the Bartlett and Ghoshal (1989) research, using secondary data sources. The second part uses a qualitative approach based on empirical research to answer the question, "What's happening now, 25 years later?," through a series of five in-depth interviews. Qualitative data was analyzed to discuss the contribution of the characteristics of TNCs to the performance of these organizations and their capacity to successfully go through radical transformation processes. This chapter presents and discusses the key findings of the research.

      Chapter IV is organized by presenting the quantitative research findings followed by the qualitative research findings; this is consistent with the fact that, based on the Jogulu and Pansiri (2011) mixed method matrix design, depicted in Chapter III, Figure 3, the approach selected defines the quantitative portion of the study as having dominant status over the qualitative portion.

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Quantitative Research Findings and Discussion

This section describes the results of the hypotheses testing for the quantitative portion of the research model in Figure 4. The research question is as follows:

Do organizations that were defined as having successfully adopted the transnational model, as per Bartlett and Ghoshal (1989), and labeled as transnational companies (TNC), perform significantly better than other multinational companies (MNC) when going through radical transformation processes?

A binary logistic regression was used to assess the financial performance of TNCs in comparison to MNCs in each of the six financial indicators; data from six TNCs and 20 MNCs were aggregated in order to obtain a comprehensive picture and increase the number of observations, thus strengthening the results of the regression. The six null research hypotheses are summarized below:

$H1_0$:   MNC 5-year Share Price Performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

$H2_0$:   MNC 5-year REV Performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

$H3_0$:   MNC 5-year GM Performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

$H4_0$: MNC 5-year ROS Performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

$H5_0$: MNC 5-year EBITD Performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

$H6_0$: MNC 5-year EBITD to REV ratio (EBITD/REV) (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

Quantitative data collection approach. Since all MNCs and TNCs selected for this study are publicly traded companies, the financial indicators secondary data was obtained from the most recent annual reports available; most of these reports include multiyear financial data from previous periods for comparison and analyses purposes. In some cases, the information from one year is adjusted on the next year as part of regular financial practices, accounting standards, and disclosure requirements. For example, if the 2011 financial information in a company's 2011 annual report needs to be corrected following a periodic external audit, the figure may need to be retroactively corrected in the company's 2012 annual report; the most recent and updated information was used for this research.

Depending on the country of origin of each company and the stock market where each share is traded, as described in Tables 6 and 7, Appendix F, and Appendix G, the annual reports may display currencies other than the U.S. Dollar (USD); for example,

Japanese Yen (JPY), Swedish Krona (SKR), or Euro (EUR). In these cases the values were converted to USD using the same fixed exchange rate as of December 31, 2011, as shown in Table 10; this is because the observation covers a period of 5 years between January 1, 2007, and December 31, 2011. All electronic sources of information for quantitative secondary data are listed in Appendix E.

Also, based on the financial reporting practices of a specific country or company, different nomenclatures for similar financial indicators were used. For the purposes of this study the closest equivalent indicator was selected; as an example, the financial indicator Operating Profit (OP) was considered equivalent to Earnings Before Interests and Taxes (EBIT). Because the analysis focused on the variations of each indicator over time and not the absolute values of these indicators, there was no impact on the findings, as long as the same variable was used consistently for each individual company.

Table 10

Currency Exchange Rates Used, as of 12/31/2011

Currency code	Currency name	USD per unit
EUR	European Euro	$0.77
JPY	Japanese Yen	$77.16
KRW	South Korean Won	$1,158.09
SEK	Swedish Krona	$6.91

Quantitative research findings. As explained in Chapter III, the relation between financial performances of TNCs, as opposed to other MNCs, was assessed through a binary logistic regression. Additionally, in order to validate data consistency among individual TNCs and MNCs, as well as identify additional findings from the data

available, the following tests were performed: One-Way Analysis of Variance (ANOVA),

trend lines depiction of performance, probability plot, box plot, test of equal variances,

and the two-sample Mann-Whitney or Kruskal-Wallis tests for nonparametric data

samples when applicable. In case the findings from nonparametric testing were different

than that of tests for normal data, the former conclusions were adopted as opposed to

those of binary logistic regression or one-way ANOVA tests. The same sequence of

analyses was followed for each of the six hypotheses; the results are presented as follows:

- Descriptive analysis among individual TNC and individual MNC annual

   financial performance data, which provided the following data:

   a. One-Way Analysis of Variance (ANOVA) with a P value with a

      significance level of 0.05 or 95% confidence interval, as well as the

      mean data, to assess the probability that the sample observations

      within the TNC and MNC samples have a similar behavior among

      themselves.

   b. Performance trend lines for each TNC and MNC to confirm the

      conclusions drawn from the P value, and identify outliers or significant

      deviations among the companies sampled.

   c. Probability plot as a data consistency analysis to compare P values for

      each TNC and MNC; define if data is normal or nonparametric.

   d. Box plot comparison and test of equal variances, to discuss the

      dispersion of annual performance of individual TNCs and MNCs

      among themselves and to determine whether the standard deviations

are different or similar; also providing insight to the consistency of the financial performance data for the sample of TNCs and MNCs.

- Additional statistical analyses for share value price were performed since monthly data was available; replicating the analyses performed for share value price annual performance allowed for the validation of the conclusions drawn and provided additional insight, for example, regarding variance of monthly share value price performance for TNCs in comparison to MNCs.

- Statistical hypothesis testing, or confirmatory data analysis, of aggregated TNC and aggregated MNC annual financial performance data, including binary logistic regression and One-Way Analysis of Variance (ANOVA), as well as Mann-Whitney or Kruskal-Wallis tests in the case of nonparametric data samples, to determine whether the null hypotheses should be rejected in favor of the alternative hypotheses, including the following:

  a. A probability plot, as a data consistency analysis to compare P values for aggregated TNCs and MNCs, to define which type of test—normal or nonparametric—should be used.

  b. A test for equal variances, to determine if standard deviations are different or similar between aggregated TNCs and MNCs.

  c. Binary logistic regression of aggregated TNCs and MNCs versus each of the financial indicators for each of the six hypotheses. A P value less than 0.05 will result in the rejection of the null hypothesis (H_0) at 5% significance level, or using a 95% CI. This would indicate that the results shown would be highly unlikely to occur under the null

hypothesis. A one-way analysis of variance (ANOVA) is used to validate the conclusion from the binary logistic regression.

    d. Kruskal-Wallis or Mann-Whitney tests if the data is nonparametric for aggregated TNCs and MNCs versus each of the financial indicators for all six hypotheses; the findings either validate or supersede that of analyses for normal data samples.

All statistical analyses were performed using the statistical analysis program Minitab 15, which allows for all the tests needed for this research; the glossary of statistical terms and tutorial features of Minitab 15 also were used to facilitate the execution of the various analyses described.

Share Price Performance Analysis

    Descriptive analysis of individual TNC share price performance. This section presents the results of the quantitative analysis for TNC share price performance, as per Hypothesis 1:

        $H1_0$:   MNC 5-year Share Price Performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

Discussion addresses both annual and monthly data, since share price information is reported with enough frequency to allow for these two views.

Figures 5 and 6 show the results of the one-way ANOVA test for TNC annual share price performance and TNC monthly share price performance; with a P value of 0.735 and 0.582 respectively, both > 0.05 with 95% CI, and only Procter & Gamble as an

outlier with positive and higher mean value for the annual data. Therefore it can be

assumed that there are no significant statistical differences among TNC means for share

price, both using annual and monthly data.

```
Source    DF      SS      MS      F       P
Factor     5   0.1133  0.0227   0.55   0.735

S = 0.2026   R-Sq = 11.14%   R-Sq(adj) = 0.00%


Level                       N     Mean    StDev
PG annual share perf        5    0.0205   0.1248
Unilever annual share pe    5   -0.0286   0.1561
Panasonic annual share p    5   -0.1114   0.1247
Philips annual share per    5   -0.0322   0.3447
NEC annual share perf       3   -0.1995   0.0766
Ericsson annual share pe    5   -0.0706   0.2205

 Level                      --+---------+---------+---------+-------
PG annual share perf                      (--------*--------)
Unilever annual share pe                (---------*--------)
Panasonic annual share p           (--------*---------)
Philips annual share per               (--------*---------)
NEC annual share perf         (-----------*-----------)
Ericsson annual share pe             (--------*---------)
                            --+---------+---------+---------+-------
                          -0.40     -0.20     -0.00      0.20
```

Figure 5. TNCs Annual share price performance—One-way ANOVA comparison among
TNCs.

```
Source    DF      SS      MS      F       P
Factor     5  0.0383  0.0077   0.76   0.582
Error    328  3.3242  0.0101
Total    333  3.3626


S = 0.1007   R-Sq = 1.14%   R-Sq(adj) = 0.00%

Level                        N    Mean    StDev
PG Monthly Perf             59   0.0016   0.0477
Unilever Monthly Perf       59   0.0066   0.0685
Panasonic Monthly Perf      59  -0.0109   0.0865
Philips Monthly Perf        59  -0.0064   0.0881
NEC Monthly Perf            47  -0.0094   0.1090
Ericsson Monthly Perf       51  -0.0277   0.1726

PG Monthly Perf                          (----------*---------)
Unilever Monthly Perf                     (----------*---------)
Panasonic Monthly Perf            (----------*---------)
Philips Monthly Perf               (---------*----------)
NEC Monthly Perf                  (----------*----------)
Ericsson Monthly Perf      (----------*----------)
                           --+---------+---------+---------+-------
                         -0.050    -0.025    -0.000     0.025
```

Figure 6. TNC monthly share price performance—One-way ANOVA.

Figures 7 and 8 show the TNC share price performance with trend lines for both

annual and monthly data. In both cases, performance trend lines are similar, with only

Philips as an outlier and with a sharp hike in performance in 2009. This can be

considered a single anomaly, since the increase in share price performance in 2009 was

not sustained, and, as shown in Appendix F, it was mainly driven by a reduction of 6,000

jobs in response to the company's reported $1.9 billion loss in 2008. Share price

performance trended negatively in 2007 and returned to a similar trend in 2009.

Therefore it can be assumed that TNCs' performance trend lines and means are similar,

which is consistent with the findings from the one-way ANOVA test.
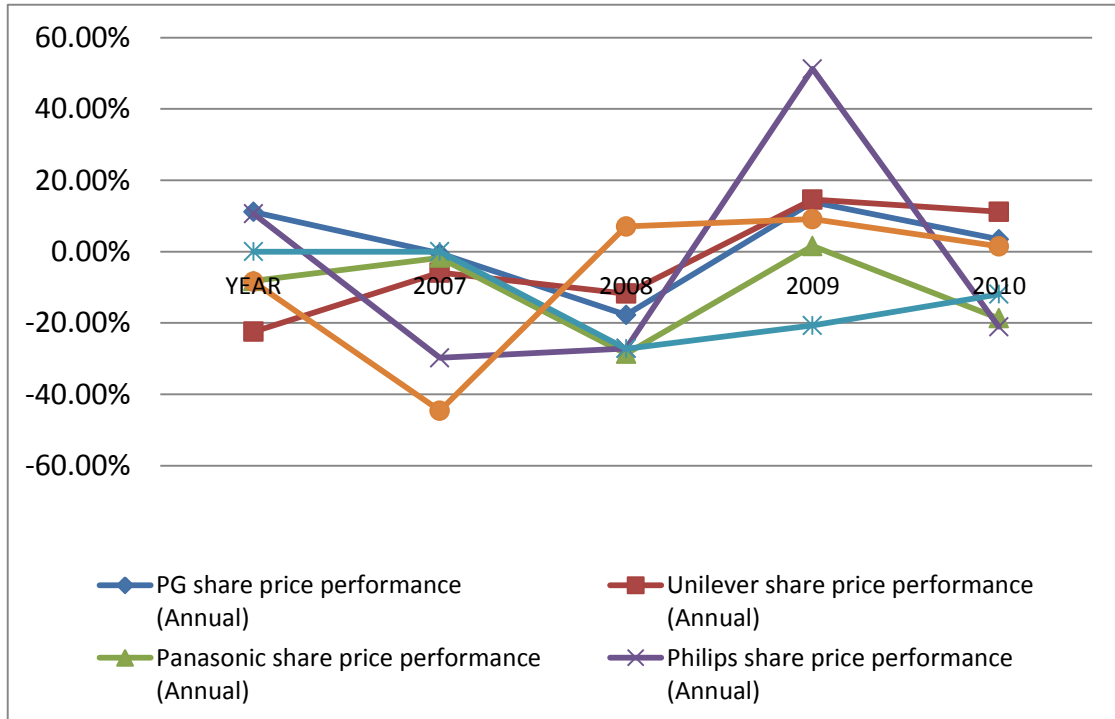
Figure 7. TNC annual share price performance—Performance with trend lines.
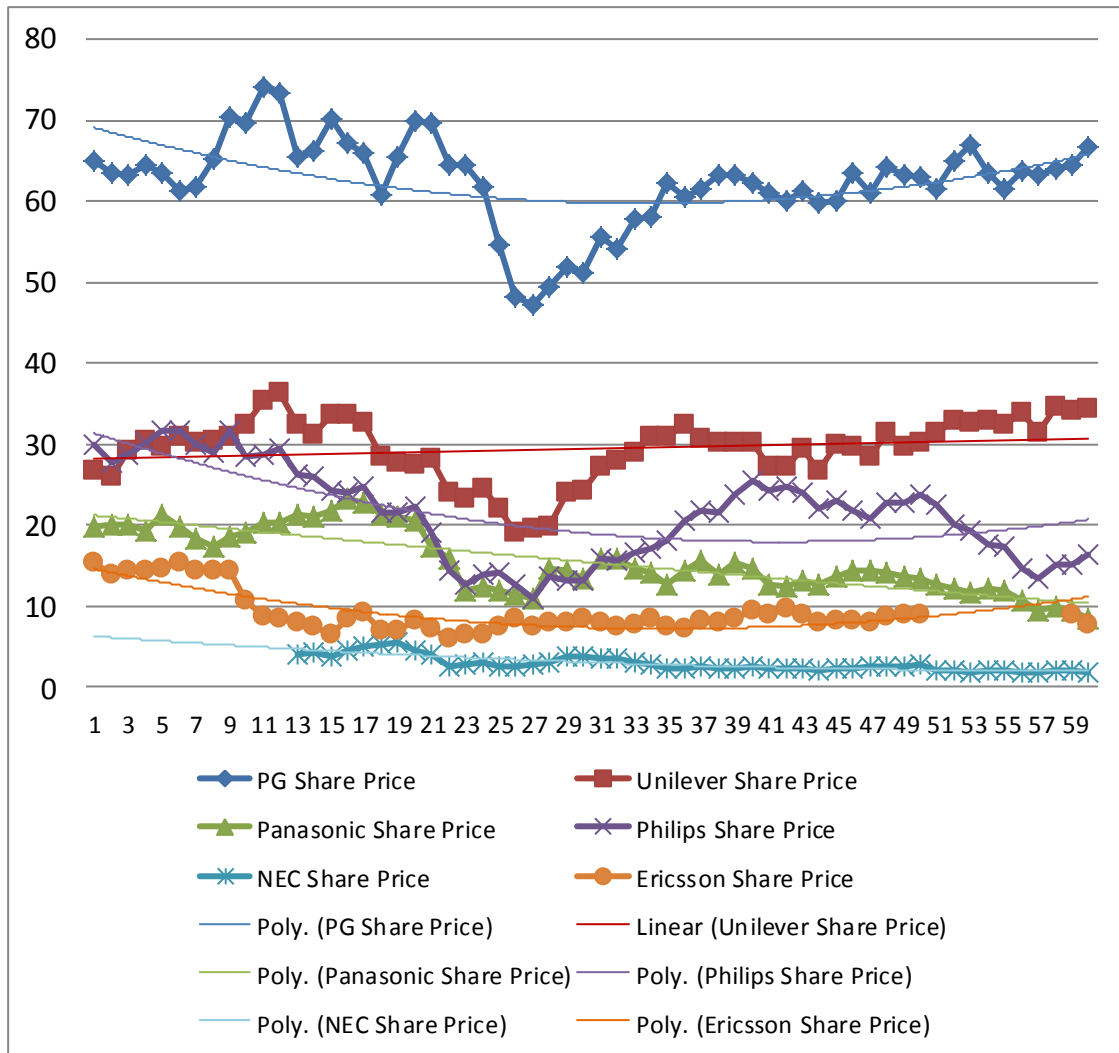
Figure 8. TNC monthly share price performance—Monthly performance with trend lines.

Figures 9 and 10 show the probability plot as a data consistency analysis for TNC share price for both annual and monthly data, where only two P values for TNC annual and monthly data are < 0.05 with 95% CI: the first at 0.032 and the second with a P value close to zero. Therefore, it can be concluded that both data samples are normal, and thus Bartlett's test for equal variances was used to analyze the samples' standard deviations.
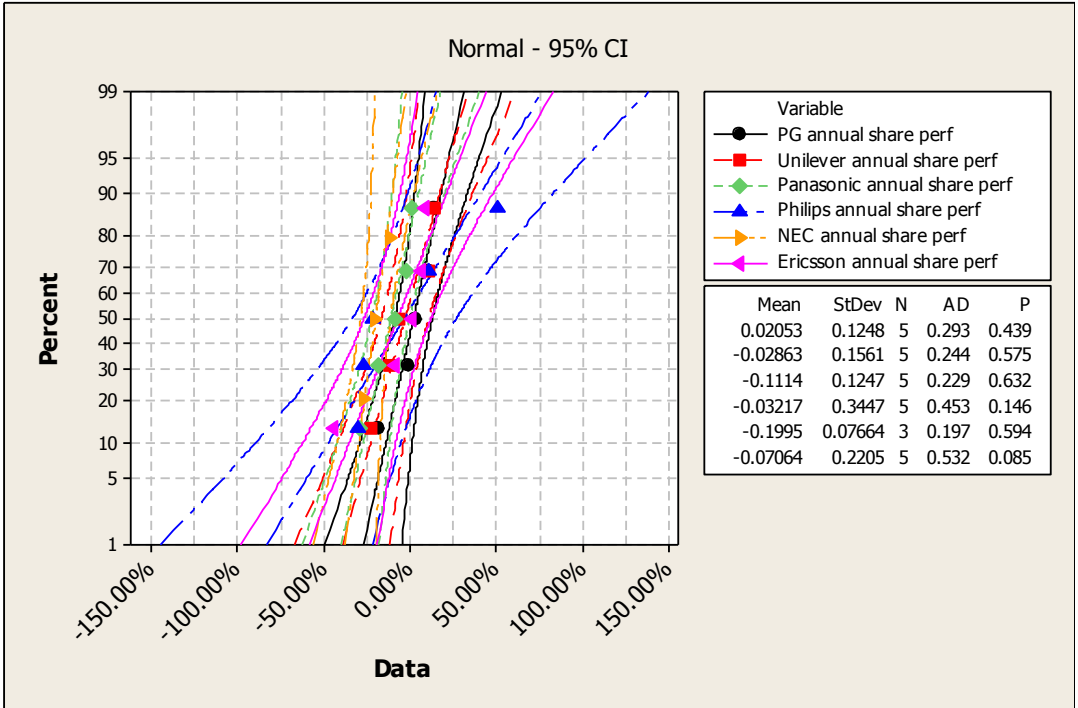
Figure 9. TNC annual share price performance—Probability plot (data consistency analysis).
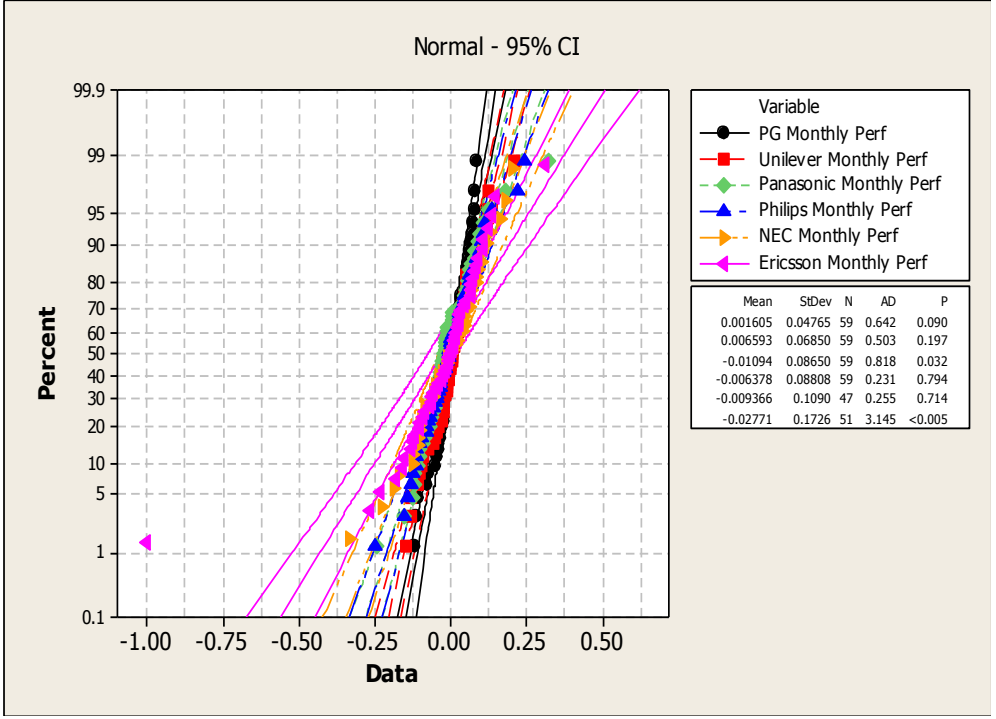
Figure 10. TNC monthly share price performance—Probability plot (data consistency analysis).

Figures 11 and 12 show the box plot comparison for TNC annual and monthly share prices. The graphics depict monthly variations per quartile: The lines extending vertically from the boxes, known as whiskers, indicate the variability outside the upper and lower quartiles, and the ends of the whiskers represent the minimum and maximum values of the entire data sample. Reading from bottom to top, data dispersion in both cases is low, with Philips as the outlier for annual share prices and Ericsson for monthly share prices, both with higher data dispersion.

Figure 13 shows the test for equal variances for TNC annual share price with a P value of 0.161 using the Bartlett test for normal data, which is > 0.05 with 95% CI; therefore, the standard deviations are similar. On the other hand, Figure 14 shows the test for equal variances for TNC monthly share price with a P value of 0 with 95% CI; therefore the standard deviations are different. The graphic observation of the spread is consistent with that of the box plot comparisons, showing Philips as the outlier for TNC annual share price and Ericsson for TNC monthly share price. Therefore, it can be concluded that data among TNC annual share price is more consistent than data among TNC monthly share price; thus the former is a better sample to be used for comparison with MNC data.
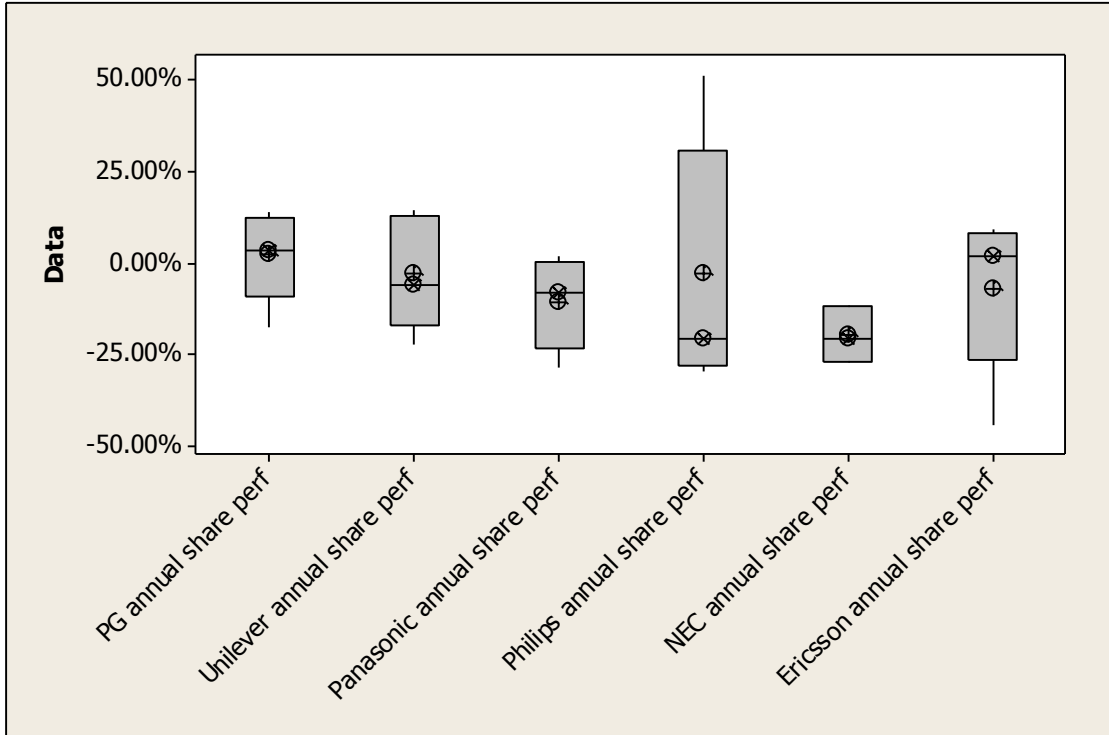
Figure 11. TNC annual share price performance—Box plot comparison.
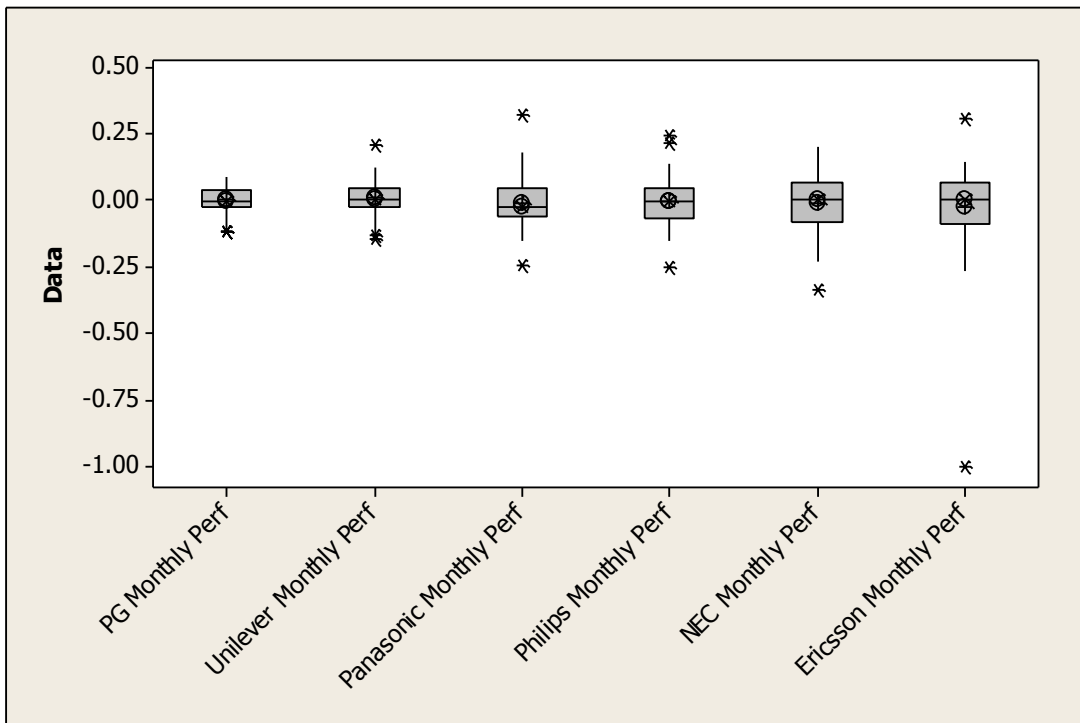
Figure 12. TNC monthly share price performance—Box plot comparison.
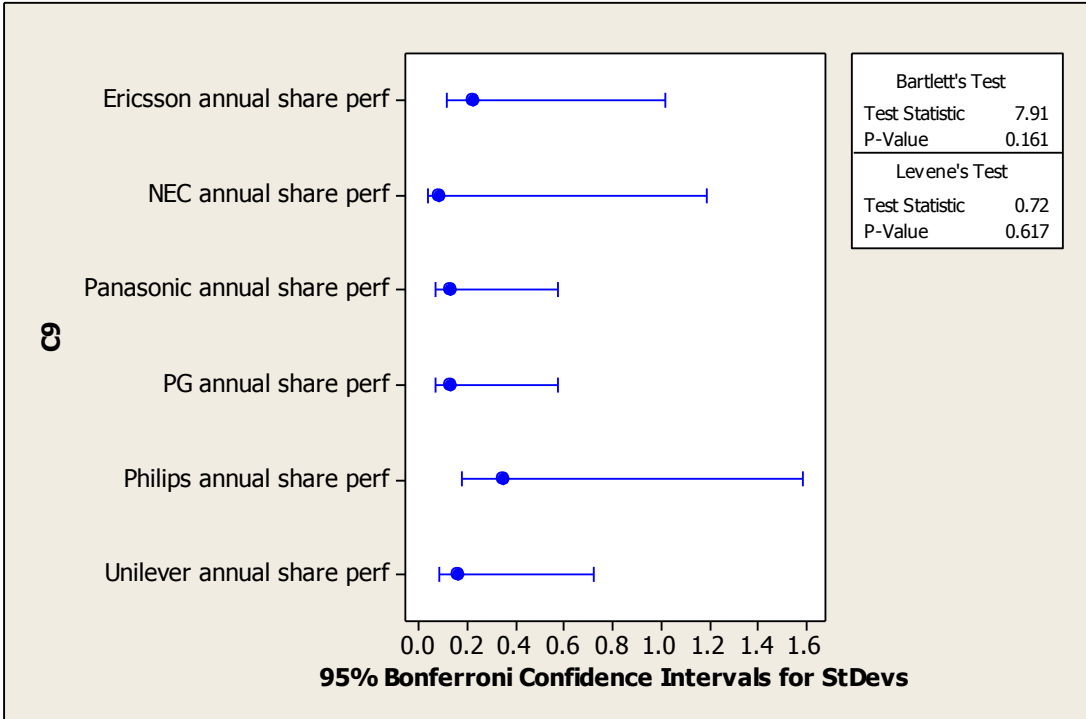
Figure 13. TNC annual share price performance—Test for equal variances.
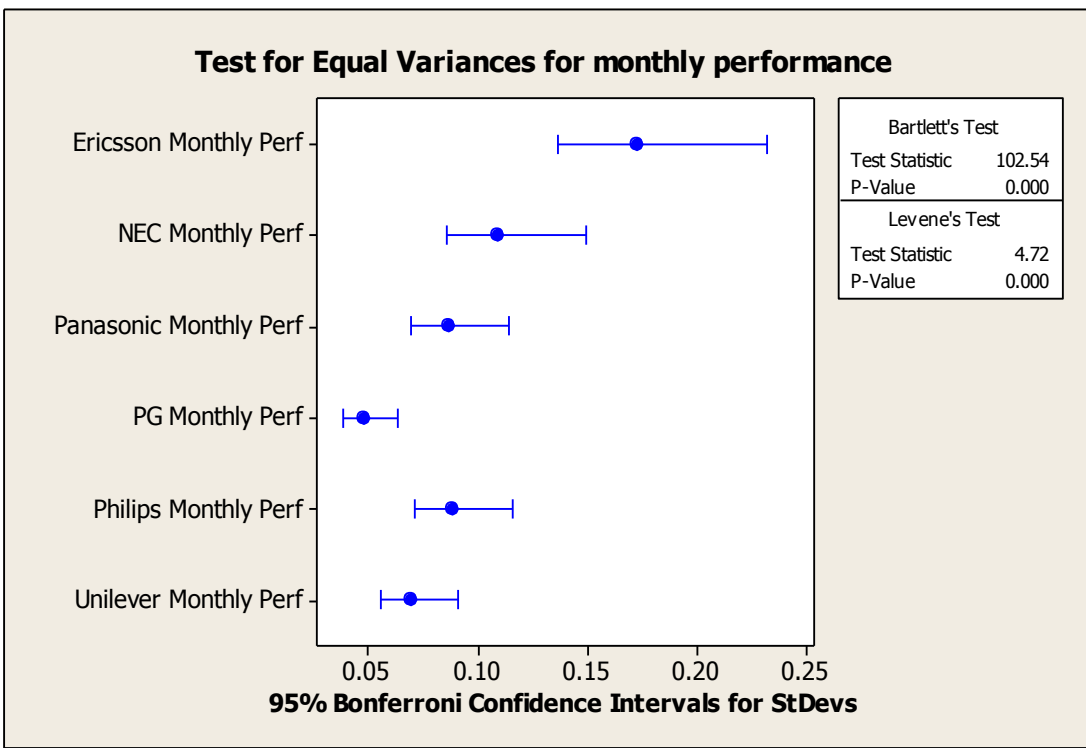
Figure 14. TNC monthly share price performance—Test for equal variances.

In summary, Table 11 presents the results of the statistical analyses for TNC annual share price performance.

Table 11

Summary of Statistical Analyses for TNC Annual Share Price Performance

	TNC sample	
	H1: Share price performance (annual)	H1: Share price performance (monthly)
One-way ANOVA		
P value	0.735	0.582
P value < 0.05 (Y/N)	N	N
Mean (Different/Similar)	Similar	Similar
Outliers	PG	Ericsson
Performance trend lines (Different/Similar)	Similar	Similar
Outliers	Philips	
Probability plot (Normal/nonparametric data sample)	Normal	Normal
Box plot comparison & Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)		
P value (Bartlett or Levene's test)	0.161 (Bartlett)	0 (Bartlett)
P value < 0.05 (Y/N)	N	Y
StDev (Different/Similar)	Similar	Different
Dispersion (High/Low)	Low	Low
Outliers	Philips	Ericsson

Descriptive analysis of individual MNC share price performance. This section presents the results of the quantitative analysis for MNC share price performance, discussing both annual and monthly data. Figures 15 and 16 and Table 12 show the results of the one-way ANOVA test for MNC annual share price performance and MNC

monthly share price performance with a P value of 0.534 and 0.526 respectively, both >

0.05 with 95% CI. For MNC annual share price performance, some outliers such as

Apple and Vonage had the highest mean value and Kao and RIM had the lowest mean

value; the same companies were outliers for MNC monthly data, with only the addition

of Nokia with a low mean value. Since, in the case of MNCs the sample is larger, with 20

companies as opposed to six TNCs, it can be assumed that there are no significant

statistical differences among means for share price when comparing MNCs among

themselves, both using annual and monthly data.

```
Source   DF       SS      MS      F       P
C23      19    1.968   0.104   0.94   0.534
Error    80    8.786   0.110
Total    99   10.754
S = 0.3314   R-Sq = 18.30%   R-Sq(adj) = 0.00%

Individual 95% CIs For Mean Based on Pooled StDev

Level         N     Mean    StDev -------+---------+---------+---------+--
APPLE         5   0.3686   0.3010                      (---------*---------)
ARRIS         5   0.0205   0.2757           (---------*---------)
COLGATE       5   0.0582   0.0567            (---------*---------)
DOLBY         5   0.1000   0.3381              (--------*---------)
GE            5  -0.0824   0.3121       (---------*---------)
HP            5  -0.0272   0.1537         (---------*---------)
IBM           5   0.1288   0.1293             (---------*---------)
INTEL         5   0.0309   0.1641          (---------*---------)
J&J           5  -0.0040   0.0678        (---------*---------)
KAO           5  -0.2061   0.4025 (---------*---------)
KIMB CLARK    5   0.0050   0.1065         (---------*---------)
LG            5   0.1334   0.2707              (--------*---------)
MICROSOFT     5  -0.0205   0.1196        (---------*---------)
MOTOTORLA     5  -0.0366   0.6373        (---------*---------)
NOKIA         5  -0.1335   0.3751     (---------*--------)
QUALCOMM      5   0.0853   0.1561           (---------*---------)
RIM           5  -0.2039   0.2033 (---------*---------)
SIERRA        5  -0.0075   0.3788        (---------*---------)
TOSHIBA       5  -0.0288   0.2442        (---------*---------)
VONAGE        5   0.3189   0.8164                  (---------*--------)
                                      -------+---------+---------+---------+--
                                        -0.30      0.00      0.30      0.60
Pooled StDev = 0.3314
```

Figure 15. MNC annual share price performance—One-way ANOVA.

Table 12

MNC Monthly Share Price Performance—One-Way ANOVA 1 of 2

Source	DF	SS	MS	F	P
MNCs	19	0.2841	0.0150	0.94	0.526
Error	1160	18.3590	0.0158		
Total	1179	18.6431			

Level	N	Mean	StDev
Apple monthly Perf	59	0.0327	0.1076
Arris monthly Perf	59	0.0040	0.1345
Colgate Monthly Perf	59	0.0063	0.0484
Dolby monthly Perf	59	0.0043	0.1091
GE monthly Perf	59	-0.0057	0.1092
HP monthly Perf	59	-0.0051	0.0846
IBM Monthly Perf	59	0.0122	0.0576
Intel monthly Perf	59	0.0058	0.0817
J&J monthly Perf	59	0.0007	0.0457
KAO monthly Perf	59	-0.0130	0.1367
Kimberly monthly Perf	59	0.0018	0.0408
LG monthly Perf	59	0.0116	0.1202
Microsoft monthly Perf	59	0.0002	0.0796
Motorola monthly Perf	59	-0.0093	0.1356
Nokia monthly Perf	59	-0.0171	0.1284
Qualcomm monthly Perf	59	0.0097	0.0835
Rim Monthly Perf	59	-0.0141	0.2013
Sierra monthly Perf	59	0.0026	0.1752
Toshiba Monthly Perf	59	0.0002	0.1221
Vonage monthly Perf	59	0.0526	0.2691

Note. S = 0.1258. R-Sq = 1.52%. R-Sq(adj) = 0.00%.

```
Source     DF        SS       MS       F       P
MNCs       19     0.2841   0.0150    0.94    0.526
Error     1160   18.3590   0.0158
Total     1179   18.6431
S = 0.1258    R-Sq = 1.52%    R-Sq(adj) = 0.00%


Individual 95% CIs For Mean Based on Pooled StDev


Level                       ----+---------+---------+---------+-----
Apple monthly Perf                       (--------*---------)
Arris monthly Perf              (--------*--------)
Colgate Monthly Perfo            (--------*--------)
Dolby monthly Perf               (--------*--------)
GE monthly Perf              (--------*----------)
HP monthly Perf              (---------*--------)
IBM Monthly Perf                  (--------*---------)
Intel monthly Perf                (---------*--------)
J&J monthly Perf                (--------*--------)
KAO monthly Perf            (--------*--------)
Kimberly monthly Perf           (---------*--------)
LG monthly Perf                  (--------*--------)
Microsoft monthly Perf          (--------*--------)
Motorola monthly Perf       (--------*---------)
Nokia monthly Perf        (--------*--------)
Qualcomm monthly Perf            (--------*--------)
Rim Monthly Per            (--------*--------)
Sierra monthly Perf             (--------*--------)
Toshiba Monthly Perf            (--------*--------)
Vonage monthly Perf                       (--------*--------)
                            ----+---------+---------+---------+-----
                           -0.035     0.000      0.035     0.070
Pooled StDev = 0.1258
```

Figure 16. MNC monthly share price performance—One-way ANOVA 2 of 2.

Figure 17 shows the MNC annual share price performance with trend lines, while

Figures 18 and 19 show the MNC monthly share price performance with trend lines. In

the case of MNC annual share price the trend lines are similar, with Kao, Motorola, and

Vonage showing 1- or 2-year outlier performance. This can be explained either by market

reactions to annual results or by company events, as shown in Appendix G, such as Kao's

acquisition of a German manufacturer in 2009, which created a dip in share value in 2010

and a recovery in 2011 partially driven by a conscientious campaign to improve company image and attract investors.

In the case of MNC monthly share price, the trend lines are different, with major outliers being Motorola with a sharp dip between 2007 and 2008, and Apple with the opposite trend between 2008 and 2011; both driven by market performance, including the 2007 milestone when Apple revolutionized the mobile phone market by introducing the iPhone (see Appendix G, Apple Company Fact Sheet). It can be concluded that the MNC performance trend lines and means are similar, which is consistent with the findings of the one-way ANOVA test only for MNC annual share price performance.
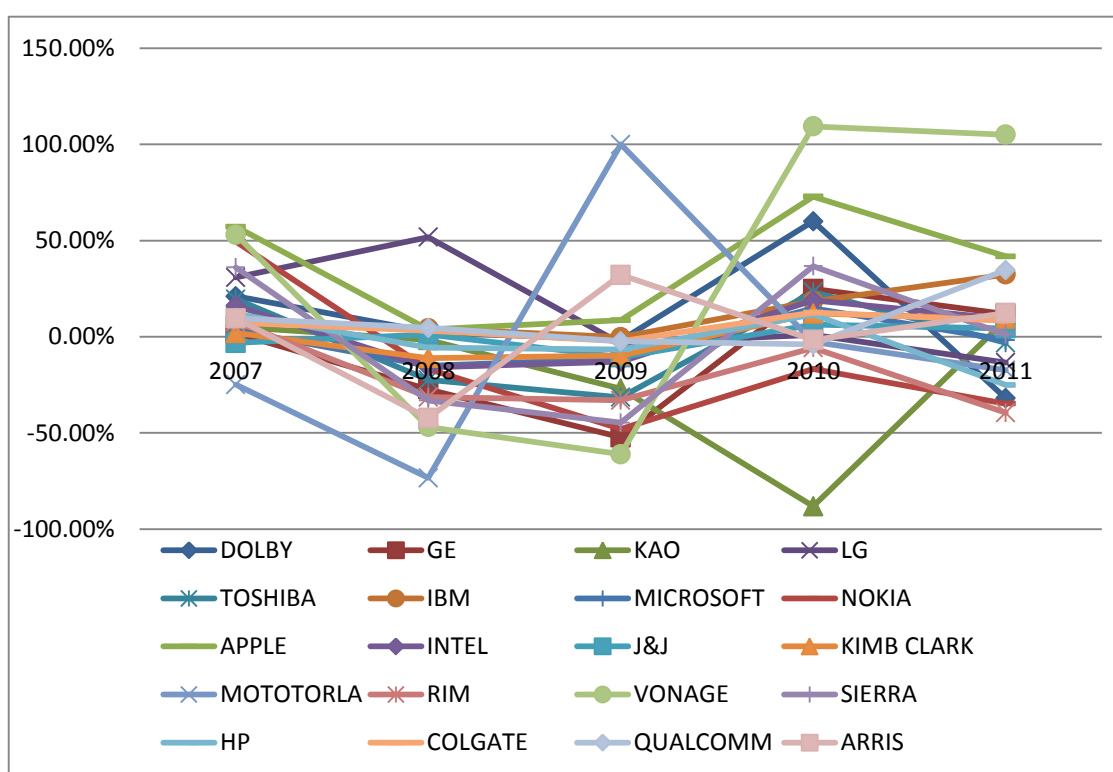
Figure 17. MNC annual share price performance—Performance with trend lines 1 of 2.
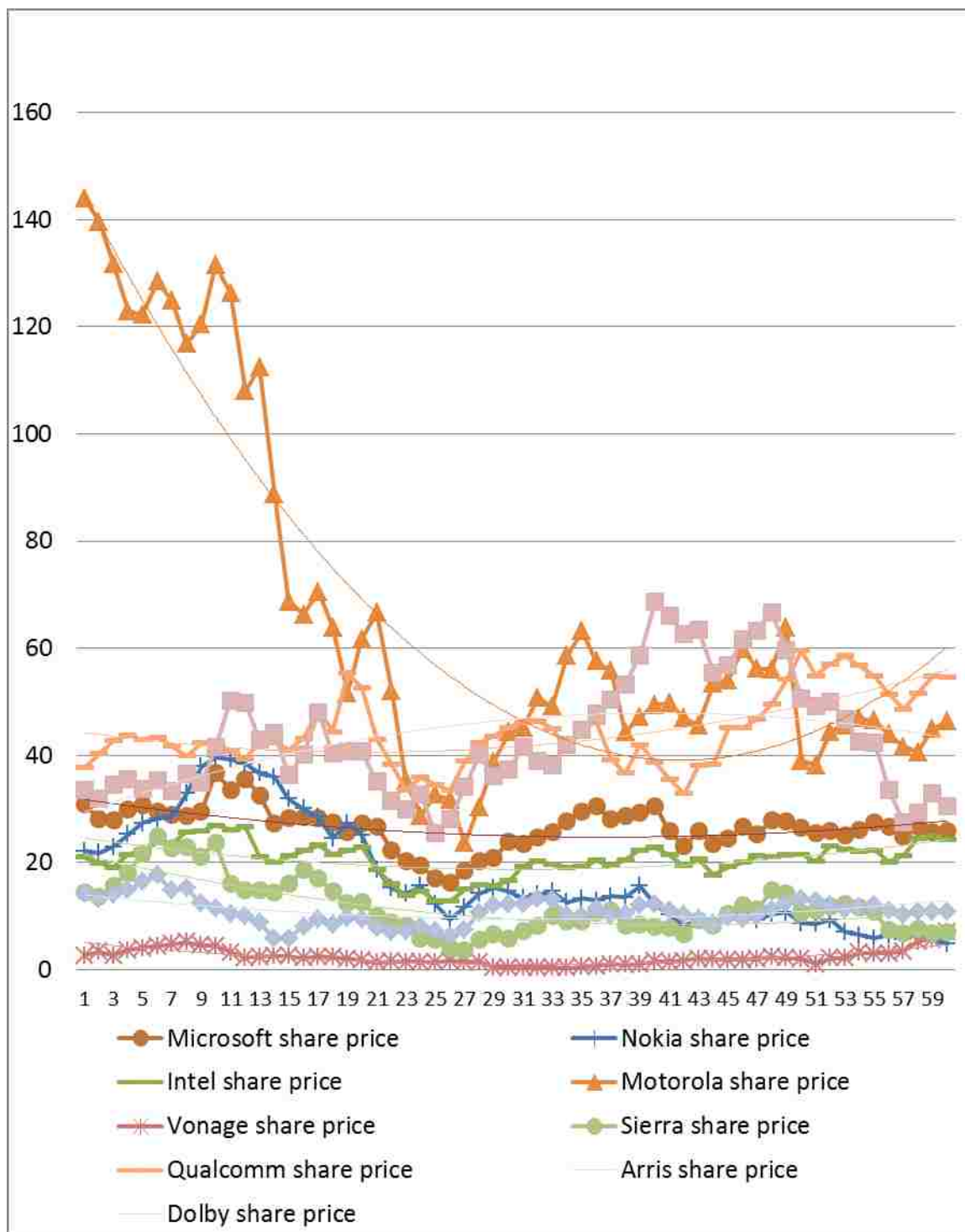
Figure 18. MNC monthly share price performance—Monthly performance with trend lines 2 of 2.
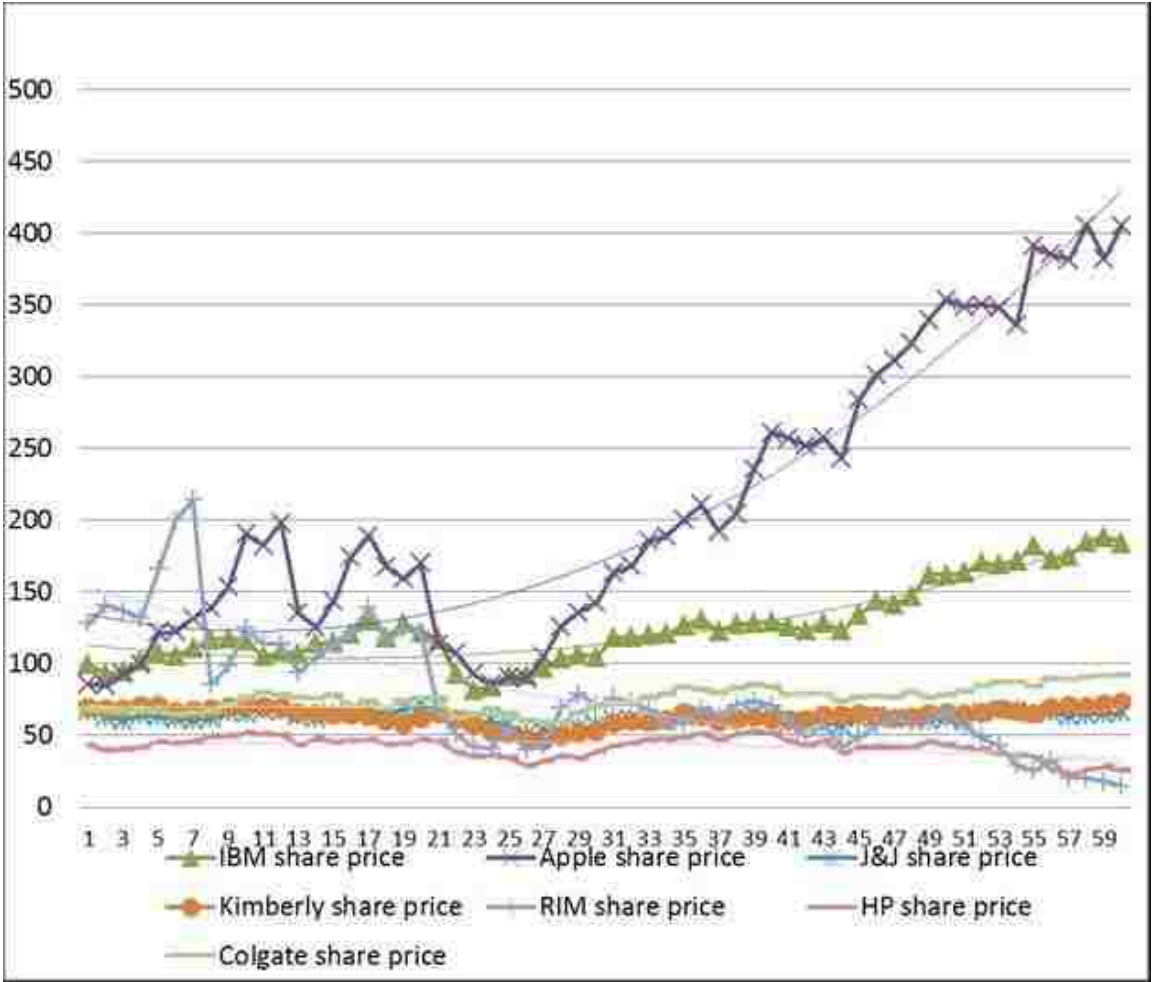
Figure 19. MNC monthly share price performance—Monthly performance with trend lines 2 of 2.

Figures 20 and 21 show the probability plot for MNC share price for both annual and monthly data, where all P values for MNC annual share price data are > 0.05 with 95% CI, and only four P values for MNC monthly share price data are < 0.05 with 95% CI: only two of those are close to P = 0. Therefore, it can be concluded that both data samples are normal, and thus Bartlett's test for equal variances was used to analyze the samples' standard deviations.

Mean	StDev	N	AD	P
0.09999	0.3381	5	0.214	0.693
-0.08238	0.3121	5	0.231	0.624
-0.2061	0.4025	5	0.524	0.090
0.1334	0.2707	5	0.315	0.382
-0.02876	0.2442	5	0.279	0.482
0.1288	0.1293	5	0.237	0.600
-0.02050	0.1196	5	0.192	0.783
-0.1335	0.3751	5	0.460	0.140
0.3686	0.3010	5	0.270	0.508
0.03093	0.1641	5	0.419	0.186
-0.004047	0.06784	5	0.240	0.591
0.004968	0.1065	5	0.328	0.350
-0.03664	0.6373	5	0.385	0.237
-0.2039	0.2033	5	0.390	0.229
0.3189	0.8164	5	0.405	0.206
-0.007477	0.3788	5	0.341	0.321
-0.02723	0.1537	5	0.337	0.329
0.05817	0.05666	5	0.190	0.792
0.08526	0.1561	5	0.443	0.158
0.02054	0.2757	5	0.328	0.349
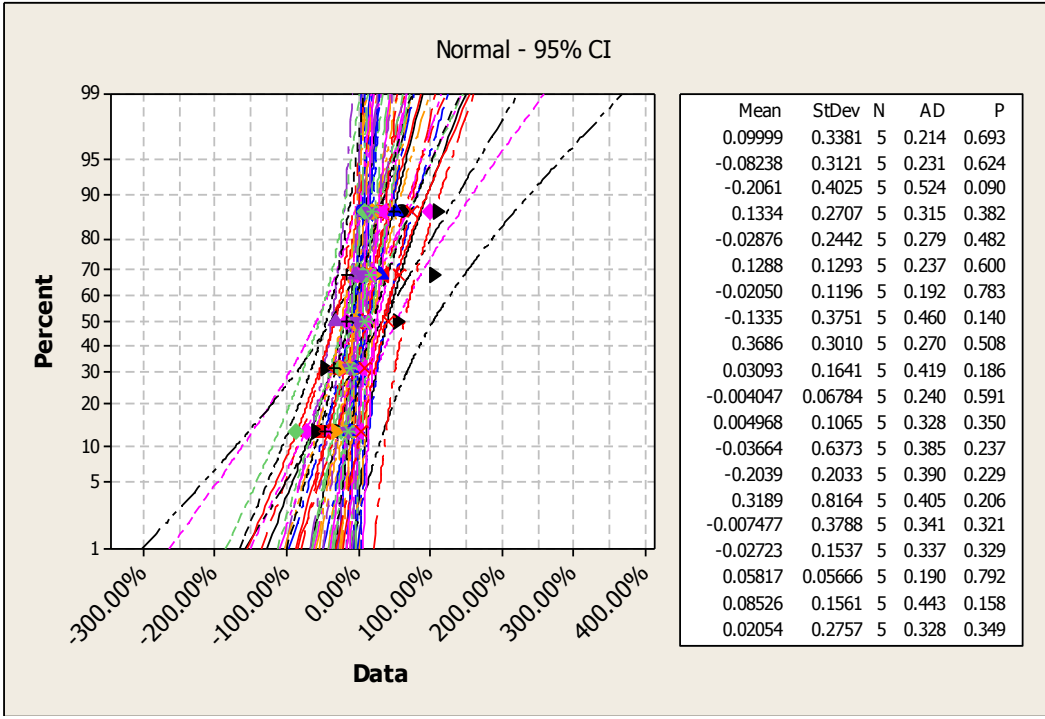
Figure 20. MNC annual share price performance—Probability plot (data consistency analysis).

Mean	StDev	N	AD	P
-0.005717	0.1092	59	0.293	0.592
-0.01299	0.1367	59	5.905	<0.005
0.01157	0.1202	59	0.483	0.221
0.0001922	0.1221	59	0.178	0.916
0.01221	0.05764	59	0.671	0.076
0.0001743	0.07959	59	0.192	0.892
-0.01711	0.1284	59	0.316	0.532
0.03272	0.1076	59	0.794	0.037
0.005830	0.08166	59	0.547	0.153
0.0007280	0.04573	59	0.420	0.316
0.001802	0.04077	59	0.213	0.847
-0.009319	0.1356	59	0.653	0.084
-0.01408	0.2013	59	0.357	0.444
0.05261	0.2691	59	1.301	<0.005
0.002614	0.1752	59	0.558	0.143
-0.005079	0.08458	59	0.336	0.496
0.006311	0.04840	59	0.450	0.267
0.009712	0.08351	59	0.285	0.617
0.004031	0.1345	59	0.530	0.169
0.004327	0.1091	59	0.209	0.855

Figure 21. MNC monthly share price performance—Probability plot (data consistency analysis).

Figures 22–24 show the box plot comparison for MNC annual and monthly share prices. The data dispersion in both cases is high, with Kao, Motorola, Nokia, Sierra, Vonage, and Colgate as examples of high data dispersion for MNC annual share price; and Vonage, RIM, Sierra, and Kimberly Clark as examples of high data dispersion for MNC monthly share price.

Figures 25 and 26 show the test for equal variances for MNC annual and monthly share price with a P value of 0.020 and 0 respectively, using Bartlett's test, both < 0.05 with 95% CI; therefore the standard deviations are different. The graphic observation of the spread is consistent with the box plot comparison in that there are several outliers, such as Colgate with a very low variance and Vonage with a very high variance in the case of MNC annual share price, and Kimberly Clark with a very low variance and Vonage with the highest variance among MNC monthly share price. Therefore, it can be concluded that even though means are similar and the data sample is normal for MNC annual share price performance, there are statistical differences in standard deviation and variances among MNCs: This means that the individual data points are significantly spread out from the mean and from each other.
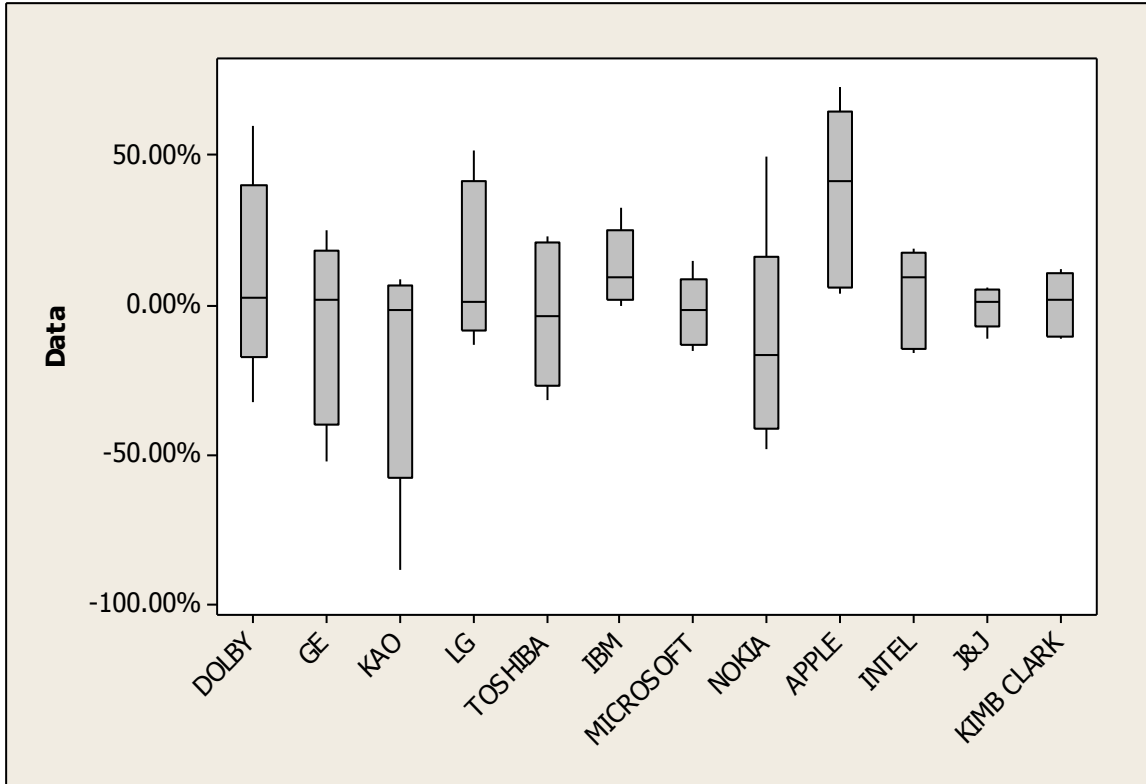
Figure 22. MNC annual share price performance—Box plot comparison.
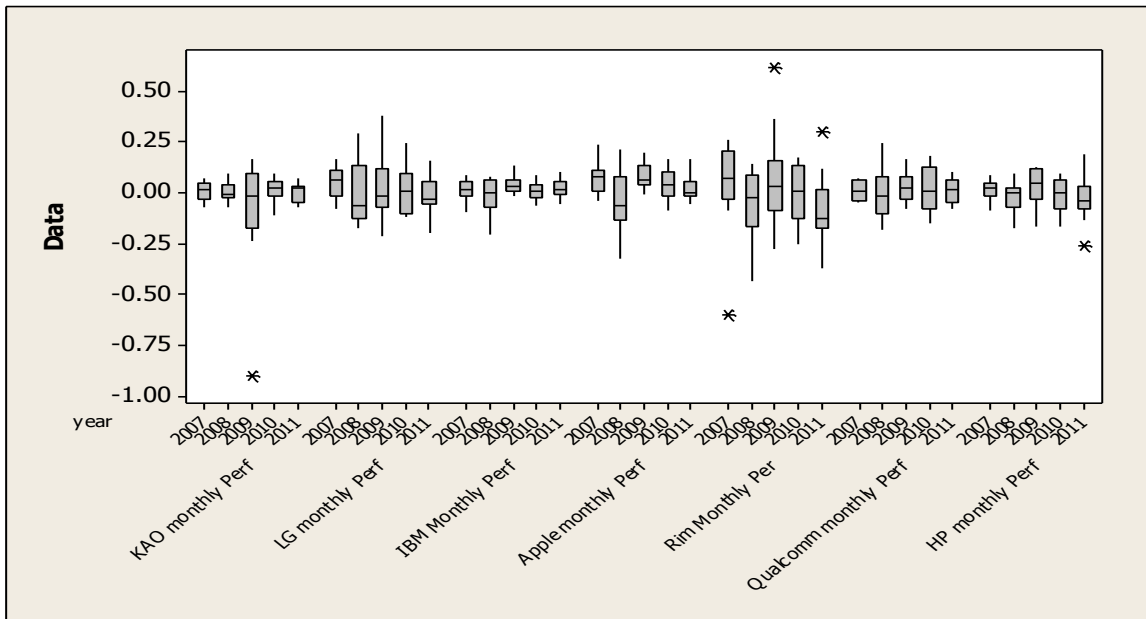
Figure 23. MNC monthly share price performance—Box plot comparison 1 of 2.
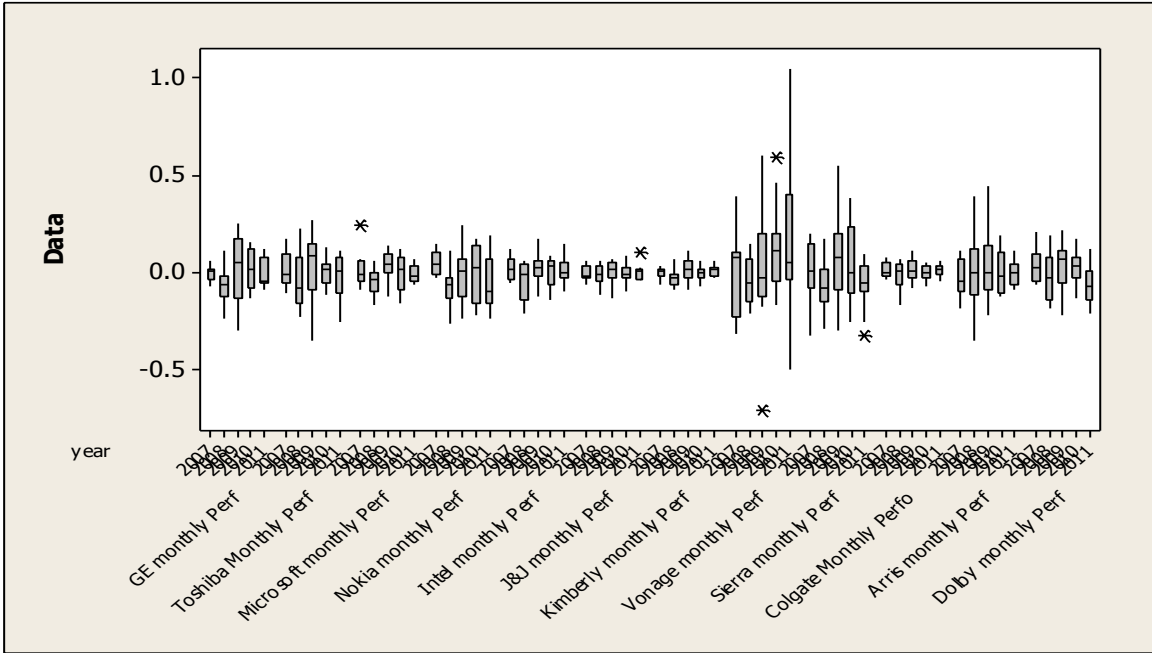
Figure 24. MNC monthly share price performance—Box plot comparison 2 of 2.
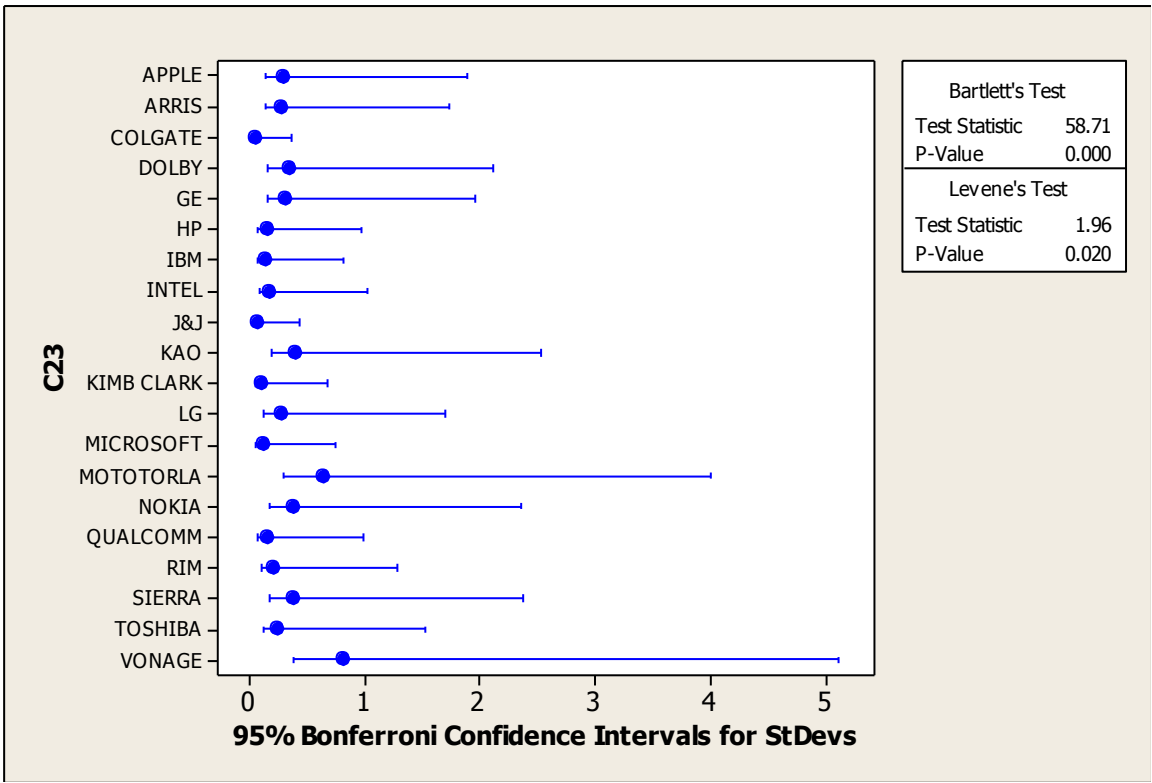
Figure 25. MNC annual share price performance—Test for equal variances.
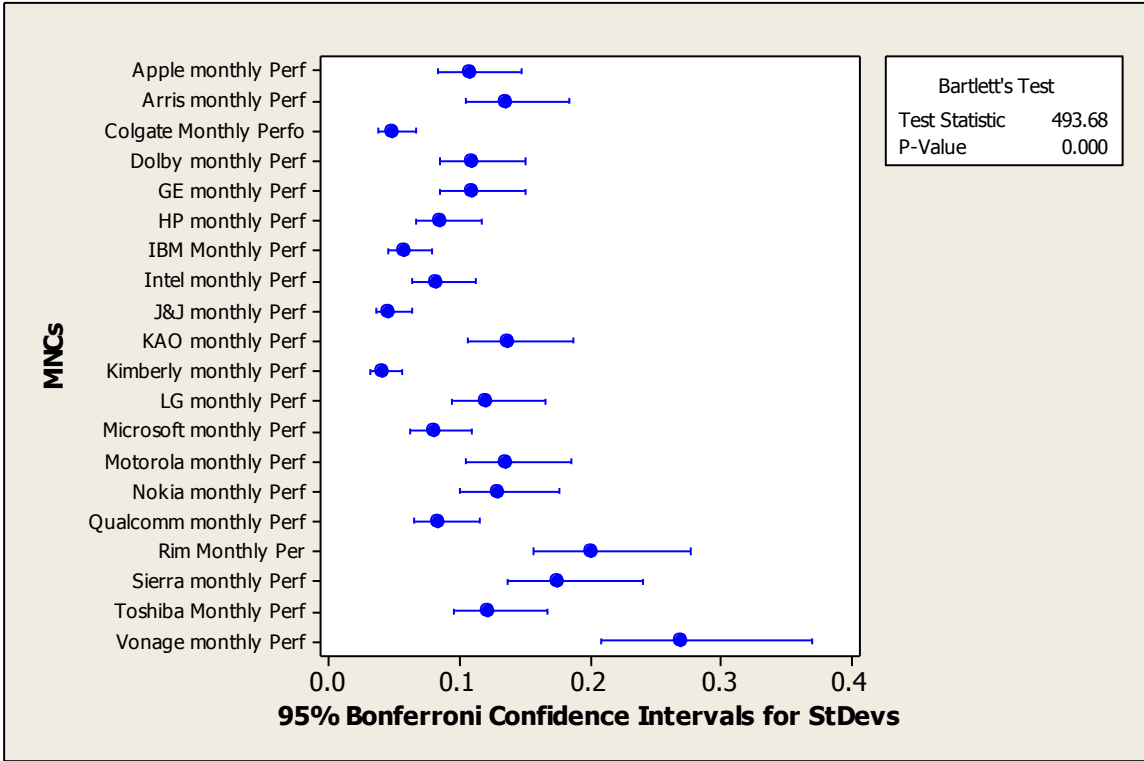
Figure 26. MNC monthly share price performance—Test for equal variances.

In summary, Table 13 presents the results of the statistical analyses for MNC annual share price performance.

Table 13

Summary of Statistical Analyses for MNC Annual Share Price Performance

		MNC sample	
		H1: Share price performance (annual)	H1: Share price performance (monthly)
One-way ANOVA			
	P value	0.534	0.526
	P value < 0.05 (Y/N)	N	N
	Mean (Different/Similar)	Similar	Similar
	Outliers	Apple, Vonage, Kao, RIM	Apple, Vonage, Nokia, RIM, Kao
Performance trend lines (Different/Similar)		Similar	Different
	Outliers	Vonage, Motorola, Kao	Apple, Motorola
Probability plot (Normal/nonparametric data sample)		Normal	Normal
Box plot comparison & Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)			
	P value (Bartlett or Levene's test)	0.02 (Bartlett)	0 (Bartlett)
	P value < 0.05 (Y/N)	Y	Y
	StDev (Different/Similar)	Different	Different
	Dispersion (High/Low)	High	High
	Outliers	Kao, Motorola, Nokia	Vonage, RIM, Sierra

Statistical hypothesis testing of aggregated TNC and aggregated MNC share price performance. This section presents the results of the hypothesis testing of aggregated TNC and aggregated MNC share price performance. Figures 27 and 28 show the probability plot for aggregated TNC and aggregated MNC annual share price performance, where the P value for aggregated MNC annual share price performance and both the aggregated TNC and aggregated MNC P value for monthly share price

performance are < 0.05 with 95% CI, with values close to P = 0. Therefore, it can be

concluded that when all TNC and all MNC share price performance is put together as one

group, data is not normal; both data samples for annual and monthly share price

performance are nonparametric, and thus Levene's test for equal variances was used to

analyze the samples' standard deviations, as well as Mann-Whitney for hypothesis

testing.
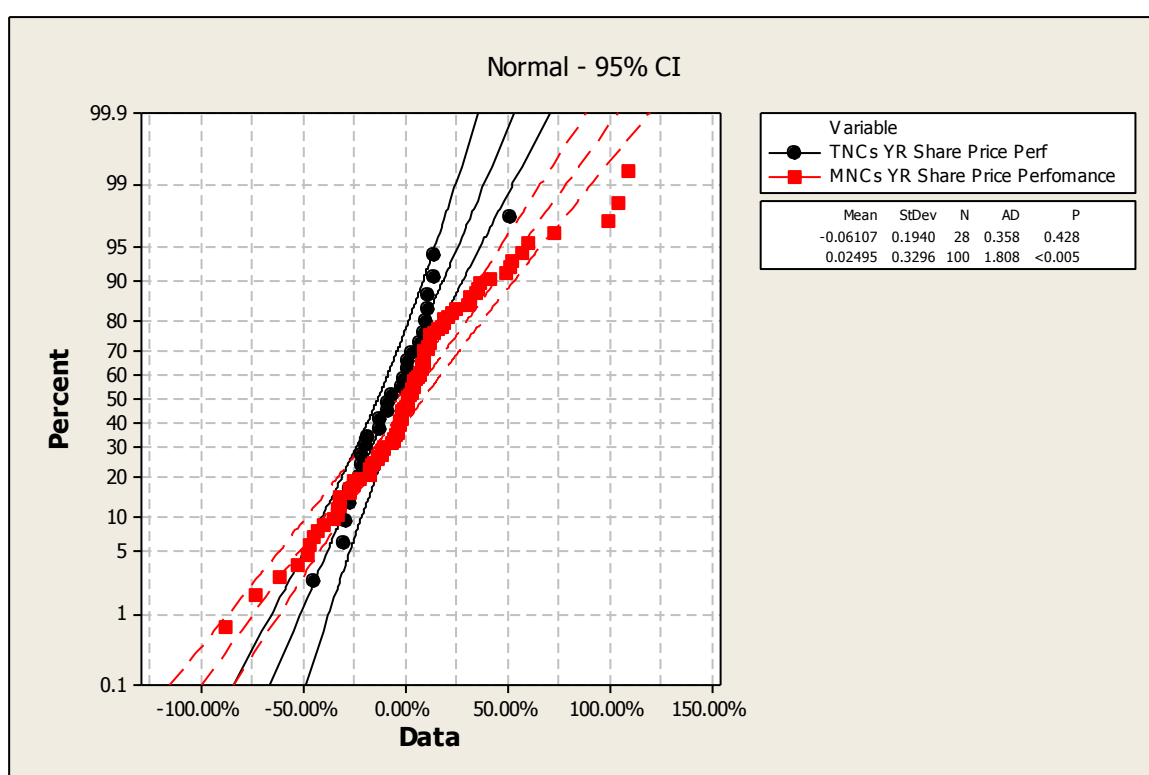
Figure 27. Aggregated TNC and aggregated MNC annual share price performance—
Probability plot.
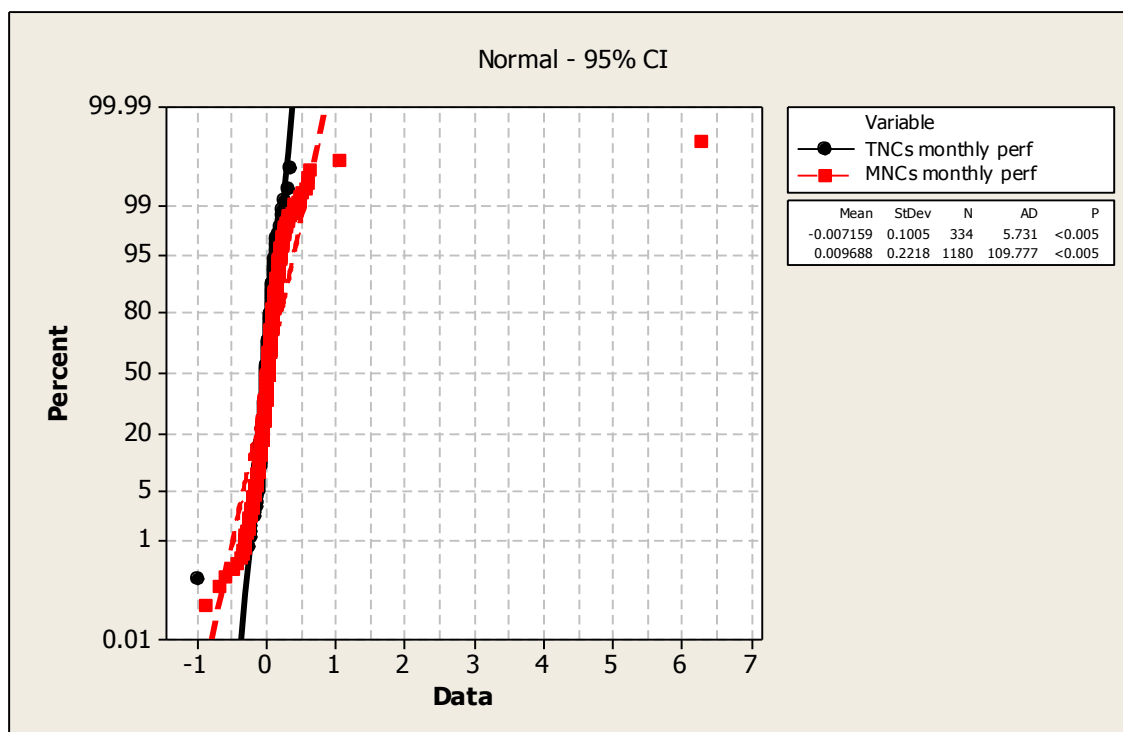
Figure 28. Aggregated TNC and aggregated MNC monthly share price performance—Probability plot.

Figure 29 shows the test for equal variances for aggregated TNC and aggregated MNC annual share price performance with a P value of 0.109 using Levene's test for nonparametric data samples as established with the analysis of the probability plots; this value is > 0.05 with 95% CI, and therefore the standard deviations of both aggregated data samples are similar. In the case of the test for equal variances for aggregated TNC and aggregated MNC monthly share price performance (see Figure 30), the P value is 0 using Levene's test; this value is < 0.05 with 95% CI, and therefore the standard deviations of both aggregated data samples are different. Furthermore, as already observed when analyzing both TNC and MNC companies separately, data dispersion of MNC is higher than that of TNCs.
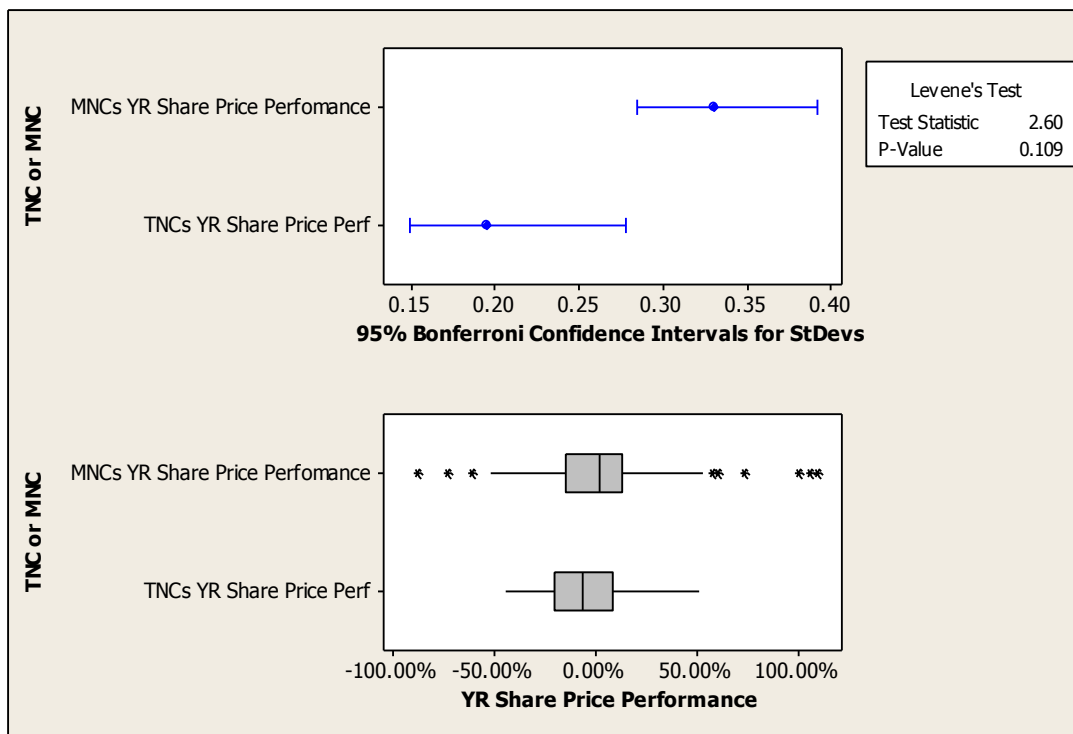
Figure 29. Aggregated TNC and aggregated MNC annual share price performance—Test for equal variances.
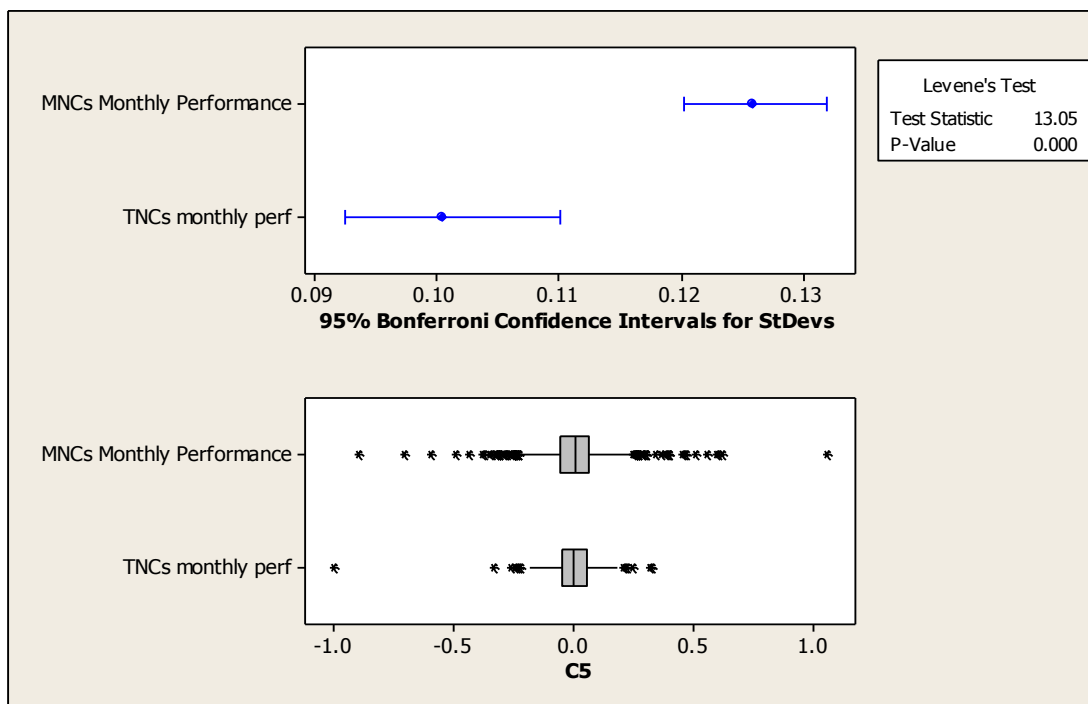
Figure 30. Aggregated TNC and aggregated MNC monthly share price performance—Test for equal variances.

Tables 14 and 15 show the binary logistic regression test for type of company

(TNC or MNC) versus annual share price performance, using aggregated TNC and

aggregated MNC annual and monthly share price performance data; both P values are >

0.05 with 95% CI, with values of 0.178 and 0.135 respectively.

Table 14

Aggregated TNC and Aggregated MNC Annual Share Price Performance—Binary Logistic Regression, Type of Company (TNC or MNC), Versus Annual Share Price Performance

Variable	Value	Count[a]
TNC or MNC	TNC YR Share Price Perf	28 (Event)
	MNC YR Share Price Perf	100
	Total	128

Logistic Regression Table						
Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower
Constant	-1.29201	0.217786	-5.93	0.000		
YR Share Price Performance	-0.992716	0.758427	-1.31	0.191	0.37	0.08

Note. Log-Likelihood = -66.332. Test that all slopes are zero: G = 1.818, DF = 1, P-Value = 0.178.
[a]128 cases were used; 2 cases contained missing values.

Table 15

Aggregated TNC and Aggregated MNC Monthly Share Price Performance—Binary Logistic Regression, Type of Company (TNC or MNC), Versus Monthly Share Price Performance

	Link Function: Logit	
	Response Information	
Variable	Value	Count[a]
Type of company	TNC monthly performance	334 (Event)
	MNC monthly performance	1,180
	Total	1,514

	Logistic Regression Table						
					Odds	95% CI	
Predictor	Coef	SE Coef	Z	P	Ratio	Lower	Upper
Constant	-1.26330	0.0620700	-20.35	0.000			
Monthly Share Price Performance	-0.767759	0.513996	-1.49	0.135	0.46	0.17	1.27

Note. Log-Likelihood = -797.784. Test that all slopes are zero: G = 2.235, DF = 1, P-Value = 0.135
[a]1,514 cases were used; 46 cases contained missing values.

Figures 31 and 32 show the one-way ANOVA test for type of company (TNC or MNC) versus annual share price performance, using aggregated TNC and aggregated MNC annual and monthly share price performance data. Both P values are > 0.05 with 95% CI, with values of 0.190 and 0.135 respectively; means are similar between both data samples.

```
Source    DF        SS      MS      F      P
Factor     1    0.1618  0.1618   1.73  0.190
Error    126   11.7706  0.0934
Total    127   11.9324


S = 0.3056   R-Sq = 1.36%   R-Sq(adj) = 0.57%


Level                          N     Mean   StDev
TNC YR Share Price Perf       28  -0.0611  0.1940
MNC YR Share Price Perf      100   0.0249  0.3296


Individual 95% CIs For Mean Based on Pooled StDev


Level                          -----+---------+---------+---------+----
TNC YR Share Price Perf    (--------------*----------------)
MNC YR Share Price Perf                       (--------*-------)
                               -----+---------+---------+---------+----
                                -0.140    -0.070    0.000     0.070
```
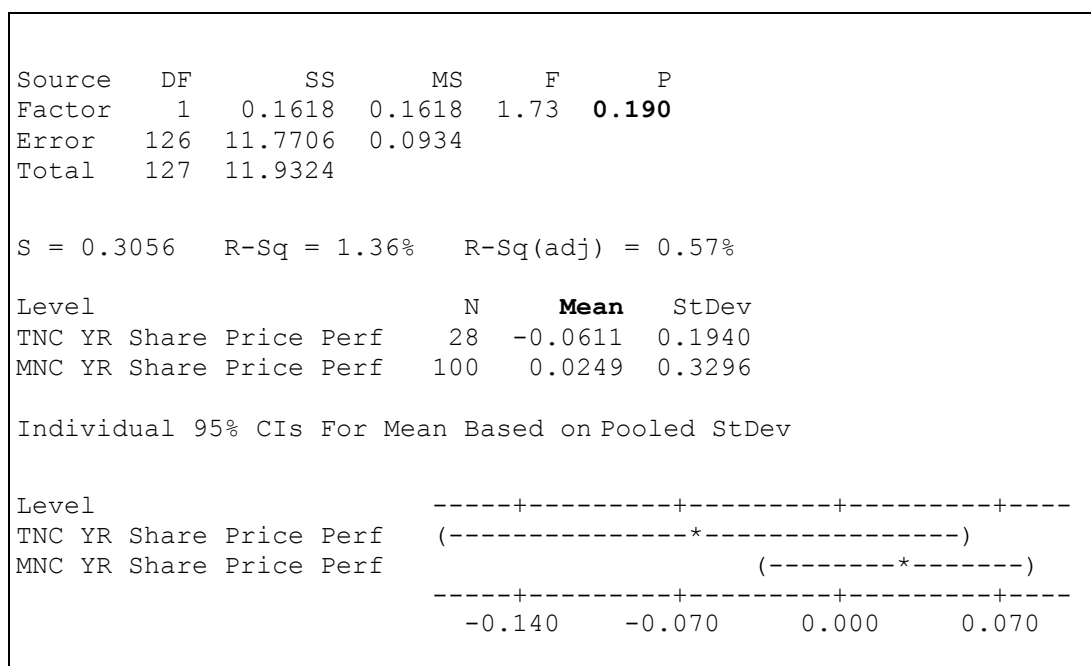
Figure 31. Aggregated TNC and aggregated MNC annual share price performance—
One-way ANOVA type of company (TNC or MNC) versus annual share price
performance.

```
Source    DF        SS      MS      F      P
Factor     1    0.0326  0.0326   2.24  0.135
Error   1512   22.0057  0.0146
Total   1513   22.0383


S = 0.1206   R-Sq = 0.15%   R-Sq(adj) = 0.08%


Level                          N     Mean   StDev
TNCs Monthly Performance     334  -0.0072  0.1005
MNCs Monthly Performance    1180   0.0040  0.1257


Individual 95% CIs For Mean Based on Pooled StDev


Level                          -----+---------+---------+---------+----
TNC Monthly Performance    (--------------*---------------)
MNC Monthly Performance                       (--------*--------)
                               -----+---------+---------+---------+----
                               -0.0160   -0.0080   0.0000    0.0080
```
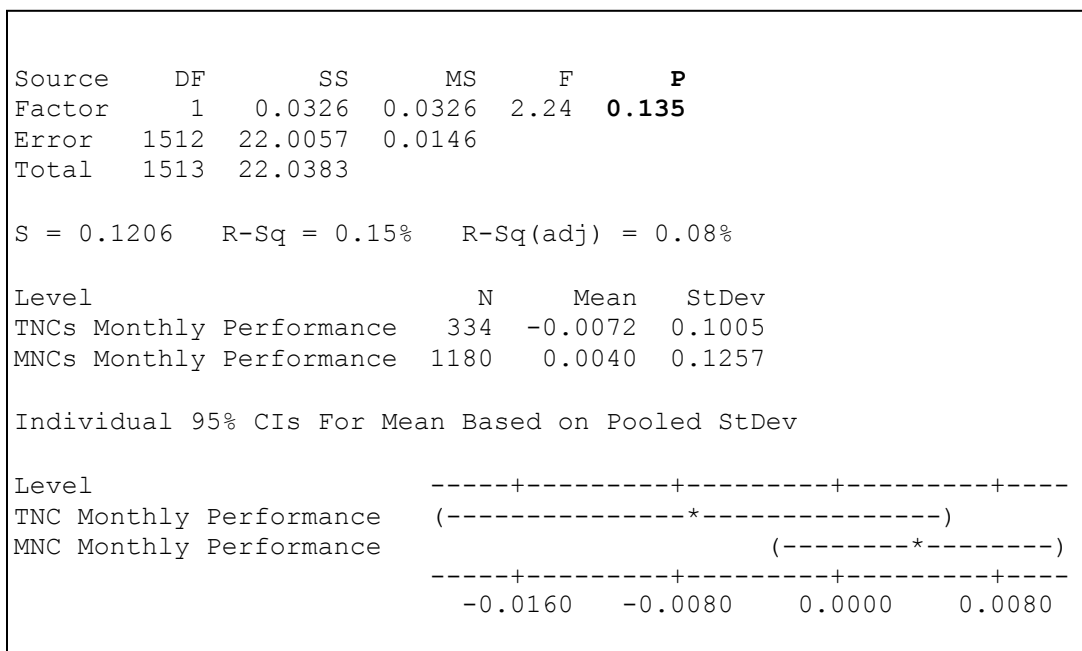
Figure 32. Aggregated TNC and aggregated MNC monthly share price performance—
One-way ANOVA type of company (TNC or MNC) versus monthly share price
performance.

Tables 16 and 17 show the Mann-Whitney test for type of company (TNC or MNC) versus annual share price performance, using aggregated TNC and aggregated MNC annual and monthly share price performance data. Both P values are > 0.05 with 95% CI, with values of 0.1259 and 0.1458 respectively; medians are similar between both data samples.

Table 16

Aggregated TNC and Aggregated MNC Annual Share Price Performance—Mann-Whitney Test and Confidence Interval (CI)

	N	Median
TNC YR Share Price Performance	28	-0.0705
MNC YR Share Price Performance	100	0.0187

Note. Point estimate for ETA1-ETA2 is -0.0769. 95.0% CI for ETA1-ETA2 is (-0.1771,0.0223). W = 1540.0. Test of ETA1 = ETA2 vs. ETA1 not = ETA2 is significant at P = 0.1259**.**

Table 17

Aggregated TNC and Aggregated MNC Monthly Share Price Performance—Mann-Whitney Test and Confidence Interval (CI)

	N	Median
TNC Monthly Performance	334	-0.00542
MNC Monthly Performance	1,180	0.00460

Note. Point estimate for ETA1-ETA2 is -0.00802. 95.0% CI for ETA1-ETA2 is (-0.01880,0.00274). W = 242743.5. Test of ETA1 = ETA2 vs ETA1 not = ETA2 is significant at P = 0.1458.The test is significant at 0.1458 (adjusted for ties).

Hypothesis 1

This hypothesis tested whether there was a relationship between MNC 5-year share price performance and the successful application of the TNC model. The null and alternate hypotheses were stated as follows:

$H1_0$:   MNC 5-year Share Price Performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

$H1_a$:   MNC 5-year Share Price Performance (2007–2011) is positively related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

All three hypothesis tests were applied at a significance level of 0.05, or 95% CI: the binary logistic regression with $P = 0.178$, the one-way ANOVA test with $P = 0.19$ showing that the means are similar, and the Mann-Whitney test for nonparametric data samples with $P = 0.1259$ showing that the medians are similar. In addition, the test for equal variances shows that the standard deviations also are similar. This leads to the same conclusion to accept the null Hypothesis $H1_0$, indicating there is no relationship between MNC share price performance and having successfully applied the TNC model; the same conclusion can be drawn using both annual and monthly share price performance data.

In summary, Table 18 shows the results of the tests performed for aggregated TNC and aggregated MNC annual share price performance.

Table 18

Summary of Statistical Analyses for Aggregated TNC and Aggregated MNC Annual Share Price Performance

	Aggregated TNC and MNC aggregated	
	H1: Share price performance (annual)	H1: Share price performance (monthly)
Probability plot (Normal/nonparametric data sample)	Nonparametric	Nonparametric
Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)		
P value (Bartlett or Levene's test)	0.109 (Levene)	0 (Levene)
P value < 0.05 (Y/N)	N	Y
StDev (Different/Similar)	Similar	Different
Binary Logistic Regression		
P value	0.178	0.135
P value < 0.05 (Y/N)	N	N
H_0 Rejected/Accepted	Accepted	Accepted
One-way ANOVA		
P value	0.19	0.135
P value < 0.05 (Y/N)	N	N
H_0 Rejected/Accepted	Accepted	Accepted
Median (Different/Similar)	Similar	Similar
Nonparametric testing Mann-Whitney (MW) or Kruskal-Wallis (KW)		
P value (MW/KW)	0.1259 (MW)	0.1458 (MW)
P value < 0.05 (Y/N)	N	N
H_0 Rejected/Accepted	Accepted	Accepted
Median (Different/Similar)	Similar	Similar

It can be concluded that Hypothesis $H1_0$ is accepted since there is no statistical relationship between MNC share price performance and having successfully applied the TNC model; in other words, there is no statistical proof that having successfully applied the TNC model has a positive impact on a company's share price performance.

Revenue Performance Analysis

Descriptive analysis of individual TNC revenue performance. This section presents the results of the quantitative analysis for TNC annual revenue performance, discussing data as per Hypothesis 2:

$H2_0$: MNC 5-year REV performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

Figure 33 shows the results of the one-way ANOVA test for TNC annual revenue performance with a P value of 0.142, which is > 0.05 with 95% CI, and only NEC as the outlier with a higher negative value. Therefore, it can be assumed that there are no significant differences among TNC means for revenue performance.

```
Source  DF        SS        MS      F      P
Factor   5  0.06456   0.01291   1.85  0.142
Error   24  0.16781   0.00699
Total   29  0.23237


S = 0.08362   R-Sq = 27.78%   R-Sq(adj) = 12.74%

Level       N     Mean     StDev
P&G         5   0.03613  0.04902
UNILEVER    5   0.03322  0.04986
PANASONIC   5   0.00062  0.11487
PHILIPS     5  -0.02545  0.12846
NEC         5  -0.08628  0.05725
ERICSSON    5   0.04918  0.06394


Individual 95% CIs For Mean Based on Pooled StDev

Level           +---------+---------+---------+---------
P&G                             (---------*--------)
UNILEVER                        (--------*---------)
PANASONIC                 (---------*---------)
PHILIPS              (---------*--------)
NEC              (--------*---------)
ERICSSON                           (--------*---------)
                +---------+---------+---------+---------
             -0.160    -0.080     0.000     0.080
```

Figure 33. TNC annual revenue performance—One-way ANOVA.

Figure 34 shows the TNC annual revenue performance with trend lines;

performance trend lines are similar, with only Philips as an outlier, with a sharp decline

in 2009. As explained in the discussion of share price performance and shown in

Appendix F, this is a one-off anomaly; the same event that created an increase in share

value drove down the company's revenue in 2009, and revenue performance recovered in

2010. Therefore, it can be assumed that TNC performance trend lines and means are

similar, which is consistent with the findings from the one-way ANOVA test.
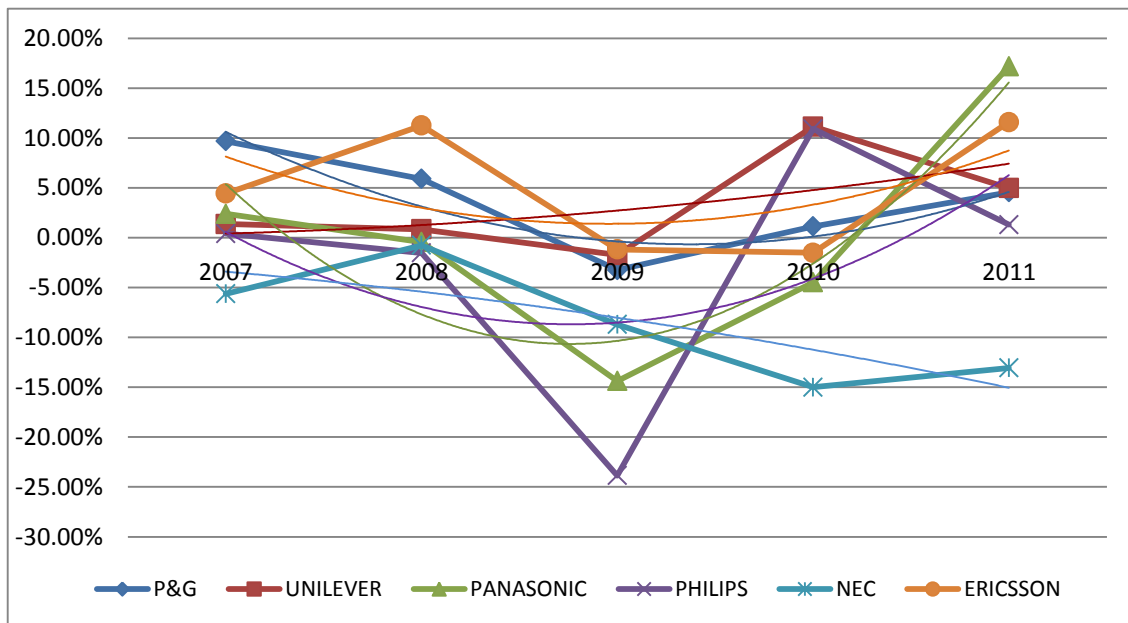
Figure 34. TNC annual revenue performance—Performance with trend lines.

Figure 35 shows the probability plot as a data consistency analysis for TNC annual revenue performance, where all P values are > 0.05 with 95% CI; therefore, it can be concluded that the data sample is normal, and thus Bartlett's test for equal variances was used to analyze the sample's standard deviations.
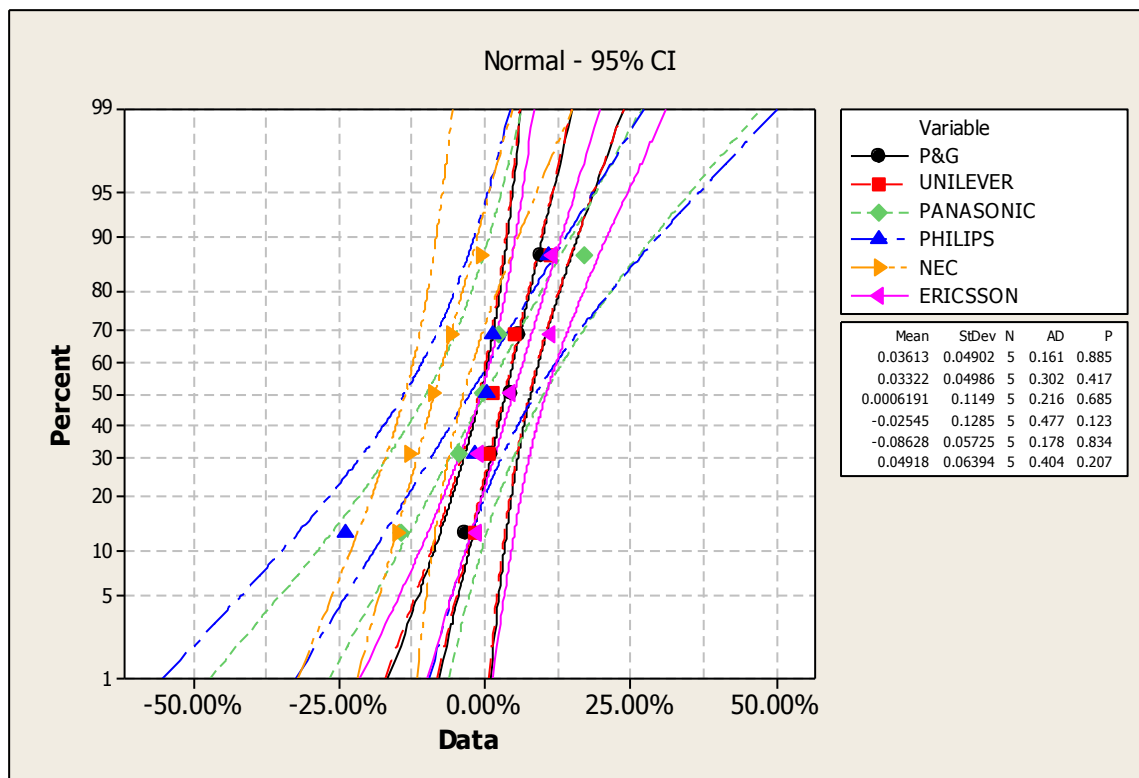
Figure 35. TNC annual revenue performance—Probability plot (data consistency analysis).

Figure 36 shows the box plot comparison for TNC annual revenue performance; data dispersion is low, with Panasonic and Philips as the companies with the highest dispersion. Figure 37 shows the test for equal variances for TNC annual revenue performance with a P value of 0.750 using Bartlett's test for normal data, which is > 0.05 with 95% CI; therefore, the standard deviations are similar. The graphic observation of the spread is consistent with that of the box plot comparison, showing Panasonic and Philips as the outliers for TNC annual revenue performance. Therefore, it can be concluded that data among TNC annual revenue performance is statistically similar.
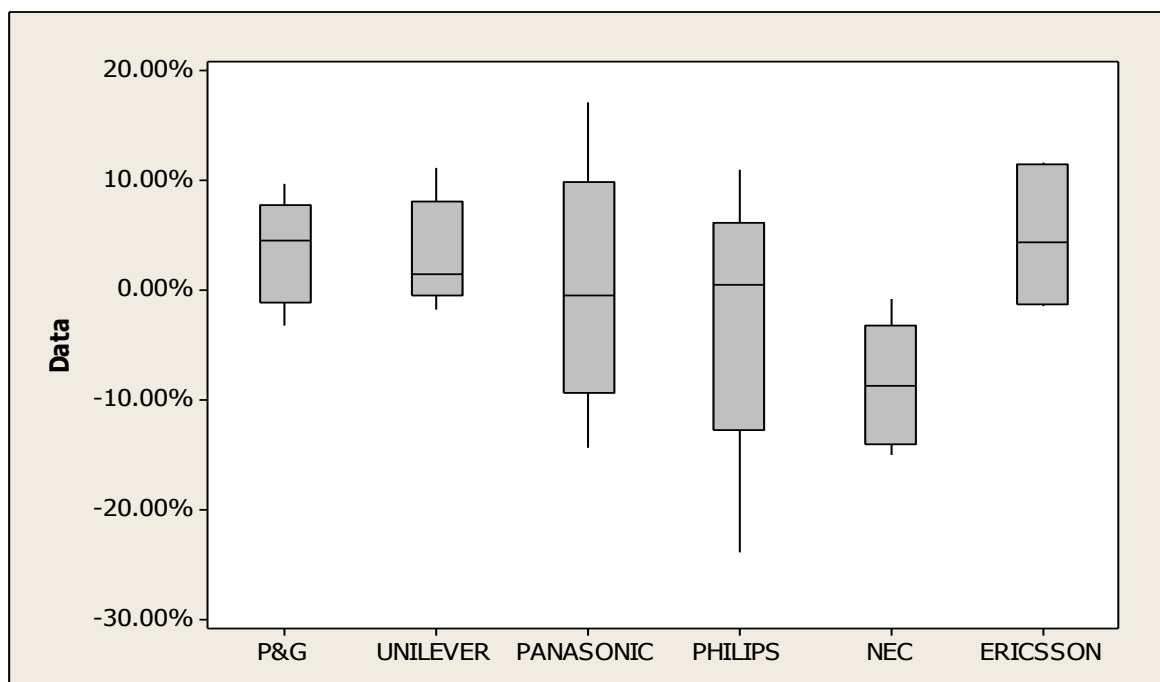
Figure 36. TNC annual revenue performance—Box plot comparison.
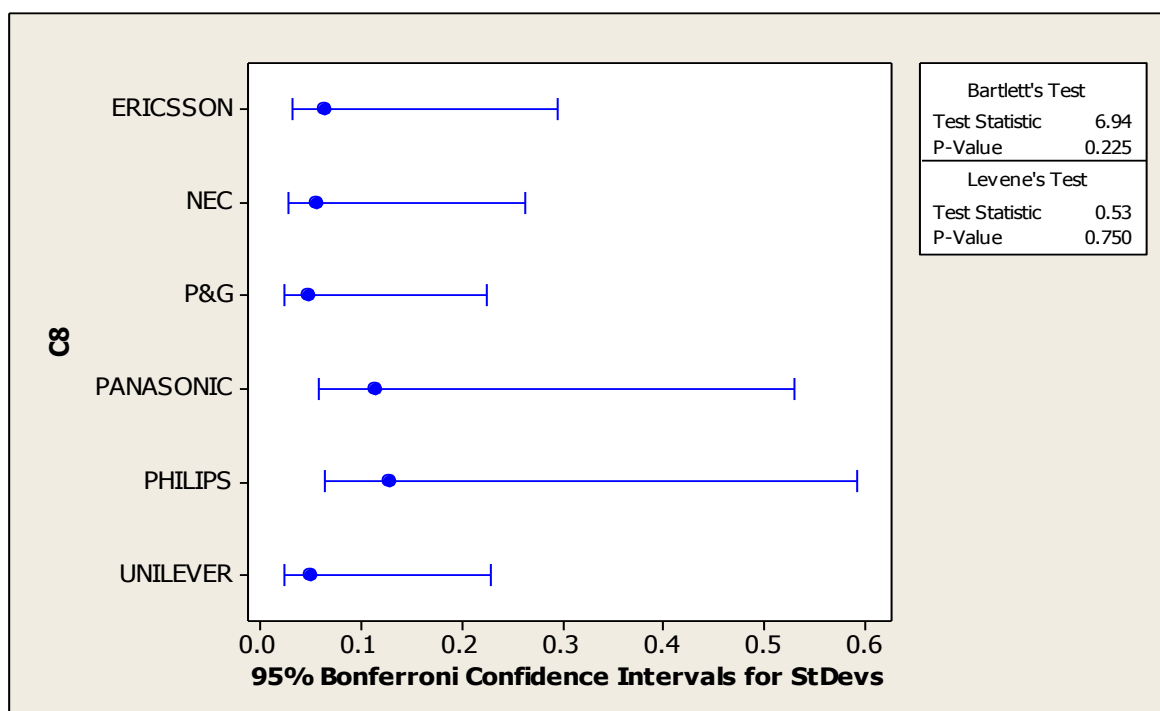
Figure 37. TNC annual revenue performance—Test for equal variances.

In summary, Table 19 presents the results of the statistical analyses for TNC annual revenue performance.

Table 19

Summary of Statistical Analyses for TNC Annual Revenue Performance

	TNC sample
	H2: REV performance (annual)
One-way ANOVA	
P value	0.142
P value < 0.05 (Y/N)	N
Mean (Different/Similar)	Similar
Outliers	NEC
Performance trend lines (Different/Similar)	Similar
Outliers	Philips
Probability plot (Normal/nonparametric data sample)	Normal
Box plot comparison & Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)	
P value (Bartlett or Levene's test)	0.225 (Bartlett)
P value < 0.05 (Y/N)	N
StDev (Different/Similar)	Similar
Dispersion (High/Low)	Low
Outliers	Panasonic, Philips

Descriptive analysis of individual MNC revenue performance. This section presents the results of the quantitative analysis for MNC annual revenue performance; Table 20 and Figure 38 show the results of the one-way ANOVA test for MNC annual revenue performance, with a P value of 0, which is < 0.05 with 95% CI. There were some outliers, such as Vonage, RIM, and Apple with the highest mean values, and Nokia and

GE with the lowest mean values for MNC annual revenue performance. Therefore, it can be concluded that there are significant statistical differences among the means for annual revenue performance when comparing MNCs among themselves.

Table 20

MNC Annual Revenue Performance—One-Way ANOVA 1 of 2

Source	DF	SS	MS	F	P
Factor	19	2.7417	0.1443	3.11	0.000
Error	80	3.7138	0.0464		
Total	99	6.4555			

Level	N	Mean	StDev
GE	5	-0.0011	0.1065
KAO	5	0.1223	0.1391
LG	5	0.2352	0.4390
TOSHIBA	5	0.0147	0.0981
IBM	5	0.0334	0.0630
MICROSOFT	5	0.0984	0.0846
NOKIA	5	-0.0021	0.1616
APPLE	5	0.4193	0.1682
INTEL	5	0.0956	0.1423
J&J	5	0.0422	0.0675
KIMB CLARK	5	0.0454	0.0398
MOTOROLA	5	-0.1837	0.3504
RIM	5	0.6399	0.3673
VONAGE	5	0.0835	0.1626
SIERRA	5	0.1636	0.5108
HP	5	0.0701	0.0772
COLGATE	5	0.0658	0.0564
QUALCOMM	5	0.1572	0.1679
ARRIS	5	0.0434	0.0841
DOLBY	5	0.2000	0.1189

Note. S = 0.2155. R-Sq = 42.47%. R-Sq(adj) = 28.81%.

```
Source  DF      SS     MS     F      P
Factor  19  2.7417  0.1443  3.11  0.000
Error   80  3.7138  0.0464
Total   99  6.4555


S = 0.2155   R-Sq = 42.47%   R-Sq(adj) = 28.81%


Individual 95% CIs For Mean Based on Pooled StDev


Level              -+---------+---------+---------+--------
GE                  (-----*----)
KAO                    (----*-----)
LG                        (-----*----)
TOSHIBA              (----*-----)
IBM                  (-----*----)
MICROSOFT              (-----*----)
NOKIA                (-----*----)
APPLE                          (----*----)
INTEL                  (-----*----)
J&J                   (----*-----)
KIMB CLARK            (----*-----)
MOTOROLA         (-----*----)
RIM                               (----*-----)
VONAGE                (----*-----)
SIERRA                  (-----*----)
HP                    (----*----)
COLGATE               (-----*----)
QUALCOMM               (----*-----)
ARRIS                 (----*-----)
DOLBY                   (-----*----)
                   -+---------+---------+---------+--------
                 -0.35      0.00      0.35      0.70
```
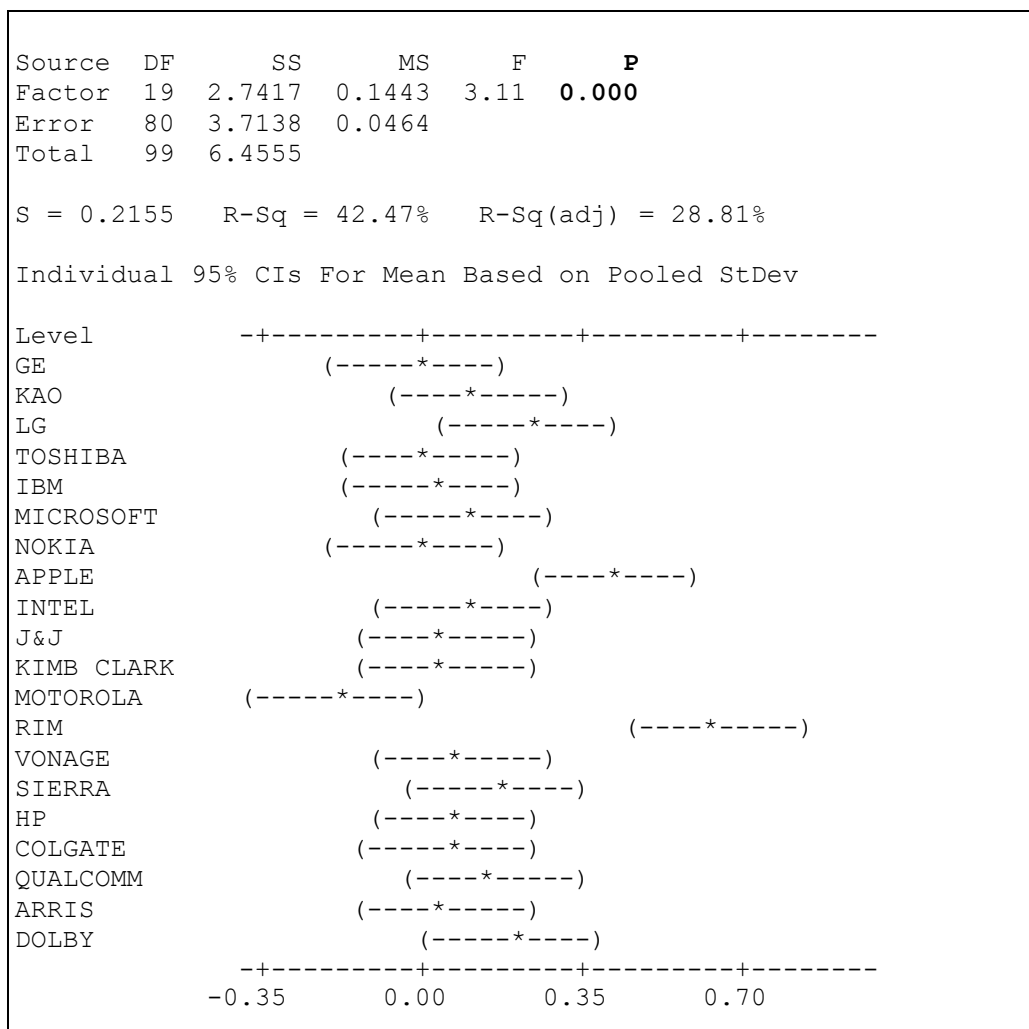
Figure 38. MNC annual revenue performance—One-way ANOVA 2 of 2.

Figures 39 and 40 show annual revenue performance with trend lines for MNCs. These trend lines are different, and they include outliers such as RIM, LG, Sierra, and Motorola, all of which have a stake in the mobile phone market, which has been impacted by various significant events such as changes in strategy (LG), service failures (RIM), and mergers (Sierra) (see Appendix G). One of the major drivers for the volatility of the mobile phone industry was the launch of the iPhone by Apple in 2007. Therefore, it can

be concluded that MNC performance trend lines and means are different, which is

consistent with the findings of the one-way ANOVA test.
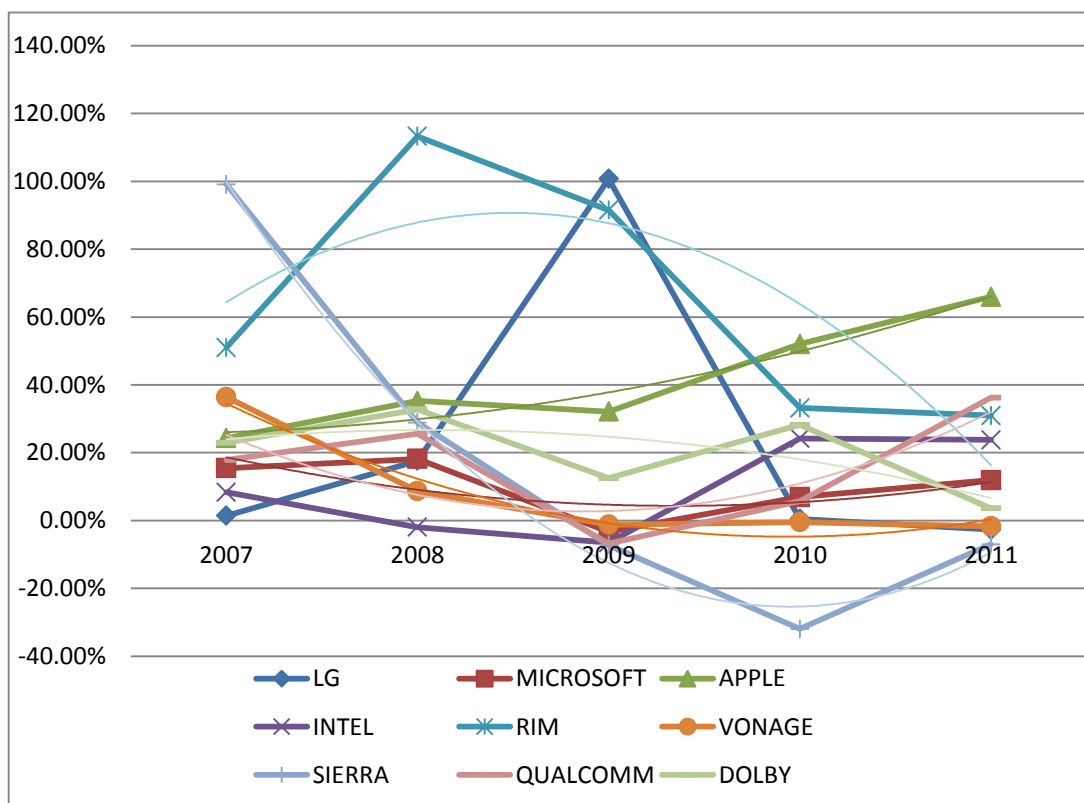
Figure 39. MNC annual revenue performance—Performance with trend lines 1 of 2.
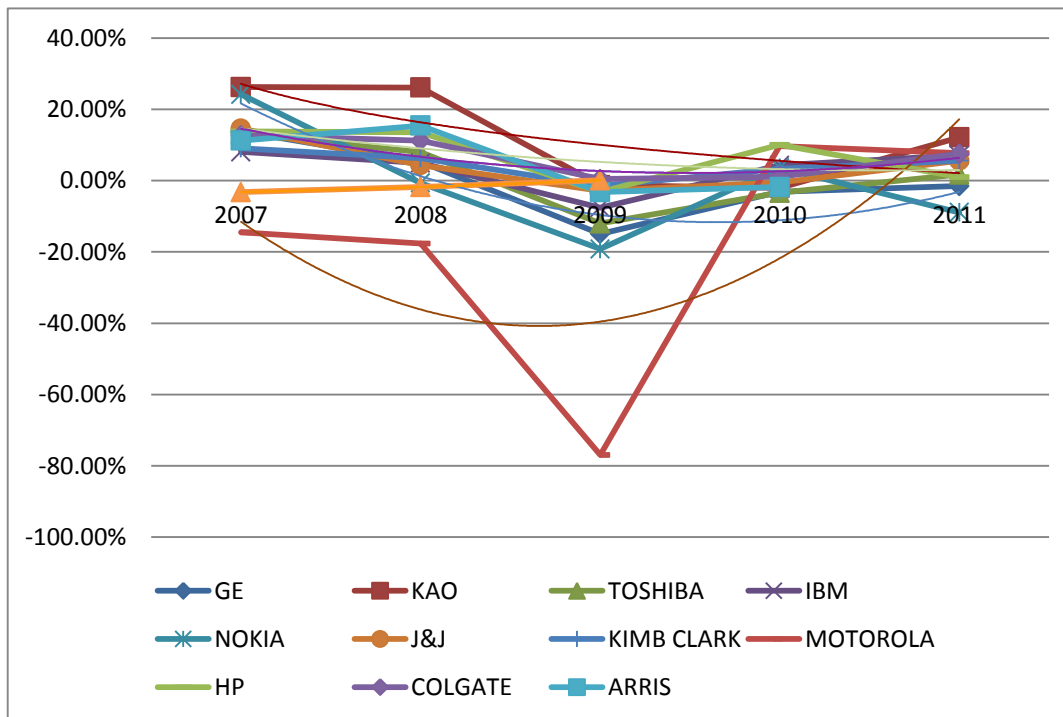
Figure 40. MNC annual revenue performance—Performance with trend lines 2 of 2.

Figure 41 show the probability plot for MNC annual revenue performance, where only three P values are < 0.05 with 95% CI; therefore, it can be concluded that the data sample is normal, and thus Bartlett's test for equal variances was used to analyze the sample's standard deviations.
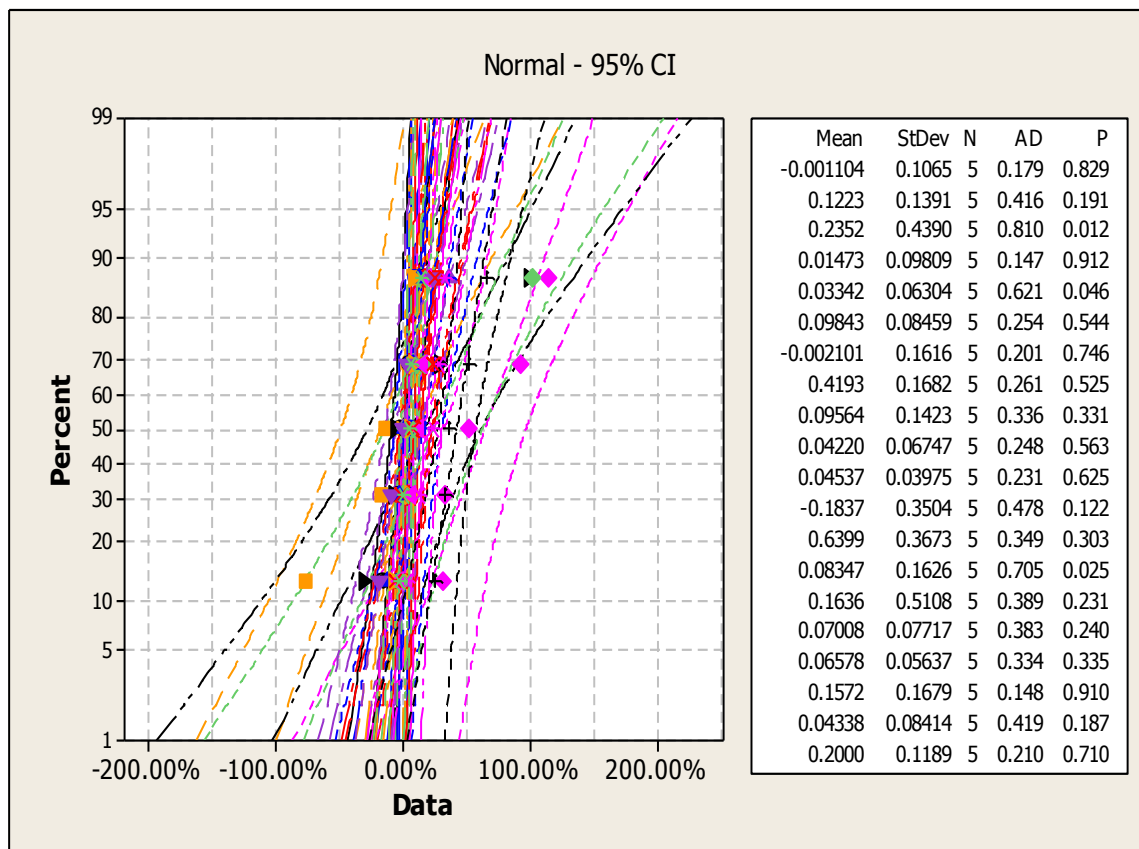
Figure 41. MNC annual revenue performance—Probability plot (data consistency analysis).

Figure 42 shows the box plot comparison for MNC annual revenue performance; the data dispersion is high, with LG, Sierra, Motorola, and RIM as examples of very high dispersions, and Kimberly Clark as an example of very low dispersion for MNC annual revenue performance.

Figure 43 shows the test for equal variances for MNC annual revenue performance with a P value of 0 using Bartlett's test, which is < 0.05 with 95% CI; therefore, the standard deviations are different. The graphic observation of the spread is consistent with the box plot comparison in that there are several outliers, such as LG, Motorola, Sierra, RIM, and Kimberly Cark. Therefore, it can be concluded that there are

statistical differences in standard deviations and variances among MNCs; this means that

the individual data points are significantly spread out from the mean and from each other.

Figure 42. MNC annual revenue performance—Box plot comparison.

Figure 43. MNC annual revenue performance—Test for equal variances.

In summary, Table 21 presents the results of the statistical analyses for MNC

annual revenue performance.

Table 21

Summary of Statistical Analyses for MNC Annual Revenue Performance

	MNC sample
	H2: REV performance (annual)
One-way ANOVA	
P value	0
P value < 0.05 (Y/N)	Y
Mean (Different/Similar)	Different
Outliers	Vonage, Apple, GE, Nokia, RIM
Performance trend lines (Different/Similar)	Different
Outliers	RIM, LG, Sierra, Motorola
Probability plot (Normal/nonparametric data sample)	Normal
Box plot comparison & Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)	
P value (Bartlett or Levene's test)	0 (Bartlett)
P value < 0.05 (Y/N)	Y
StDev (Different/Similar)	Different
Dispersion (High/Low)	High
Outliers	LG, Sierra, Motorola, RIM, Kimberly Clark

Descriptive analysis of aggregated TNC and aggregated MNC revenue performance. This section presents the results of the hypothesis testing of aggregated TNC and aggregated MNC annual revenue performance. Figure 44 shows the probability plot for aggregated TNC and aggregated MNC annual revenue performance, where the P value for aggregated MNCs is close to 0, which is < 0.05 with 95% CI. Therefore, it can be concluded that when all TNC and all MNC annual revenue performance are put together as one group, the data sample is nonparametric, and thus Levene's test for equal

variances was used to analyze the sample's standard deviations, as well as Kruskal-

Wallis for hypothesis testing.
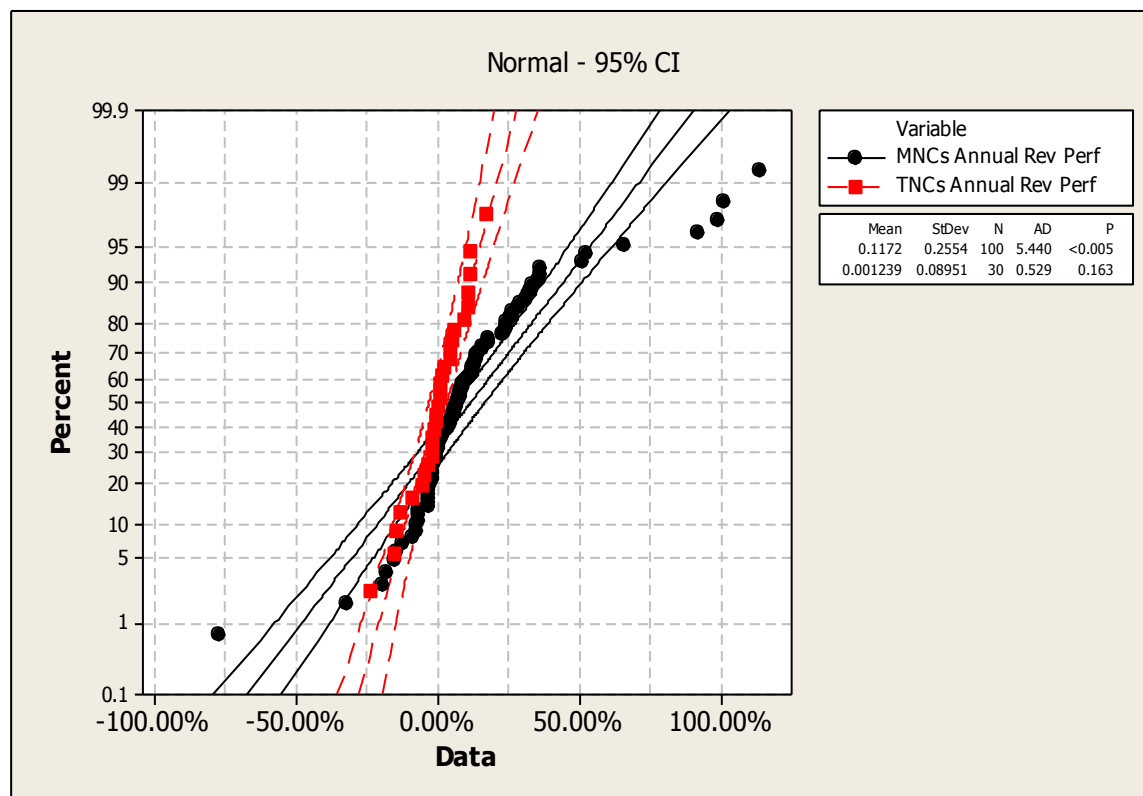
Figure 44. Aggregated TNC and aggregated MNC annual revenue performance—
Probability plot.

Figure 45 shows the test for equal variances for aggregated TNC and aggregated

MNC annual revenue performance with a P value of 0.016 using Levene's test for

nonparametric data samples as established in the analysis of the probability plot; this

value is < 0.05 with 95% CI. Therefore, the standard deviations of both aggregated data

samples are different; furthermore, as already observed when analyzing both TNC and

MNC companies separately, the dispersion of MNCs is higher than that of TNCs.
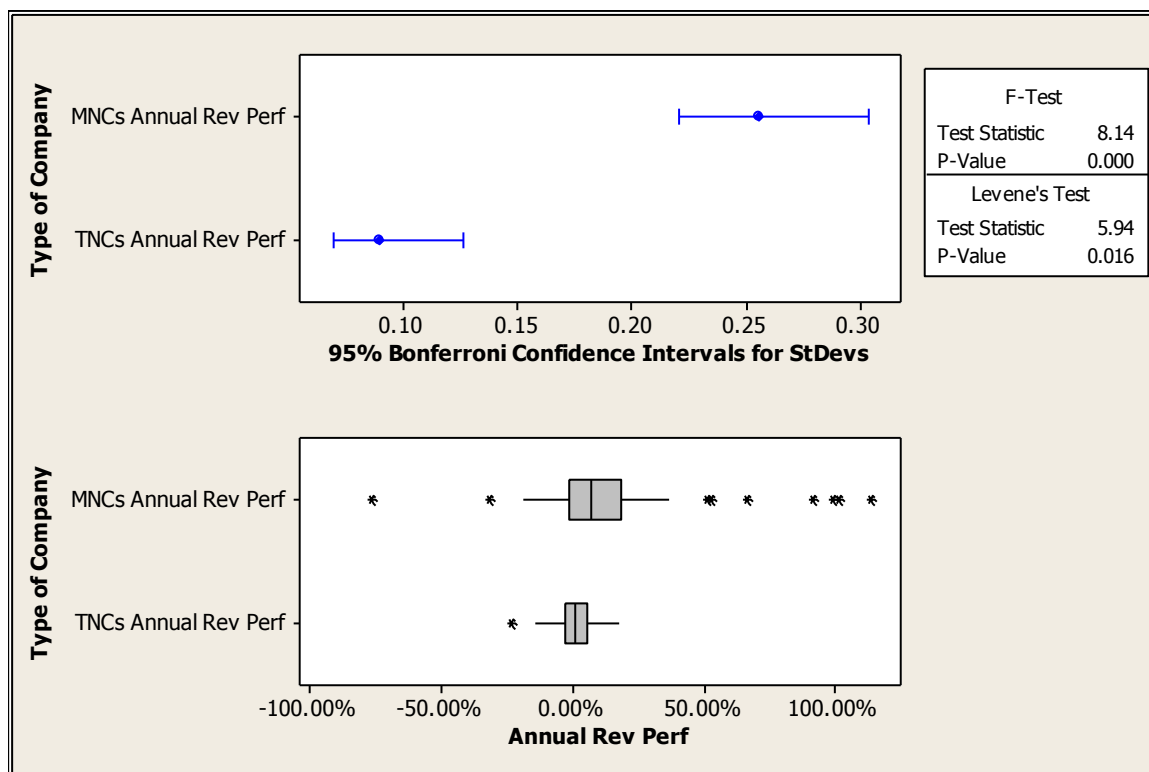
Figure 45. Aggregated TNC and aggregated MNC annual revenue performance—Test for equal variances.

Table 22 shows the binary logistic regression test for type of company (TNC or MNC) versus annual revenue performance, using aggregated TNC and aggregated MNC annual revenue performance data; the P value is 0.007, which is < 0.05 with 95% CI.

Table 22

Aggregated TNC and Aggregated MNC Annual Revenue Performance—Binary Logistic Regression, Type of Company (TNC or MNC) Versus Annual Revenue Performance

Link Function: Logit							
Response Information							
Variable	Value		Count				
Type of company	TNC Annual Rev Perf		30 (Event)				
	MNC Annual Rev Perf		100				
	Total		130				
Logistic Regression Table							
Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	Upper
Constant	-1.03122	0.218120	-4.73	0.000			
C5	-321.936	140.886	-2.29	0.022	0.00	0.00	0.00

Note. Log-Likelihood = -66.569. Test that all slopes are zero: G = 7.315, DF = 1, P-Value = 0.007.

Figure 46 shows the one-way ANOVA test for type of company (TNC or MNC), versus annual revenue performance, using aggregated TNC and aggregated MNC annual revenue performance data; the P value is 0.016, which is < 0.05 with 95% CI, and the means are different between both data samples.

```
Source    DF       SS      MS      F      P
Factor     1   0.3101  0.3101   5.94   0.016
Error    128   6.6879  0.0522
Total    129   6.9980

S = 0.2286   R-Sq = 4.43%   R-Sq(adj) = 3.68%

Level                        N    Mean    StDev
MNCs Annual Rev Perf  100  0.1172  0.2554
TNCs Annual Rev Perf   30  0.0012  0.0895

Individual 95% CIs For Mean Based on Pooled StDev


Level                       --+---------+---------+---------+-------
MNCs Annual Rev Perf                            (------*-----)
TNCs Annual Rev Perf    (-----------*-----------)
                            --+---------+---------+---------+-------
                          -0.070     0.000     0.070     0.140
```
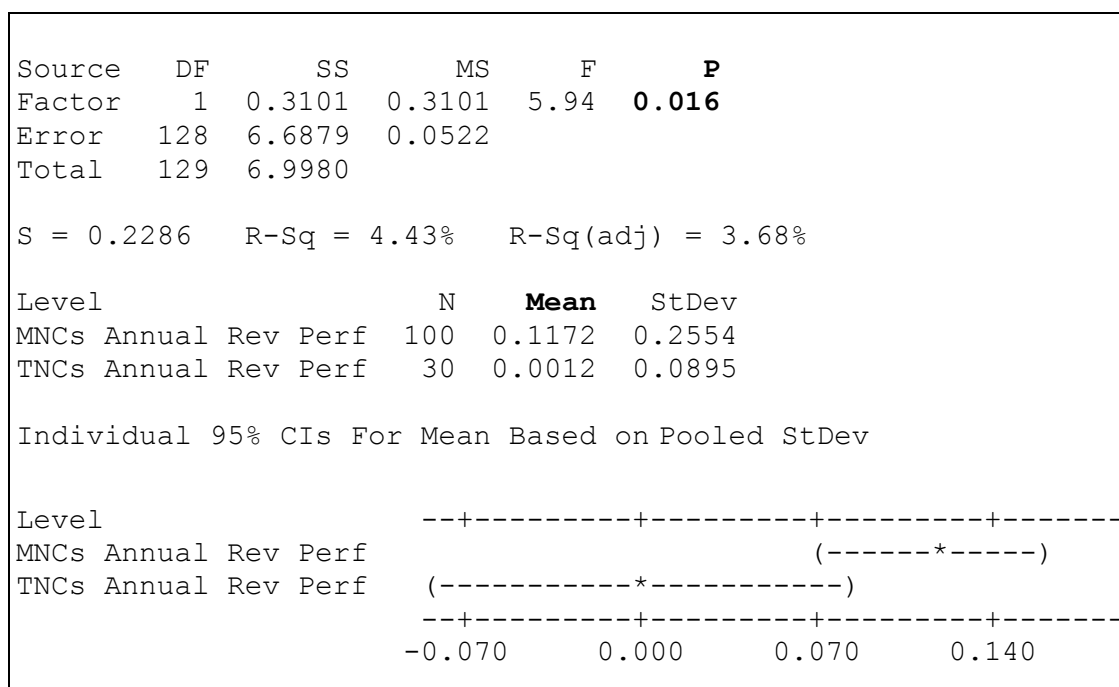
Figure 46. Aggregated TNC and aggregated MNC annual revenue performance—One-way ANOVA, type of company (TNC or MNC) versus annual revenue performance.

Table 23 shows the Kruskal-Wallis test for type of company (TNC or MNC),

versus annual revenue performance, using aggregated TNC and aggregated MNC annual

revenue performance data; the P value is 0.005, which is < 0.05 with 95% CI, and the

medians are different between both data samples.

Table 23

Aggregated TNC and Aggregated MNC Annual Revenue Performance—Kruskal-Wallis Test, Type of Company (TNC or MNC) Versus Annual Revenue Performance

Type of company	N	Median	Ave rank	Z
MNCs Annual Rev Perf	100	0.069903	70.5	2.79
TNCs Annual Rev Perf	30	0.006261	48.7	-2.79
Overall	130		65.5	

Note. H = 7.79. DF = 1. P = 0.005.

Hypothesis 2

This hypothesis tested whether there was a relationship between MNC 5-year revenue performance and the successful application of the TNC model. The null and alternate hypotheses were stated as follows:

> $H2_0$: MNC 5-year REV performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

> $H2_a$: MNC 5-year REV performance (2007–2011) is positively related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

All three hypothesis tests were applied at a significance level of 0.05, or 95% CI: the binary logistic regression with P = 0.007, the one-way ANOVA test with P = 0.016, and the Kruskal-Wallis test with P = 0.005. All tests led to the same conclusion to reject the null Hypothesis $H2_0$, and the alternate Hypothesis $H2_a$ should therefore be discussed.

This conclusion indicates, using the results of the Kruskal-Wallis test for nonparametric data samples, that the two populations' medians are not equal and that

there are grounds to believe they have a relationship. Nevertheless, there is insufficient evidence to accept the claim from the alternate Hypothesis $H2_a$ that there is a positive relationship between MNC revenue performance and having successfully applied the TNC model because, when reviewing the MNC data sample, the mean and standard deviations for the MNC sample are different. MNC differences when compared among themselves are also shown in the probability plot for aggregated TNC versus aggregated MNC (see Figure 44) where TNC data points are more consistent with a normal distribution, while the MNC data points show a slight S shape and right skew and are on the performance with trend lines (see Figures 39 and 40).

In conclusion, the differences between TNC and MNC revenue performance are most likely driven by the differences among MNC means and standard deviations; therefore, a positive relationship between having successfully applied the TNC model and revenue performance cannot be established. Differences among MNCs may be driven by other factors separate from the application of the transnational model, such as industry-specific market factors. This is further discussed in Chapter V.

In summary, Table 24 shows the results of the tests performed for aggregated TNC and aggregated MNC annual revenue performance.

Table 24

Summary of Statistical Analyses for Aggregated TNC and Aggregated MNC Annual Revenue Performance

	Aggregated TNC and aggregated MNC
	H2: REV performance (annual)
Probability plot (Normal/nonparametric data sample)	Nonparametric
Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)	
P value (Bartlett or Levene's test)	0.016 (Levene)
P value < 0.05 (Y/N)	Y
StDev (Different/Similar)	Different
Binary Logistic Regression	
P value	0.007
P value < 0.05 (Y/N)	Y
H_0 Rejected/Accepted	Rejected
One-way ANOVA	
P value	0.016
P value < 0.05 (Y/N)	Y
H_0 Rejected/Accepted	Rejected
Mean (Different/Similar)	Different
Nonparametric testing Mann-Whitney (MW) or Kruskal-Wallis (KW)	
P value (MW/KW)	0.005 (KW)
P value < 0.05 (Y/N)	Y
H_0 Rejected/Accepted	Rejected
Median (Different/Similar)	Different

It can be concluded that Hypothesis $H2_0$ is rejected, but the alternate Hypothesis

$H2_a$ cannot be accepted either; therefore, there is no statistical proof that having

successfully applied the TNC model has a positive impact on a company's revenue performance.

Gross Margin (GM) Performance Analysis

   Descriptive analysis of individual TNC GM performance. This section presents the results of the quantitative analysis for TNC annual gross margin performance, discussing data as per Hypothesis 3:

   H3$_0$:   MNC 5-year GM performance (2007–2011) is negatively or not

          related to having successfully applied the TNC model as per

          Bartlett and Ghoshal (1989).

   Figure 47 shows the results of the one-way ANOVA test for TNC gross margin annual performance, with a P value of 0, which is < 0.05 with 95% CI, and with Procter & Gamble as the main outlier with a higher positive value. Therefore, it can be assumed that there are significant differences among TNC means for gross margin performance.

```
Source   DF        SS        MS       F       P
Factor    5   0.190768  0.038154   66.76   0.000
Error    29   0.016574  0.000572
Total    34   0.207342

S = 0.02391   R-Sq = 92.01%   R-Sq(adj) = 90.63%

Individual 95% CIs For Mean Based on Pooled StDev

Level       N     Mean     StDev  --+---------+---------+---------+-------
P&G         6   0.51150   0.01088                                   (--*--)
UNILEVER    6   0.35395   0.03156               (--*-)
PANASONIC   6   0.28631   0.01713  (--*--)
PHILIPS     5   0.36634   0.03424                 (--*--)
NEC         6   0.30183   0.01151     (--*--)
ERICSSON    6   0.37022   0.02892                (--*--)
                                  --+---------+---------+---------+-------
                                  0.280     0.350     0.420     0.490
```

Figure 47. TNC annual GM performance—One-way ANOVA.

TNC performance trend lines and means are similar, which is not consistent with the findings from the one-way ANOVA test; this could be explained by the significantly higher performance of Procter & Gamble with an annual performance fluctuating between 10 and 20 points higher than all other TNCs, and its significantly higher mean, as observed in the one-way ANOVA test.
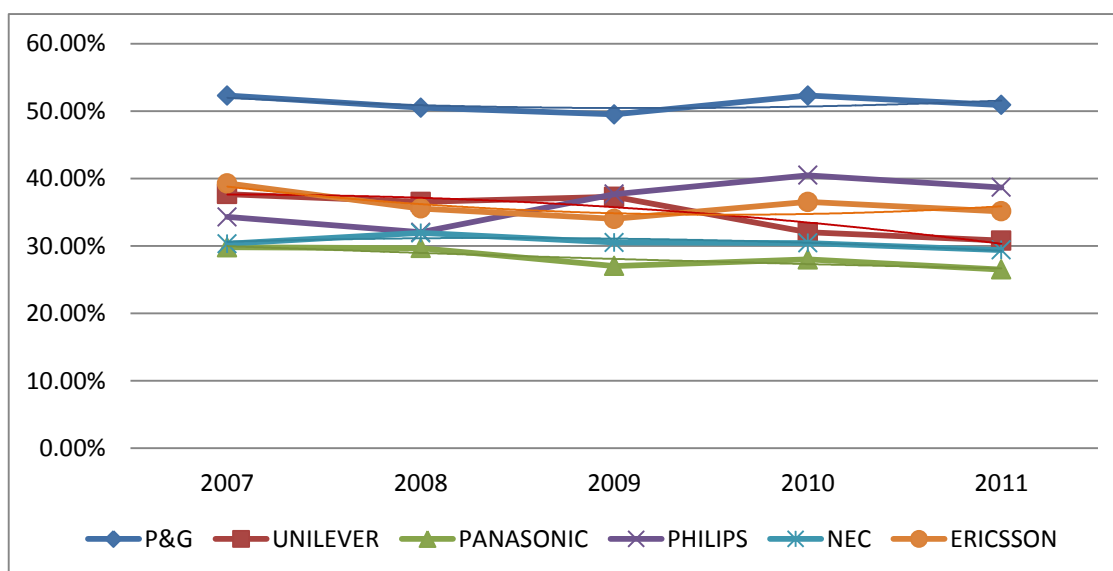
Figure 48. TNC annual GM performance—Performance with trend lines.

Figure 49 shows the probability plot as a data consistency analysis for TNC annual gross margin performance, where all P values are > 0.05 with 95% CI; therefore, it can be concluded that the data sample is normal, and thus Bartlett's test for equal variances was used to analyze the sample's standard deviations.
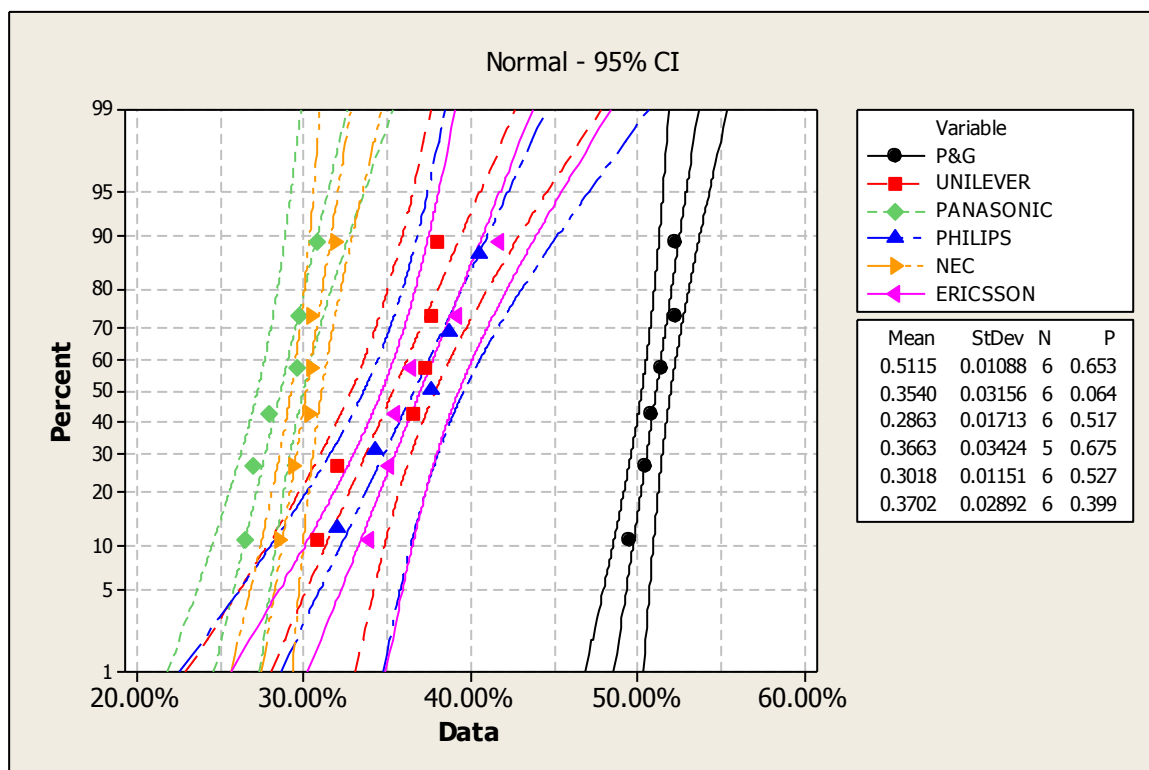
Figure 49. TNC annual GM performance—Probability plot (data consistency analysis).

Figure 50 shows the box plot comparison for TNC annual gross margin performance; data dispersion is low, with no significant outliers. Figure 51 shows the test for equal variances for TNC annual gross margin performance with a P value of 0.750 using Bartlett's test for normal data, which is > 0.05 with 95% CI; therefore, the standard deviations are similar. The graphic observation of the spread is consistent with that of the box plot comparison, showing Panasonic and Philips as the outliers for TNC annual gross margin performance. Therefore, it can be concluded that data among TNC annual gross margin performance is statistically similar.
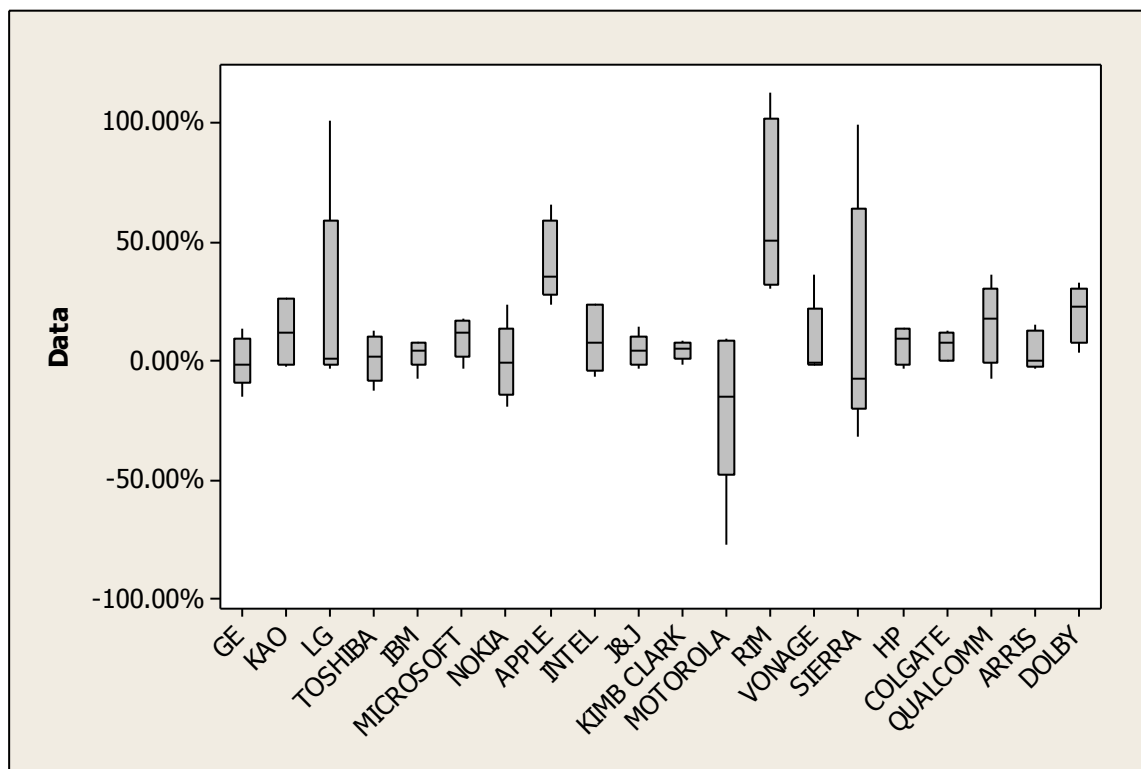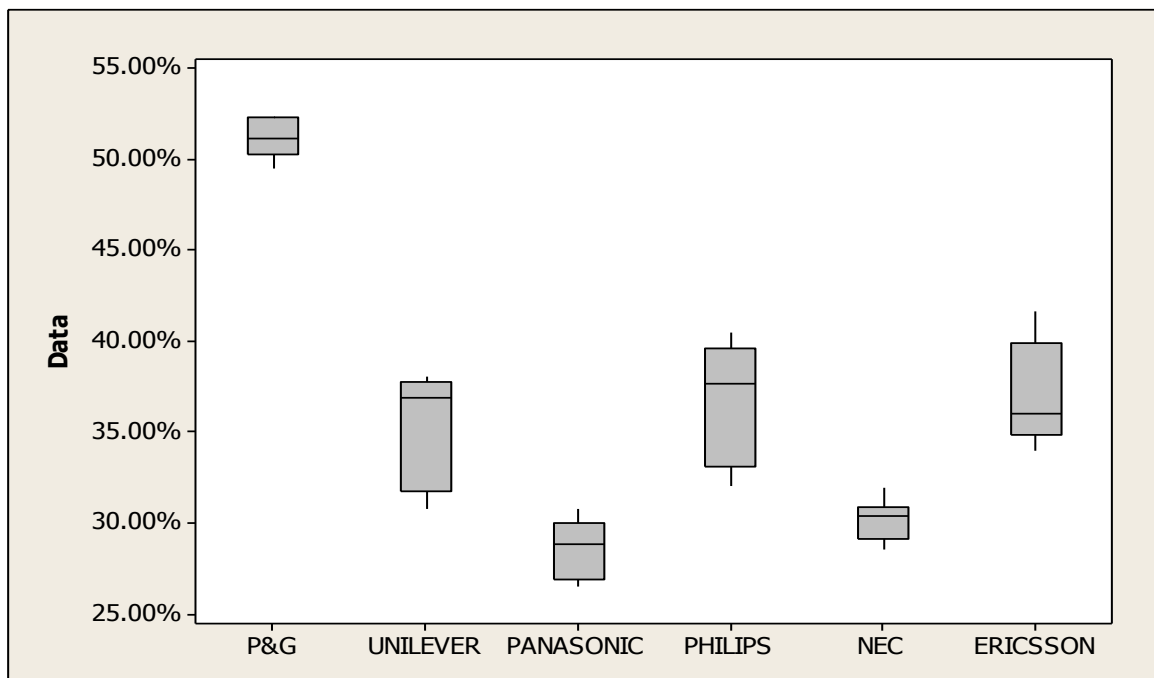
Figure 50. TNC annual GM performance—Box plot comparison.

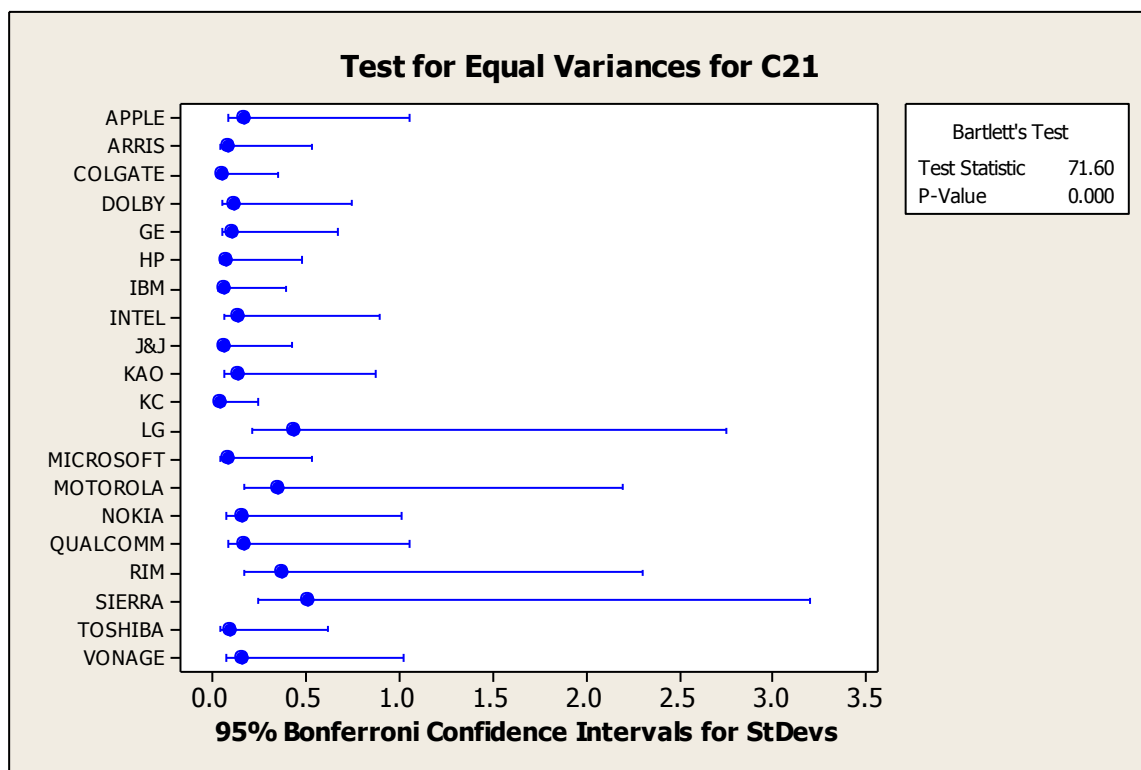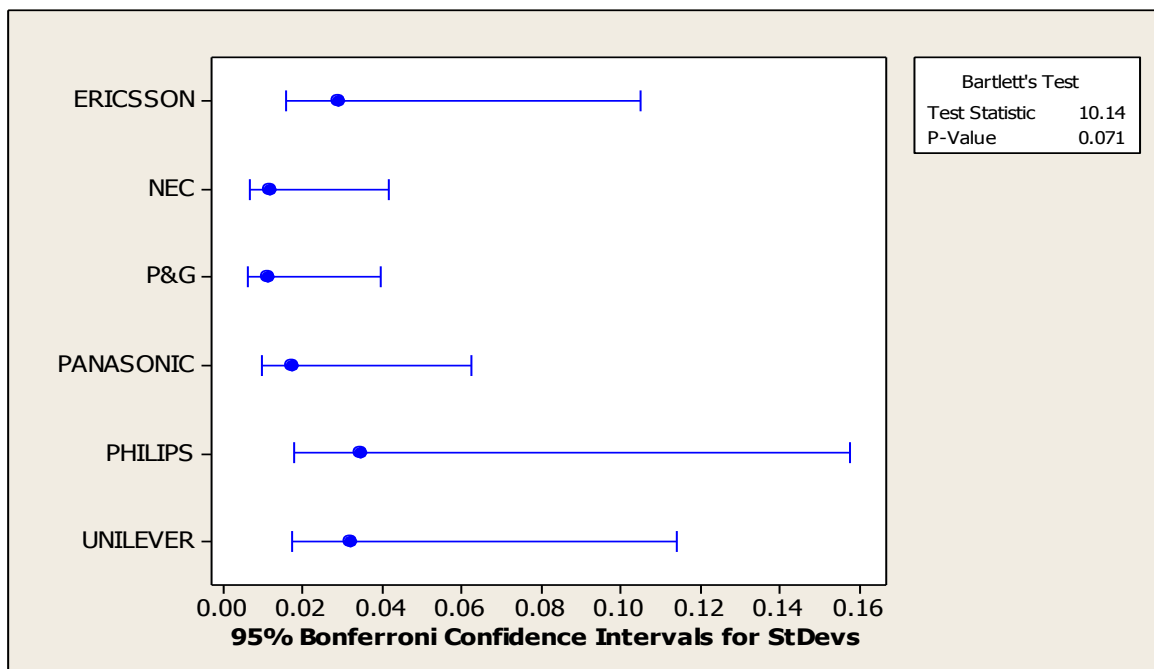*Figure 51*. TNC annual GM performance—Test for equal variances.

In summary, Table 25 presents the results of the statistical analyses for TNC annual gross margin performance.

Table 25

Summary of Statistical Analyses for TNC Annual Gross Margin Performance

		TNC sample
		H3: GM performance
One-way ANOVA		
	P value	0
	P value < 0.05 (Y/N)	Y
	Mean (Different/Similar)	Different
	Outliers	PG
Performance trend lines (Different/Similar)		Similar
	Outliers	
Probability plot (Normal/nonparametric data sample)		Normal
Box plot comparison & Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)		
	P value (Bartlett or Levene's test)	0.071 (Bartlett)
	P value < 0.05 (Y/N)	N
	StDev (Different/Similar)	Similar
	Dispersion (High/Low)	Low
	Outliers	

Descriptive analysis of individual MNC GM performance. This section presents the results of the quantitative analysis for MNC annual gross margin performance. Figure 52 shows the results of the one-way ANOVA test for MNC annual gross margin performance, with a P value of 0, which is < 0.05 with 95% CI; Vonage is

the main outlier with a higher negative value. Therefore, it can be concluded that there are significant statistical differences among the means for annual gross margin performance when comparing MNCs among themselves.

```
Source    DF       SS       MS      F       P
Factor    19  6.63621  0.34927  59.50   0.000
Error    100  0.58697  0.00587
Total    119  7.22318

S = 0.07661   R-Sq = 91.87%   R-Sq(adj) = 90.33%

Individual 95% CIs For Mean Based on Pooled StDev


Level       N     Mean    StDev -----+---------+---------+---------+----
GE          6  0.11973  0.03718         (-*-)
KAO         6  0.57603  0.01253                          (-*-)
LG          6  0.23361  0.01462              (-*-)
TOSHIBA     6  0.23819  0.02507              (-*-)
IBM         6  0.44663  0.01852                   (-*-)
MICROSOFT   6  0.79951  0.01716                                  (-*-)
NOKIA       6  0.32079  0.01976                (-*-)
APPLE       6  0.36210  0.04573                 (-*-)
INTEL       6  0.57064  0.05652                          (-*-)
J&J         6  0.70341  0.01118                              (-*--)
KIMBERLY    6  0.31336  0.01680               (-*--)
MOTOROLA    6  0.39227  0.12064                  (-*-)
RIM         6  0.61634  0.09794                            (--*-)
VONAGE      6 -0.09660  0.27966 (-*-)
SIERRA      6  0.30824  0.02649               (-*-)
HP          6  0.24179  0.00391             (-*-)
COLGATE     6  0.57027  0.01621                          (-*-)
QUALCOMM    6  0.69726  0.01311                             (-*-)
ARRIS       6  0.34783  0.05817                (-*-)
DOLBY       6  0.86598  0.03745                                  (-*-)
                                  -----+---------+---------+---------+----
                                    0.00      0.30      0.60      0.90
```

Figure 52. MNC annual GM performance—One-way ANOVA.

Figure 53 shows annual gross margin performance with trend lines for MNCs; these are similar, with only Vonage as the outlier, which was initially impacted by an unsuccessful IPO offering in 2006, losing more than 30% of its value in the first week of trading (see Appendix G). In 2007, Vonage posted losses of $69.5 million after losing a patent case against Sprint. Therefore, it can be concluded that MNC performance trend lines, which show year-over-year annual gross margin performance, are consistent and behave similarly, while the means for the same MNCs are different.
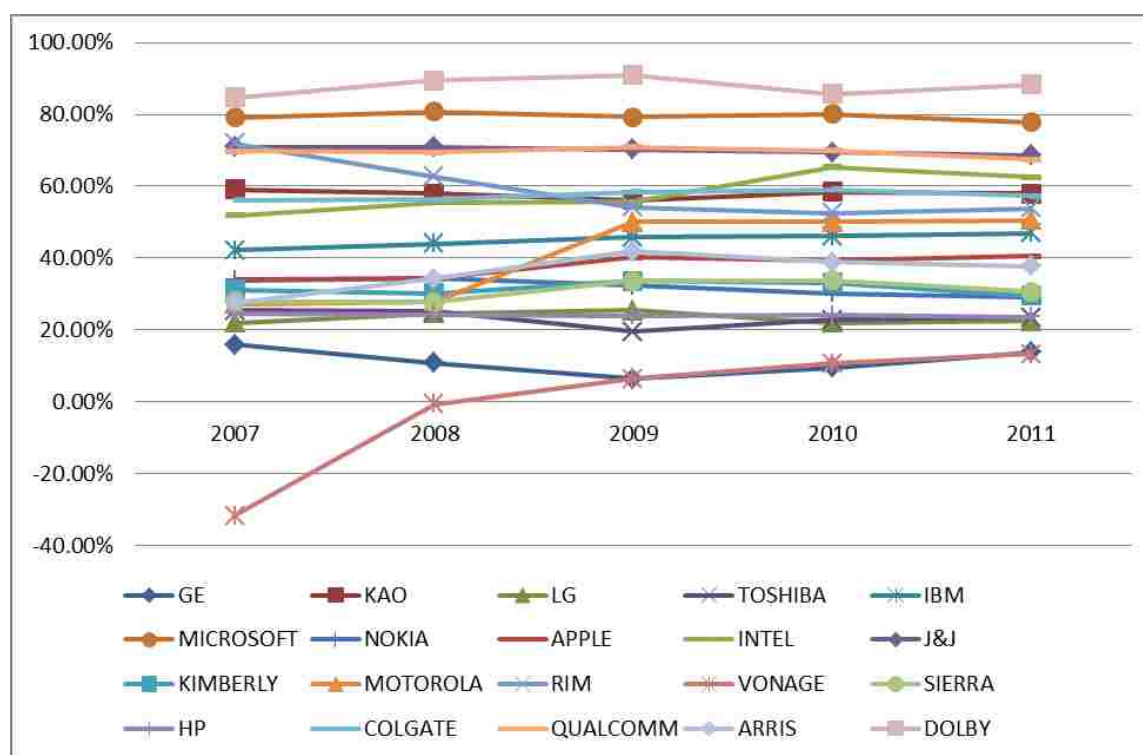
Figure 53. MNC annual GM performance—Performance with trend lines.

Figure 54 shows the probability plot for MNC annual gross margin performance, where only one P value is < 0.05 with 95% CI; therefore, it can be concluded that the data

sample is normal, and thus Bartlett's test for equal variances was used to analyze the

sample's standard deviations.

Mean	StDev	N	P
0.1197	0.03718	6	0.674
0.5760	0.01253	6	0.265
0.2336	0.01462	6	0.380
0.2382	0.02507	6	0.521
0.4466	0.01852	6	0.600
0.7995	0.01716	6	0.780
0.3208	0.01976	6	0.504
0.3621	0.04573	6	0.240
0.5706	0.05652	6	0.282
0.7034	0.01118	6	0.771
0.3134	0.01680	6	0.293
0.3923	0.1206	6	0.018
0.6163	0.09794	6	0.158
-0.09660	0.2797	6	0.109
0.3082	0.02649	6	0.384
0.2418	0.003907	6	0.887
0.6973	0.01311	6	0.306
0.5703	0.01621	6	0.786
0.3478	0.05817	6	0.468
0.8660	0.03745	6	0.808
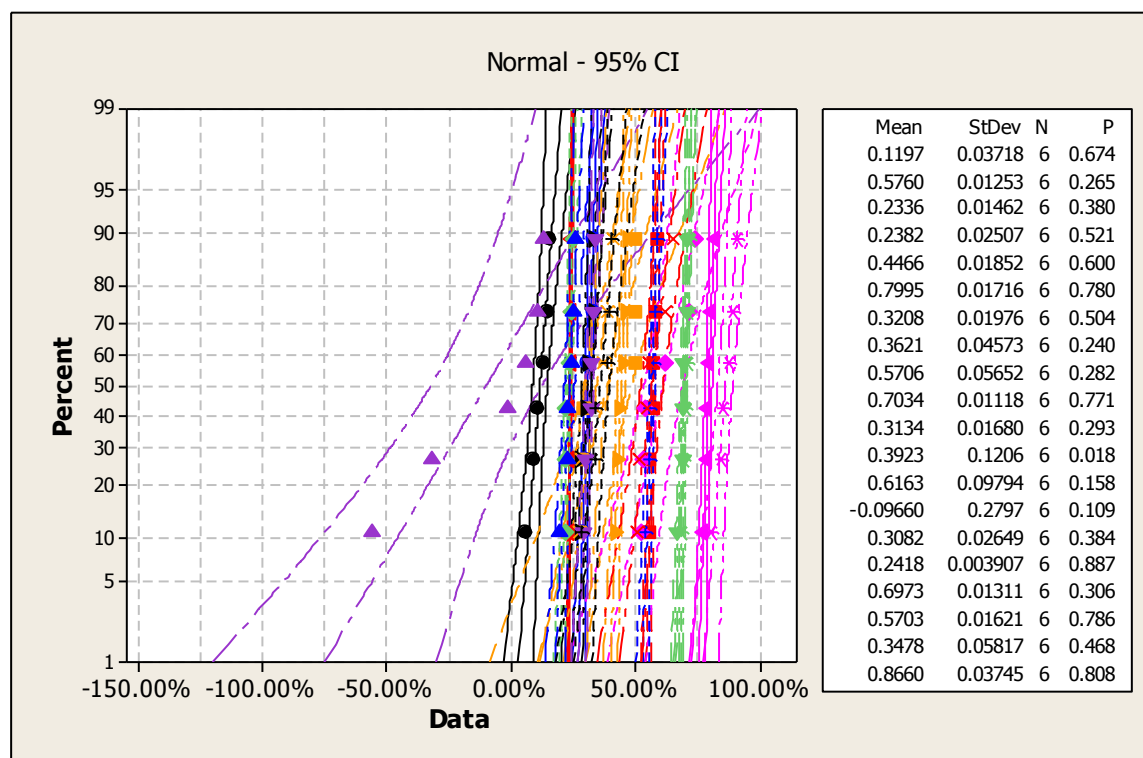
Figure 54. MNC annual GM performance—Probability plot (data consistency analysis).

Figure 55 shows the box plot comparison for MNC annual gross margin

performance; the data dispersion is low, with Vonage, RIM, and Motorola, all

telecommunications companies, as outliers with high dispersions for MNC annual gross

margin performance. Figure 56 shows the test for equal variances for MNC annual gross

margin performance with a P value of 0 using Bartlett's test, which is < 0.05 with 95%

CI; therefore, the standard deviations are different. The graphic observation of the spread

is consistent with the box plot comparison. Therefore, it can be concluded that there are

statistical differences in standard deviations and variances among MNCs; this means that

the individual data points are significantly spread out from the mean and from each other, even though from a descriptive statistics point of view the data points show a low level of dispersion.
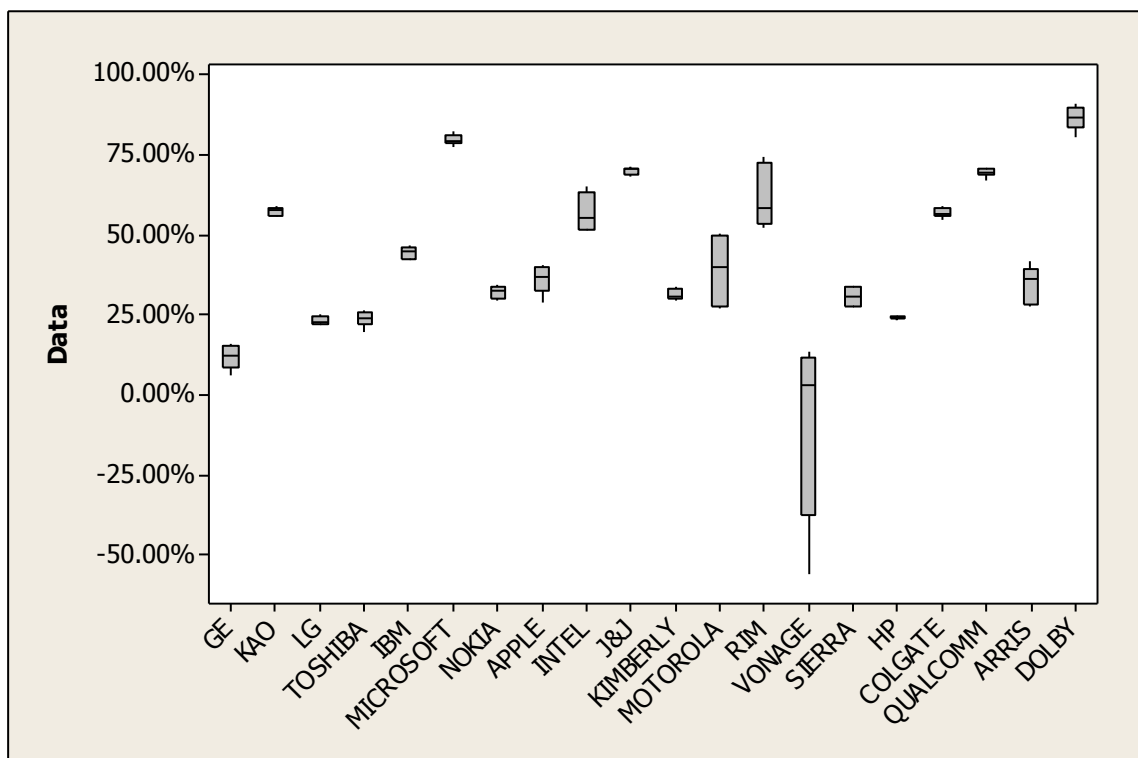
Figure 55. MNC annual GM performance—Box plot comparison.
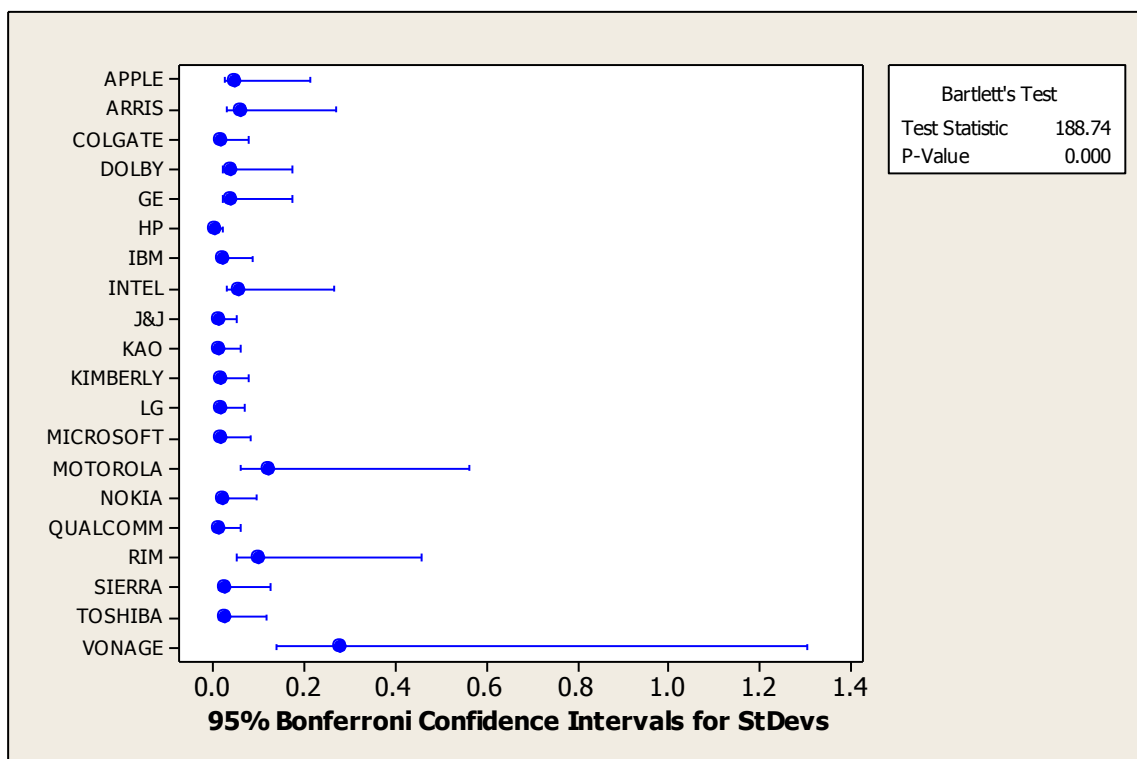
Figure 56. MNC annual GM performance—Test for equal variances.

In summary, Table 26 presents the results of the statistical analyses for MNC annual gross margin performance.

Table 26

Summary of Statistical Analyses for MNC Annual Gross Margin Performance

		MNC sample
		H3: GM performance
One-way ANOVA		
	P value	0
	P value < 0.05 (Y/N)	Y
	Mean (Different/Similar)	Different
	Outliers	Vonage
Performance trend lines (Different/Similar)		Similar
	Outliers	Vonage
Probability plot (Normal/nonparametric data sample)		Normal
Box plot comparison & Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)		
	P value (Bartlett or Levene's test)	0 (Bartlett)
	P value < 0.05 (Y/N)	Y
	StDev (Different/Similar)	Different
	Dispersion (High/Low)	Low
	Outliers	Vonage, RIM, Motorola

Descriptive analysis of aggregated TNC and aggregated MNC GM

performance. This section presents the results of the hypothesis testing of aggregated

TNC and aggregated MNC annual gross margin performance. Figure 57 shows the

probability plot for aggregated TNC and aggregated MNC annual gross margin

performance, where both P values for aggregated TNCs and MNCs are close to zero,

which is < 0.05 with 95% CI. Therefore, it can be concluded that when all TNC and all

MNC annual gross margin performance are put together as one group, the data sample is

nonparametric, and thus Levene's test for equal variances was used to analyze the

sample's standard deviations, as well as Kruskal-Wallis for hypothesis testing.
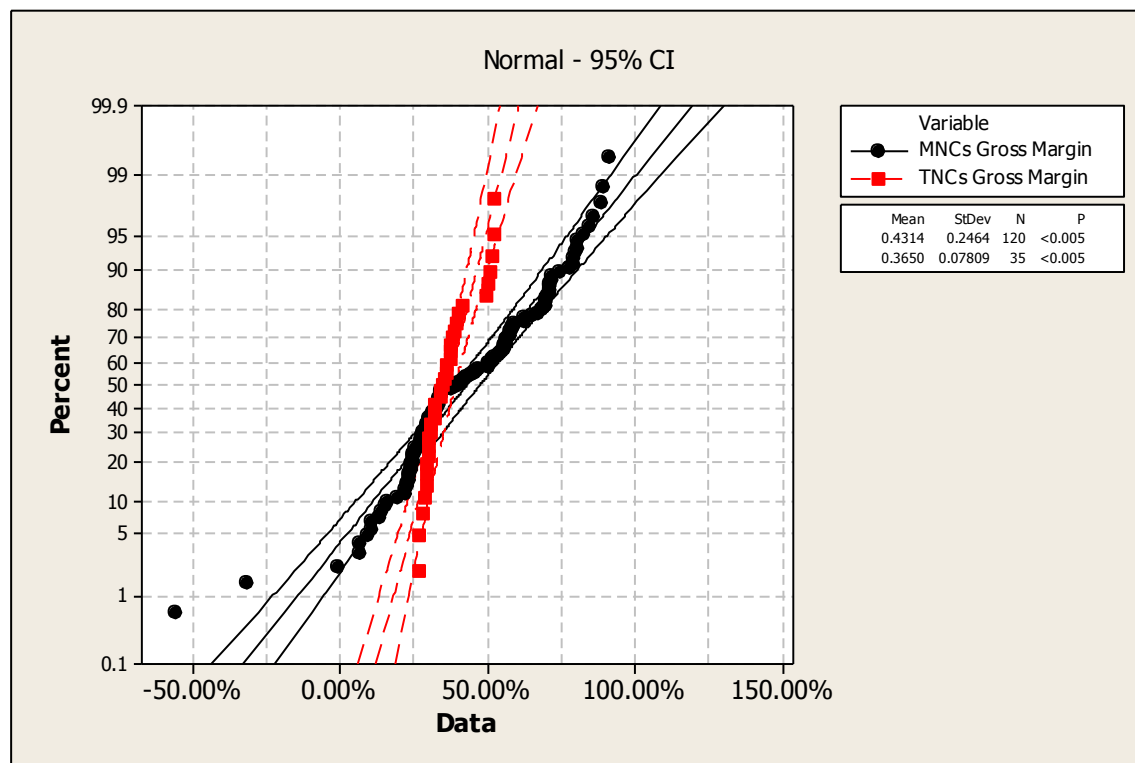
Figure 57. Aggregated TNC and aggregated MNC annual GM performance—Probability plot.

Figure 58 shows the test for equal variances for aggregated TNC and aggregated

MNC annual gross margin performance with a P value of 0 using Levene's test for

nonparametric data samples as established in the analysis of the probability plot; this

value is < 0.05 with 95% CI. Therefore, the standard deviations of both aggregated data

samples are different; furthermore, as already observed when analyzing both TNC and

MNC companies separately, the dispersion of MNCs is higher than that of TNCs.
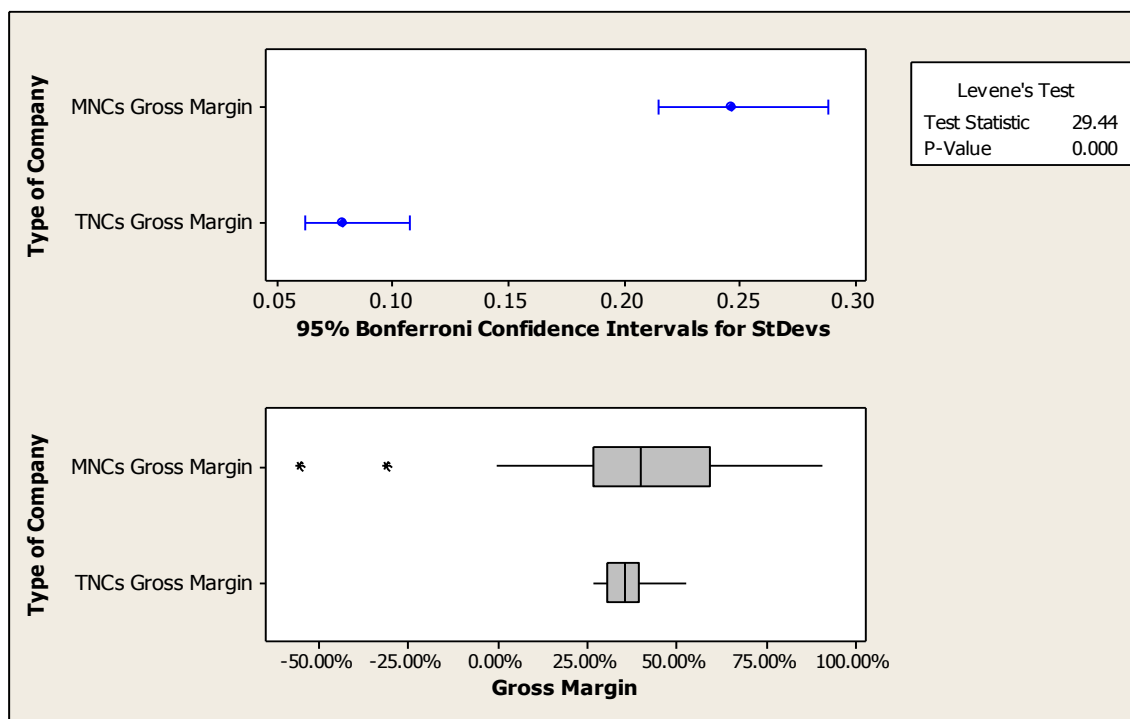
Figure 58. Aggregated TNC and aggregated MNC annual GM performance—Test for equal variances.

Table 27 shows the binary logistic regression test for type of company (TNC or MNC) versus annual gross margin performance, using aggregated TNC and aggregated MNC annual gross margin performance data; the P value is 0.118, which is > 0.05 with 95% CI.

Table 27

Aggregated TNC and Aggregated MNC Annual GM Performance—Binary Logistic Regression, Type of Company (TNC or MNC) Versus Annual Revenue Performance

	Link Function: Logit						
	Response Information						
Variable	Value			Count			
Type of company	TNC Gross Margin			35 (Event)			
	MNC Gross Margin			120			
	Total			155			

Logistic Regression Table							
					Odds	95% CI	
Predictor	Coef	SE Coef	Z	P	Ratio	Lower	Upper
Constant	-0.688444	0.389876	-1.77	0.077			
C5	-0.0136320	0.0088451	-1.54	0.123	0.99	0.97	1.00

Note. Log-Likelihood = -81.575. Test that all slopes are zero: G = 2.440, DF = 1, P-Value = 0.118.

Figure 59 shows the one-way ANOVA test for type of company (TNC or MNC) versus annual gross margin performance, using aggregated TNC and aggregated MNC annual performance data; the P value is 0.119, which is > 0.05 with 95% CI. The means are similar between both data samples.

```
Source              DF      SS       MS      F      P
Type of Company      1   0.1194   0.1194   2.46   0.119
Error              153   7.4305   0.0486
Total              154   7.5499

S = 0.2204    R-Sq = 1.58%    R-Sq(adj) = 0.94%


Level               N    Mean    StDev
MNC Gross Margin   120   0.4314   0.2464
TNC Gross Margin    35   0.3650   0.0781

Individual 95% CIs For Mean Based on Pooled StDev


Level                --+---------+---------+---------+-------
MNC Gross Margin                         (-------*-------)
TNC Gross Margin     (-------------*--------------)
                     --+---------+---------+---------+-------
                     0.300     0.350     0.400     0.450

Pooled StDev = 0.2204
```
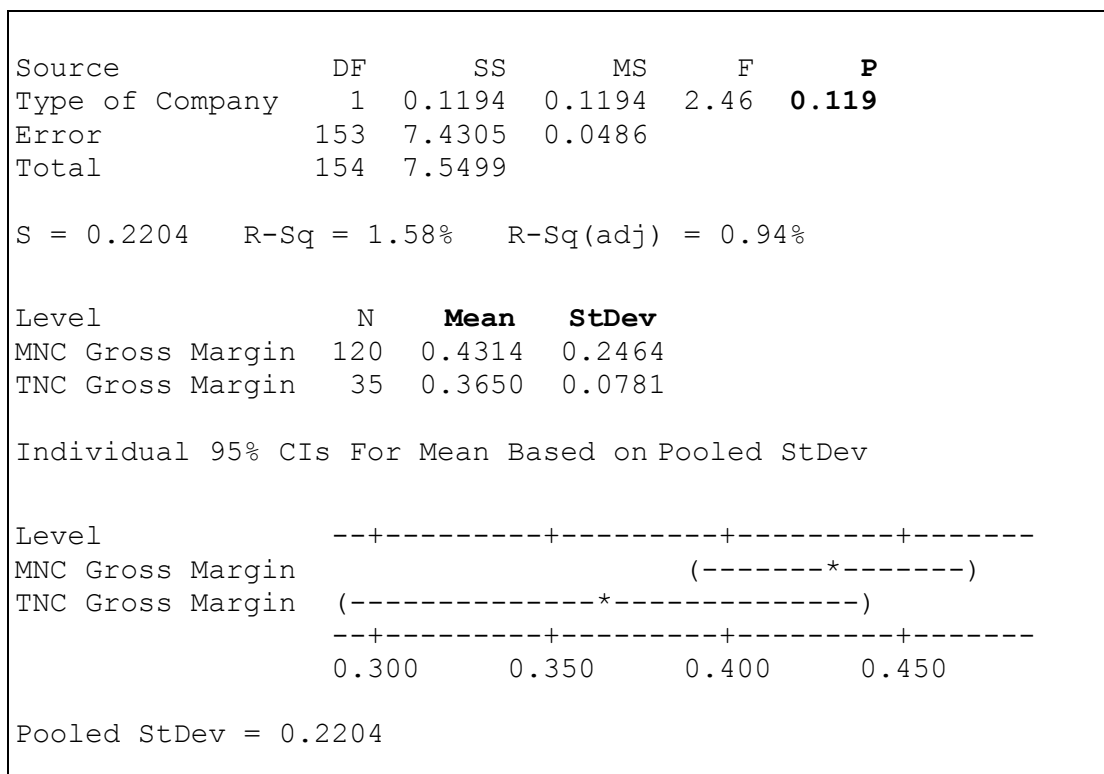
Figure 59. Aggregated TNC and aggregated MNC annual GM performance—One-way ANOVA, type of company (TNC or MNC) versus annual GM performance.

Table 28 shows the Kruskal-Wallis test for type of company (TNC or MNC) versus annual gross margin performance, using aggregated TNC and aggregated MNC annual gross margin performance data; the P value is 0.268, which is > 0.05 with 95% CI. The medians are similar between both data samples.

Table 28

Aggregated TNC and Aggregated MNC Annual GM Performance—Kruskal-Wallis Test, Type of Company (TNC or MNC) Versus Annual GM Performance

Type of company	N	Median	Ave rank	Z
MNC Gross Margin	120	0.3976	80.2	1.11
TNC Gross Margin	35	0.3513	70.6	-1.11
Overall	155		78.0	

Note. H = 1.23. DF = 1. P = 0.268 (adjusted for ties).

Hypothesis 3

This hypothesis tested whether there was a relationship between MNC 5-year gross margin performance and the successful application of the TNC model. The null and alternate hypotheses were stated as follows:

$H3_0$: MNC 5-year GM performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

$H3_a$: MNC 5-year GM performance (2007–2011) is positively related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

All three hypothesis tests were applied at a significance level of 0.05, or 95% CI: the binary logistic regression with P = 0.118, the one-way ANOVA test with P = 0.119, and the Kruskal-Wallis test for nonparametric data samples with P = 0.268. All tests led to the same conclusion to accept the null Hypothesis $H3_0$, indicating there is no relationship between MNC gross margin performance and having successfully applied the TNC model.

In summary, Table 29 shows the results of the tests performed for aggregated

TNC and aggregated MNC annual gross margin performance.

Table 29

Summary of Statistical Analyses for Aggregated TNC and Aggregated MNC Annual Gross Margin Performance

	Aggregated TNC and aggregated MNC
	H3: GM performance (annual)
Probability plot (Normal/nonparametric data sample)	Nonparametric
Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)	
P value (Bartlett or Levene's test)	0 (Levene)
P value < 0.05 (Y/N)	Y
StDev (Different/Similar)	Different
Binary Logistic Regression	
P value	0.118
P value < 0.05 (Y/N)	N
H_0 Rejected/Accepted	Accepted
One-way ANOVA	
P value	0.119
P value < 0.05 (Y/N)	N
H_0 Rejected/Accepted	Accepted
Mean (Different/Similar)	Similar
Nonparametric testing Mann-Whitney (MW) or Kruskal-Wallis (KW)	
P value (MW/KW)	0.268 (KW)
P value < 0.05 (Y/N)	N
H_0 Rejected/Accepted	Accepted
Median (Different/Similar)	Similar

It can be concluded that Hypothesis $H3_0$ is accepted since there is no statistical relationship between MNC gross margin performance and having successfully applied the TNC model. In other words, there is no statistical proof that having successfully applied the TNC model has a positive impact on a company's gross margin performance.

ROS Performance Analysis

    Descriptive analysis of individual TNC ROS performance. This section presents the results of the quantitative analysis for TNC annual return on sales performance, discussing data as per Hypothesis 4:

        $H4_0$:   MNC 5-year ROS performance (2007–2011) is negatively or not

                related to having successfully applied the TNC model as per

                Bartlett and Ghoshal (1989).

Figure 60 shows the results of the one-way ANOVA test for TNC return on sales annual performance with a P value of 0, which is < 0.05 with 95% CI; therefore, it can be assumed that there are significant differences among TNC means for return on sales performance.

```
Source   DF       SS       MS      F      P
Factor    5  0.10324  0.02065  10.34  0.000
Error    24  0.04795  0.00200
Total    29  0.15119

S = 0.04470   R-Sq = 68.29%   R-Sq(adj) = 61.68%

Individual 95% CIs For Mean Based on Pooled StDev


Level       N     Mean    StDev --------+---------+---------+---------+-
P&G         5  0.15568  0.01476                            (-----*-----)
UNILEVER    5  0.10572  0.01459                  (-----*-----)
PANASONIC 5  0.00141  0.03366   (-----*-----)
PHILIPS     5  0.04151  0.09015          (-----*-----)
NEC         5 -0.01286  0.03232 (-----*-----)
ERICSSON    5  0.06087  0.03538            (-----*-----)
                                --------+---------+---------+---------+-
                                    0.000     0.070     0.140     0.210
Pooled StDev = 0.04470
```
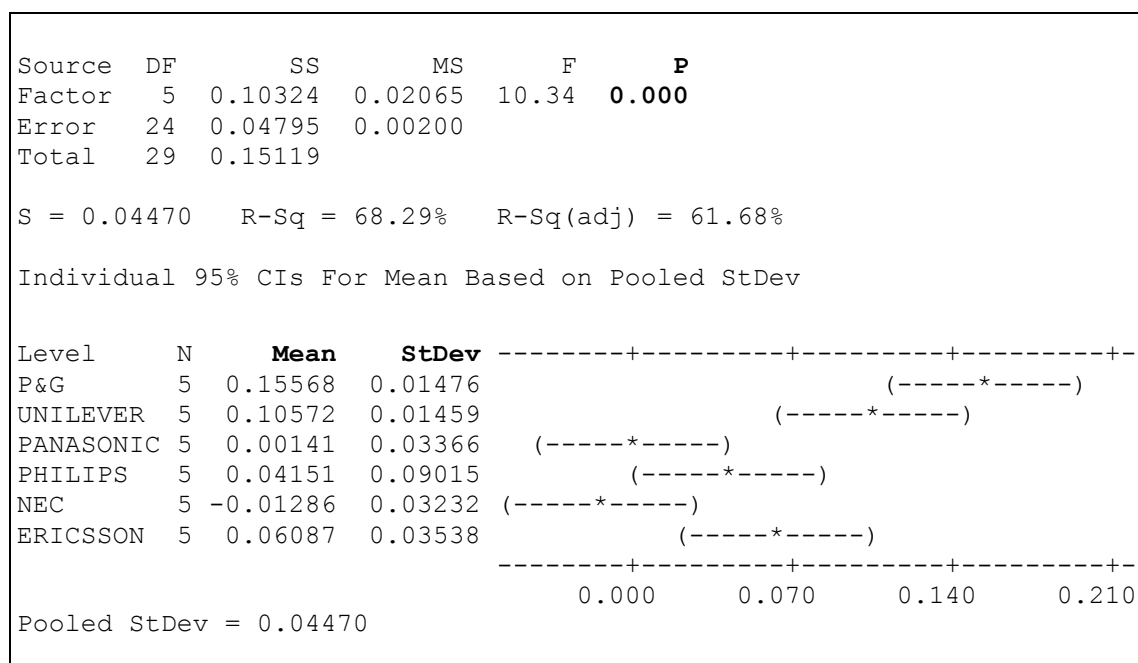
Figure 60. TNC annual ROS performance—One-way ANOVA.

Figure 61 shows the TNC annual return on sales performance with trend lines;

performance trend lines are different with Philips as the major outlier, mainly driven by

significant internal events such as the acquisition of Genlyte in 2007 and the layoff of

6,000 employees in 2009 (see Appendix F). Therefore, it can be assumed that TNC

performance trend lines and means are different, which is consistent with the findings

from the one-way ANOVA test.
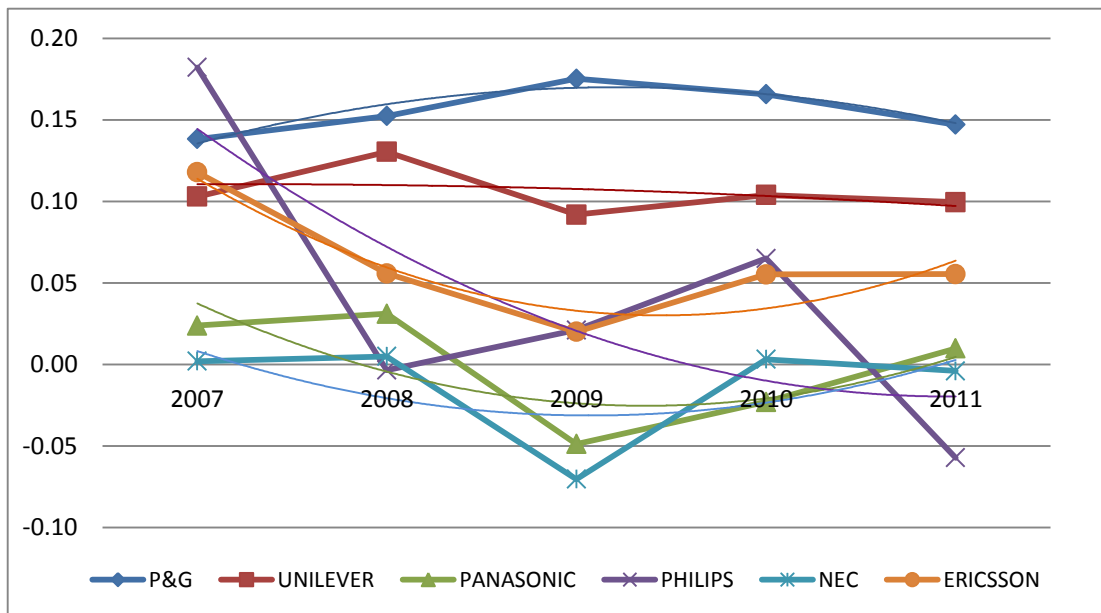
Figure 61. TNC annual ROS performance—Performance with trend lines.

Figure 62 shows the probability plot as a data consistency analysis for TNC annual return on sales performance, where only one P value is < 0.05 with 95% CI; therefore, it can be concluded that the data sample is normal, and thus Bartlett's test for equal variances was used to analyze the sample's standard deviations.
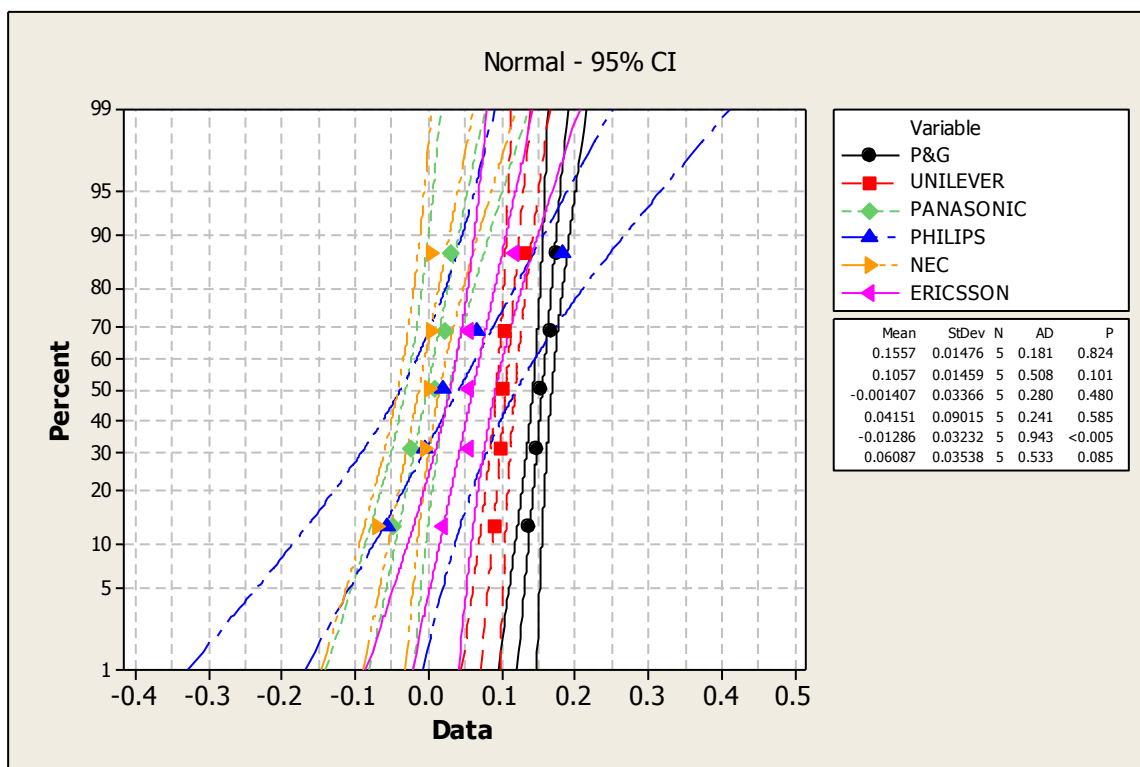
Figure 62. TNC annual ROS performance—Probability plot (data consistency analysis).

Figure 63 shows the box plot comparison for TNC annual return on sales performance; data dispersion is low, with Philips as an outlier. Figure 64 shows the test for equal variances for TNC annual return on sales performance with a P value of 0.004 using Bartlett's test for normal data, which is < 0.05 with 95% CI; therefore, the standard deviations are different. The graphic observation of the spread shows Philips as the outlier for TNC annual return on sales performance; therefore, it can be concluded that there are statistical differences among TNC annual return on sales performance data.
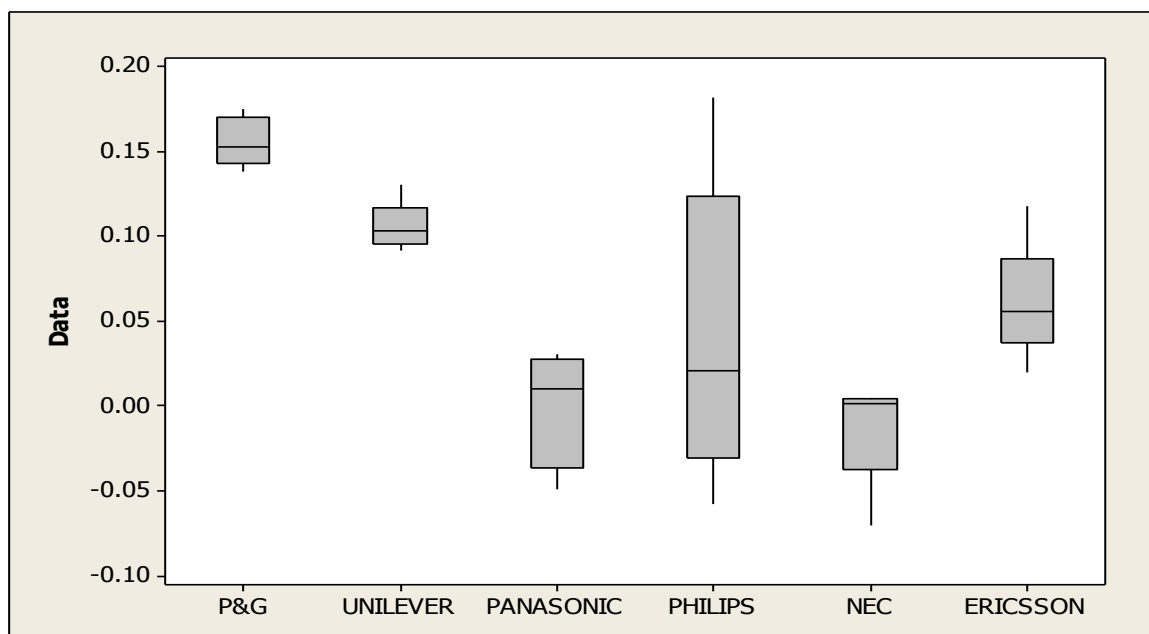
Figure 63. TNC ROS annual performance—Box plot comparison.
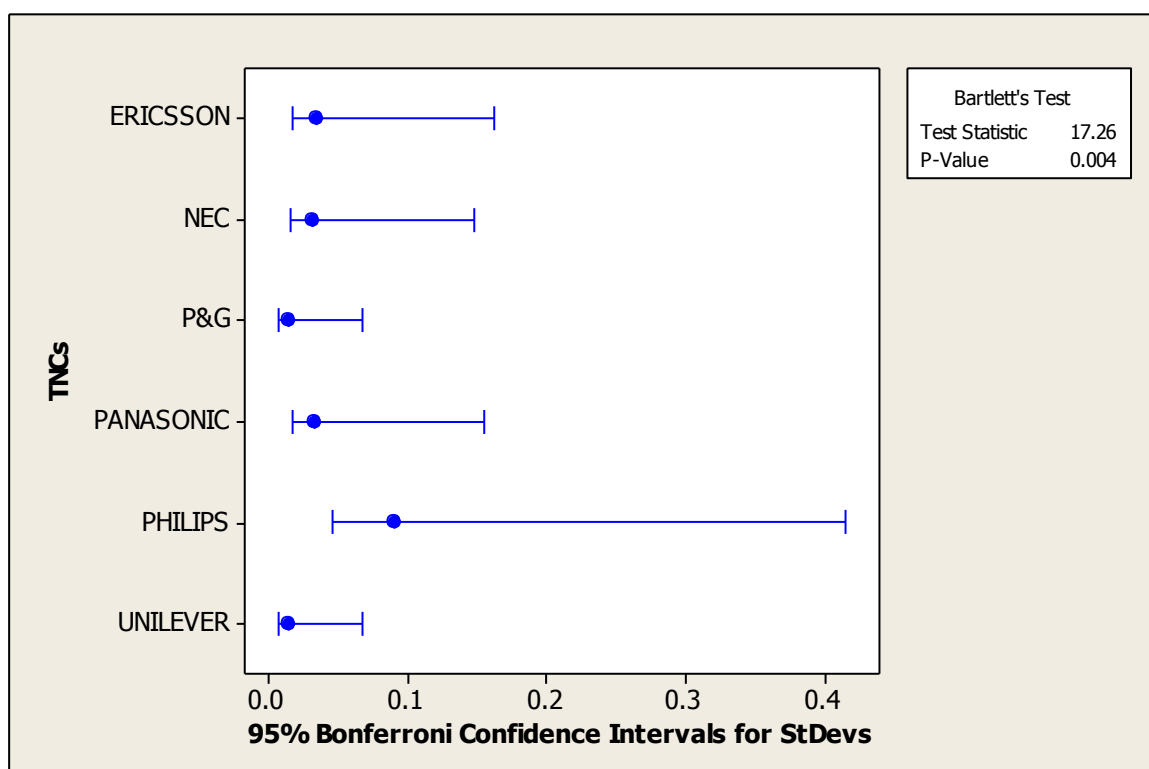
Figure 64. TNC ROS annual performance—Test for equal variances.

In summary, Table 30 presents the results of the statistical analyses for TNC

annual return on sales performance.

Table 30

Summary of Statistical Analyses for TNC Annual Return on Sales Performance

	TNC sample
	H4: ROS performance
One-way ANOVA	
P value	0
P value < 0.05 (Y/N)	Y
Mean (Different/Similar)	Different
Outliers	
Performance trend lines (Different/Similar)	Different
Outliers	Philips
Probability plot (Normal/nonparametric data sample)	Normal
Box plot comparison & Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)	
P value (Bartlett or Levene's test)	0.004 (Bartlett)
P value < 0.05 (Y/N)	Y
StDev (Different/Similar)	Different
Dispersion (High/Low)	Low
Outliers	Philips

Descriptive analysis of individual MNC ROS performance. This section

presents the results of the quantitative analysis for MNC annual return on sales. Figure 65

shows the results of the one-way ANOVA test for MNC annual return on sales

performance with a P value of 0, which is < 0.05 with 95% CI; Dolby and Microsoft are

the main outliers with higher positive mean values, and Vonage and Sierra are the main

outliers with higher negative mean values. Therefore, it can be concluded that there are

significant statistical differences among the means for return on sales performance when

comparing MNCs among themselves.

```
Source    DF       SS       MS      F       P
Factor    19   1.04619  0.05506   8.19   0.000
Error     80   0.53782  0.00672
Total     99   1.58401


S = 0.08199    R-Sq = 66.05%    R-Sq(adj) = 57.98%


Individual 95% CIs For Mean Based on Pooled StDev


Level         N     Mean     StDev -------+---------+---------+---------+--
GE            5   0.09713  0.02353              (-----*-----)
KAO           5   0.04634  0.00934          (-----*-----)
LG            5   0.02537  0.02334       (-----*-----)
TOSHIBA       5   0.00058  0.03144    (-----*-----)
IBM           5   0.13230  0.01922                 (-----*-----)
MICROSOFT     5   0.28966  0.03028                            (-----*-----)
NOKIA         5   0.04728  0.06700         (-----*-----)
APPLE         5   0.18814  0.04097                   (-----*-----)
INTEL         5   0.18992  0.06033                   (-----*-----)
J&J           5   0.18793  0.02697                   (-----*-----)
KIMB CLARK    5   0.09407  0.00978             (-----*-----)
MOTOROLA      5   0.01592  0.10674    (-----*-----)
RIM           5   0.22851  0.03723                       (-----*-----)
VONAGE        5  -0.01357  0.29182 (-----*-----)
SIERRA        5  -0.00356  0.09245   (-----*-----)
HP            5   0.06640  0.00619        (------*-----)
COLGATE       5   0.13785  0.01041                (-----*------)
QUALCOMM      5   0.27770  0.07879                           (-----*-----)
ARRIS         5   0.02316  0.08529        (-----*-----)
DOLBY         5   0.31499  0.01578                              (-----*-----)
                                    -------+---------+---------+---------+--
                                        0.00      0.12      0.24      0.36
Pooled StDev = 0.08199
```

Figure 65. MNC annual ROS performance—One-way ANOVA.

Figures 66 and 67 show return on sales performance with trend lines for MNCs,

both showing Arris, Motorola, and Vonage as outliers. Arris and Motorola were impacted

by the 2008 economic crisis, not making significant business decisions until 2001 (see Appendix G), including Arris's acquisition of Big Band Networks and Motorola's split into a Mobility and Solutions divisions. Therefore, it can be concluded that MNC performance trend lines are consistent and behave similarly; this finding is not consistent with the observation of the means, mainly due to the impact of the outliers.
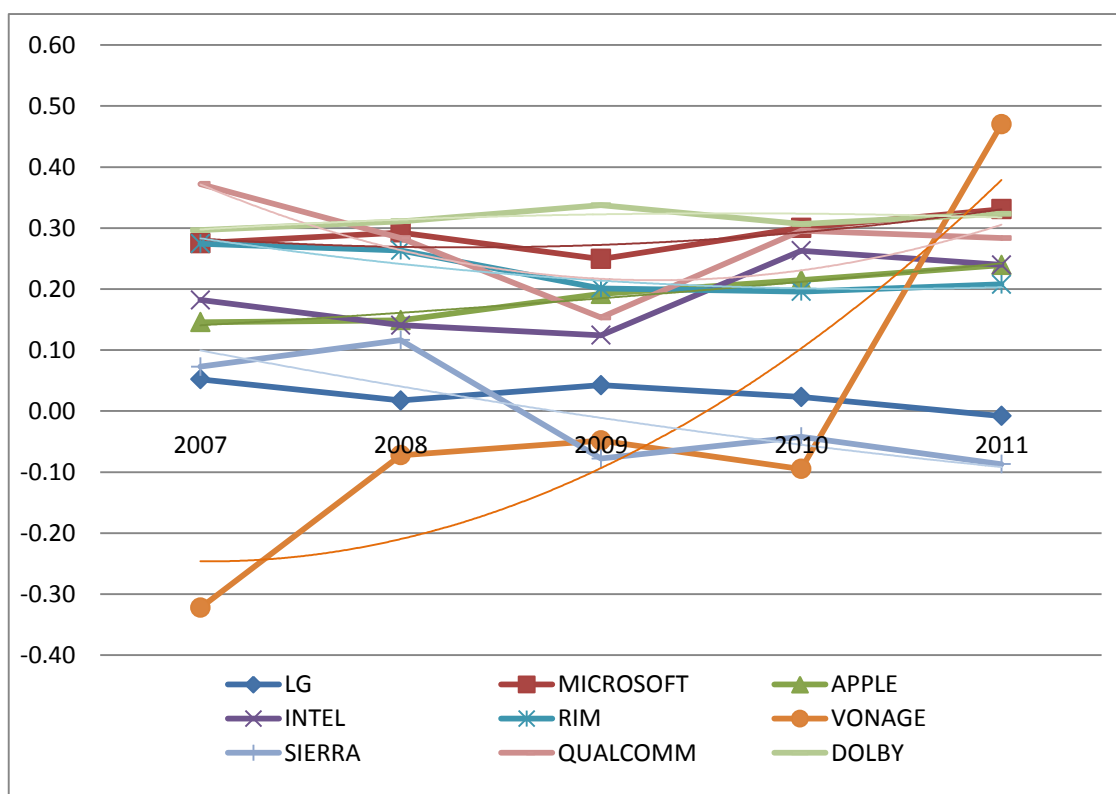
Figure 66. MNC annual ROS performance—Performance with trend lines 1 of 2.
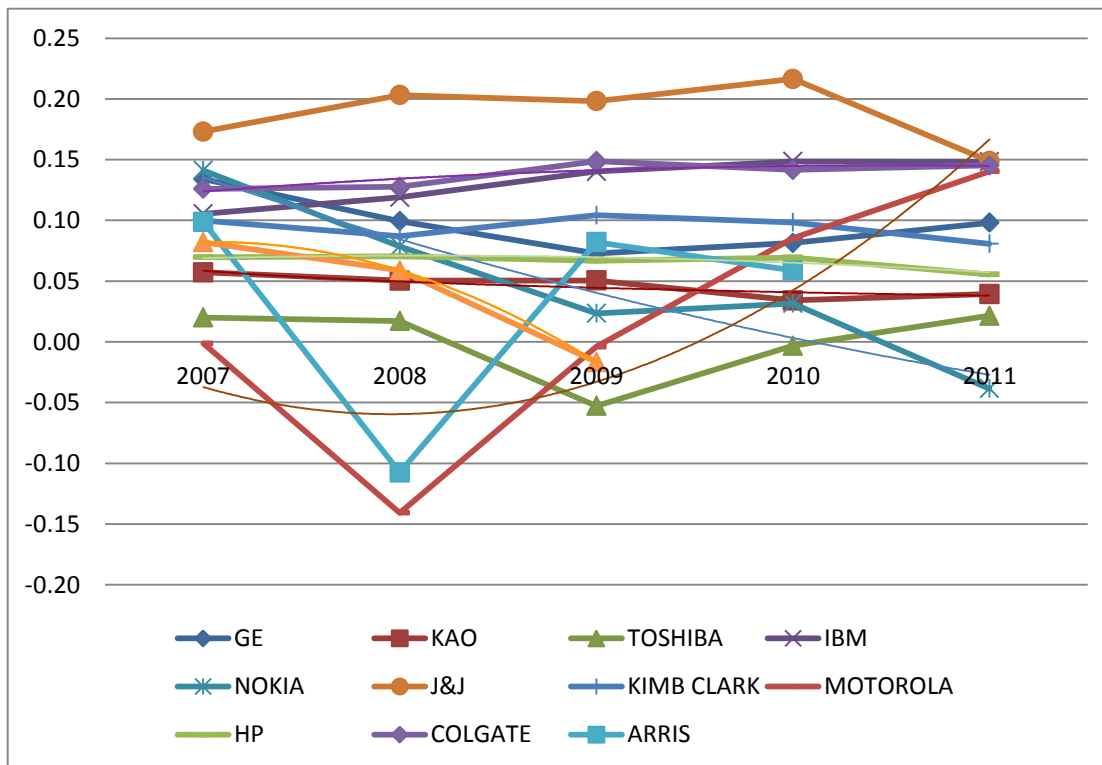
Figure 67. MNC annual ROS performance—Performance with trend lines 2 of 2.

Figure 68 shows the probability plot for MNC annual return on sales performance, where only two P values are < 0.05 with 95% CI; therefore, it can be concluded that the data sample is normal, and thus Bartlett's test for equal variances was used to analyze the sample's standard deviations.
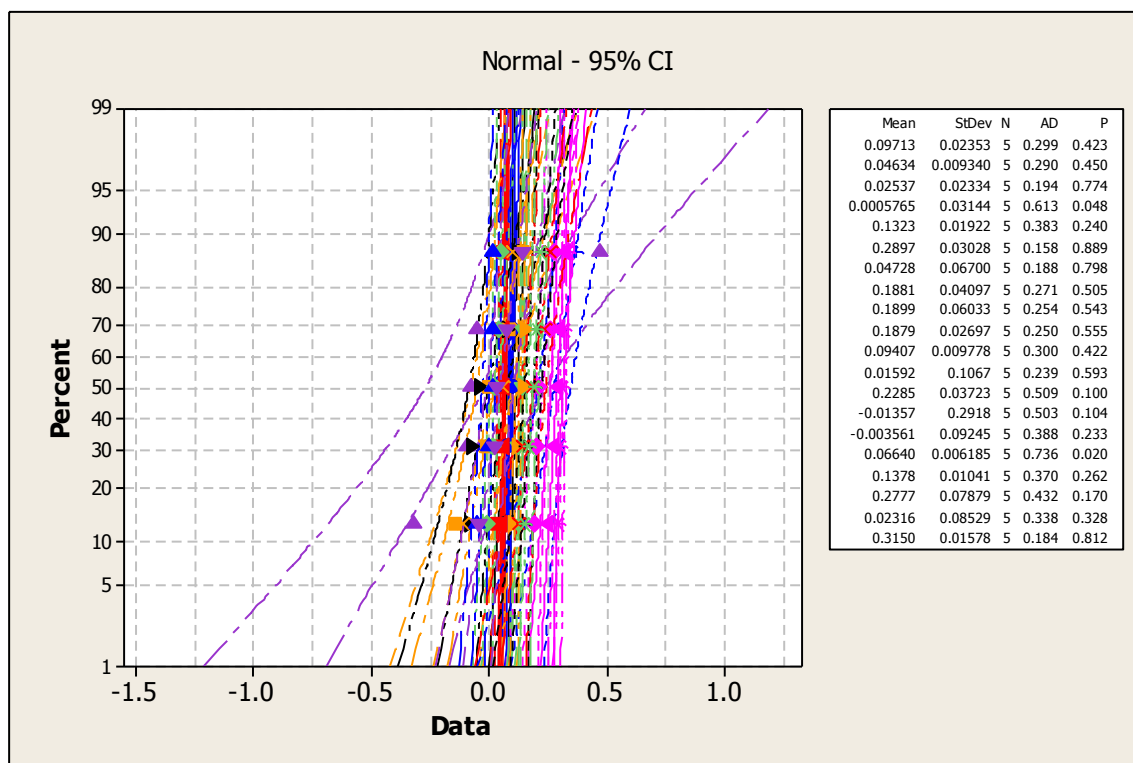
Figure 68. MNC annual ROS performance—Probability plot (data consistency analysis).

Figure 69 shows the box plot comparison for MNC annual return on sales performance; the data dispersion is low, with Vonage and HP as outliers with the lowest and highest dispersions respectively. Figure 70 shows the test for equal variances for MNC return on sales performance with a P value of 0 using Bartlett's test, which is < 0.05 with 95% CI; therefore, the standard deviations are different, and the graphic observation of the spread is consistent with the box plot comparison. Therefore, it can be concluded that there are statistical differences in standard deviations and variances among MNCs; this means that the individual data points are significantly spread out from the mean and from each other, even though from a descriptive statistics point of view the data points show a low level of dispersion.
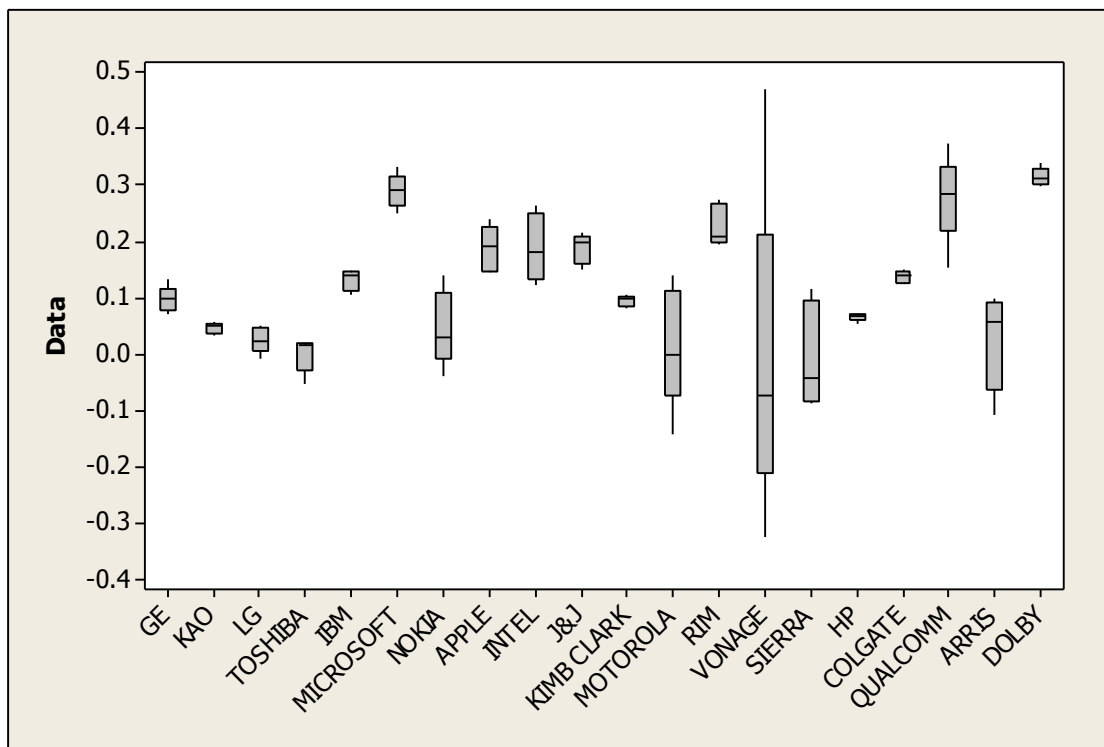
Figure 69. MNC annual ROS performance—Box plot comparison.
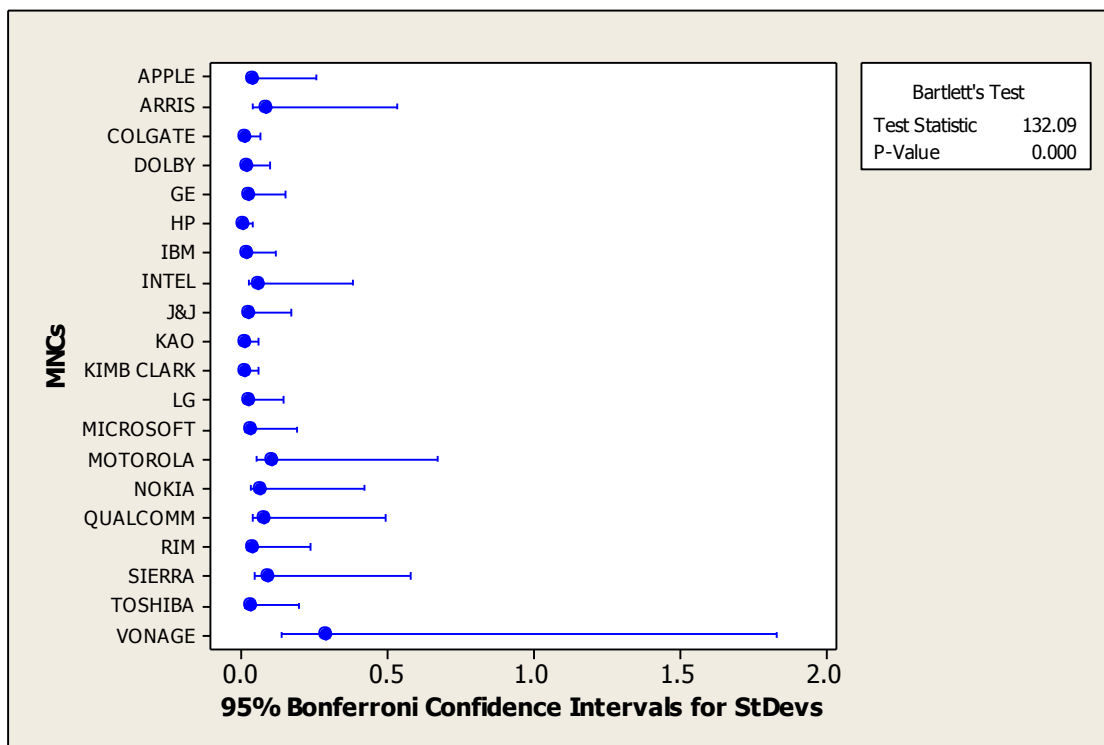
Figure 70. MNC annual ROS performance—Test for equal variances.

In summary, Table 31 presents the results of the statistical analyses for MNC annual return on sales performance.

Table 31

Summary of Statistical Analyses for MNC Annual Return on Sales Performance

		MNC sample
		H4: ROS performance
One-way ANOVA		
	P value	0
	P value < 0.05 (Y/N)	Y
	Mean (Different/Similar)	Different
	Outliers	Sierra, Vonage, Microsoft, Dolby
Performance trend lines (Different/Similar)		Similar
	Outliers	Vonage, Arris, Motorola
Probability plot (Normal/nonparametric data sample)		Normal
Box plot comparison & Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)		
	P value (Bartlett or Levene's test)	0 (Bartlett)
	P value < 0.05 (Y/N)	Y
	StDev (Different/Similar)	Different
	Dispersion (High/Low)	Low
	Outliers	Vonage, HP

Descriptive analysis of aggregated TNC and aggregated MNC ROS performance. This section presents the results of the hypothesis testing of aggregated TNC and aggregated MNC annual return on sales performance. Figure 71 shows the probability plot for aggregated TNC and aggregated MNC annual return on sales

performance, where the P value for TNCs is 0.320, and the P value for MNCs is 0.252;

both > 0.05 with 95% CI. Therefore, it can be concluded that when all TNC and all MNC

annual revenue performance are put together as one group, the data sample is normal, and

thus Bartlett's test for equal variances was used to analyze the sample's standard

deviations, as well as a binary logistic regression and a one-way ANOVA test for

hypothesis testing.
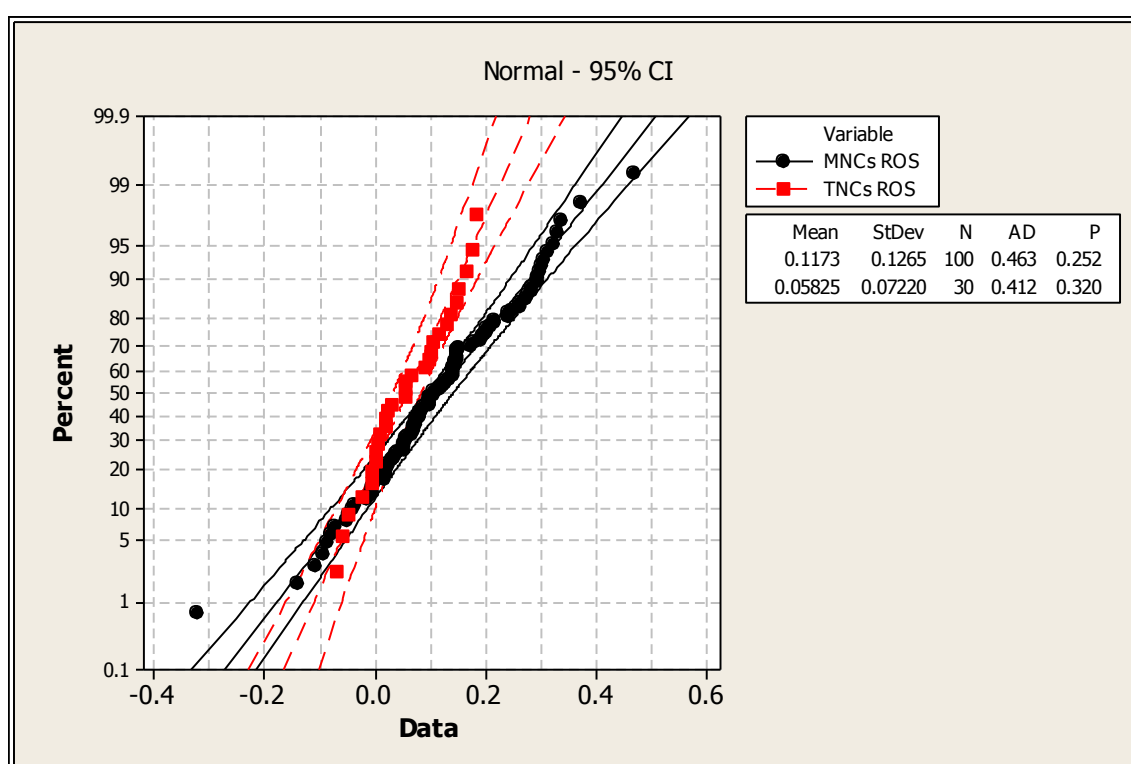
Figure 71. Aggregated TNC and aggregated MNC annual ROS performance—
Probability plot.

Figure 72 shows the test for equal variances for aggregated TNC and aggregated

MNC annual return on sales performance with a P value of 0.001 using Bartlett's test for

normal data samples as established in the analysis of the probability plot; this value is

< 0.05 with 95% CI. Therefore, the standard deviations of both aggregated data samples are different; having said that, as already observed when analyzing both TNC and MNC companies separately, both data dispersions are low, and, not considering minimum and maximum outlier values, they are similar when compared to each other.
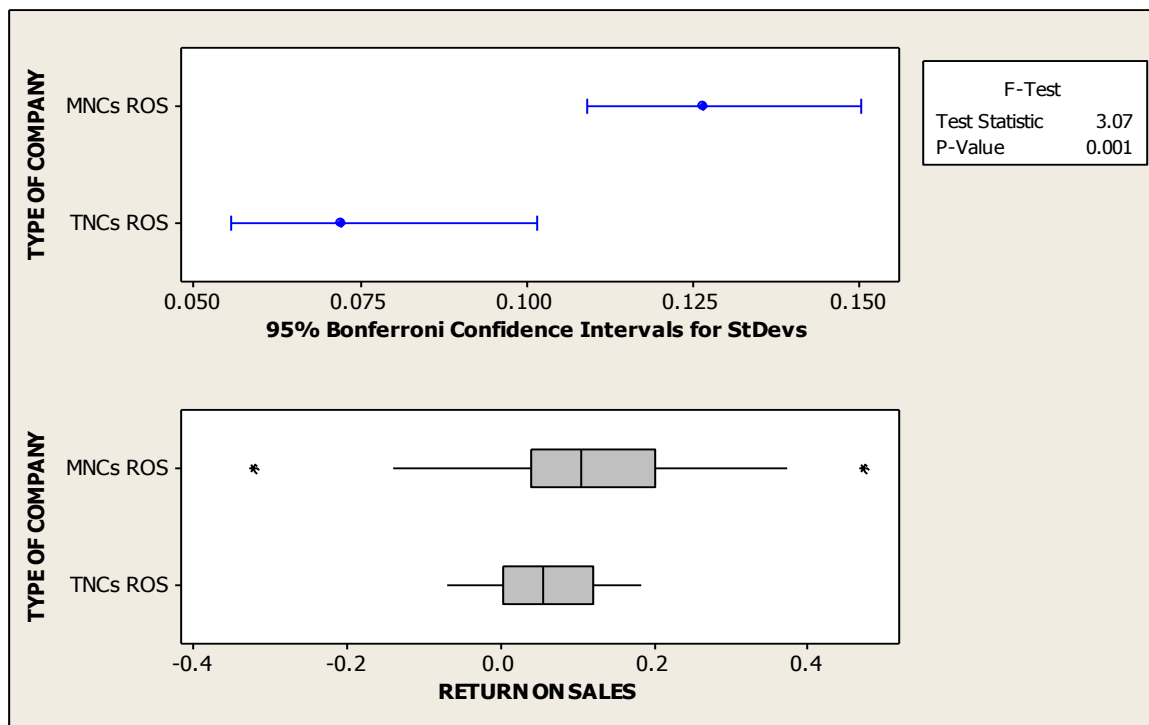
Figure 72. Aggregated TNC and aggregated MNC annual ROS performance—Test for equal variances.

Table 32 shows the binary logistic regression test for type of company (TNC or MNC) versus annual return on sales performance, using aggregated TNC and aggregated MNC annual return on sales performance data; the P value is 0.014, which is < 0.05 with 95% CI.

Table 32

Aggregated TNCs and Aggregated MNC Annual ROS Performance—Binary Logistic Regression, Type of Company (TNC or MNC) Versus Annual ROS Performance

Variable	Value	Count
Type of company	TNC ROS	30 (Event)
	MNC ROS	100
	Total	130

Logistic Regression Table							

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	Upper
Constant	-0.805187	0.257340	-3.13	0.002			
Return on Sales	-4.54815	1.95843	-2.32	0.020	0.01	0.00	0.49

Note. Log-Likelihood = -67.236. Test that all slopes are zero: G = 5.982, DF = 1, P-Value = 0.014.

Figure 73 shows the one-way ANOVA test for type of company (TNC or MNC) versus annual return on sales performance, using aggregated TNC and aggregated MNC annual performance data; the P value is 0.016, which is < 0.05 with 95% CI, and the means are similar between both data samples.

```
Source    DF      SS      MS      F      P
Factor     1   0.0805  0.0805   5.94   0.016
Error    128   1.7352  0.0136
Total    129   1.8157


S = 0.1164   R-Sq = 4.43%   R-Sq(adj) = 3.69%


Individual 95% CIs For Mean Based on Pooled StDev

Level       N    Mean    StDev   -----+---------+---------+---------+----
MNC ROS   100  0.1173   0.1265                          (------*-----)
TNC ROS    30  0.0583   0.0722   (-----------*-----------)
                                 -----+---------+---------+---------+----
                                   0.035     0.070     0.105     0.140
```

Figure 73. Aggregated TNC and aggregated MNC annual ROS performance—One-way ANOVA, type of company (TNC or MNC) versus annual ROS performance.

Hypothesis 4

This hypothesis tested whether there was a relationship between MNC 5-year

return on sales performance and the successful application of the TNC model. The null

and alternate hypotheses were stated as follows:

$H4_0$:   MNC 5-year ROS performance (2007–2011) is negatively or not

related to having successfully applied the TNC model as per

Bartlett and Ghoshal (1989).

$H4_a$:   MNC 5-year ROS performance (2007–2011) is positively related

to having successfully applied the TNC model as per Bartlett and

Ghoshal (1989).

Both hypothesis tests for normal data samples were applied at a significance level

of 0.05, or 95% CI: the binary logistic regression with P = 0.014 and the one-way

ANOVA test with P = 0.016. Both tests lead to the same conclusion to reject the null

Hypothesis $H4_0$, and the alternate Hypothesis $H4_a$ should therefore be discussed. This

indicates, using the results of the binary logistic regression and the one-way ANOVA test

for normal data samples, that the two populations' means are not equal and that there are

grounds to believe there is a relationship between having successfully applied the TNC

model and return on sales performance.

Nevertheless, there is insufficient evidence to accept the claim from the alternate

Hypothesis $H4_a$ that there is a positive relationship between MNC return on sales

performance and having successfully applied the TNC model. When comparing

aggregated MNCs to aggregated TNCs, the former shows a higher mean value (see

Figure 72), driven by companies such as Microsoft, Dolby, Apple, and RIM, all in the

technology industry; this points the discussion toward return on sales performance rather than toward industry differences.

In conclusion, the differences between TNC and MNC return on sales performance are most likely driven by the differences between MNC industries; therefore, a positive relationship between having successfully applied the TNC model and return on sales performance cannot be established. The discussion on industry-specific market factors as a driver of differences in performance among MNCs is further discussed in Chapter V.

In summary, Table 33 shows the results of the tests performed for aggregated TNC and aggregated MNC annual return on sales performance.

Table 33

Summary of Statistical Analyses for Aggregated TNC and Aggregated MNC Annual Return on Sales Performance

	Aggregated TNC and aggregated MNC
	H4: ROS performance (annual)
Probability plot (Normal/nonparametric data sample)	Normal
Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)	
P value (Bartlett or Levene's test)	0.001 (Bartlett)
P value < 0.05 (Y/N)	Y
StDev (Different/Similar)	Different
Binary Logistic Regression	
P value	0.014
P value < 0.05 (Y/N)	Y
H_0 Rejected/Accepted	Rejected
One-way ANOVA	
P value	0.016
P value < 0.05 (Y/N)	Y
H_0 Rejected/Accepted	Rejected
Mean (Different/Similar)	Different
Nonparametric testing Mann-Whitney (MW) or Kruskal-Wallis (KW)	
P value (MW/KW)	n/a
P value < 0.05 (Y/N)	
H_0 Rejected/Accepted	
Median (Different/Similar)	

It can be concluded that Hypothesis $H4_0$ is rejected, but the alternate Hypothesis $H4_a$ cannot be accepted either; therefore, there is no statistical proof that having successfully applied the TNC model has a positive impact on a company's return on sales performance.

EBITD Performance Analysis

Descriptive analysis of individual TNC EBITD performance. This section presents the results of the quantitative analysis for TNC annual EBITD performance, discussing data as per Hypothesis 5:

$H5_0$: MNC 5-year EBITD performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

Figure 74 shows the results of the one-way ANOVA test for TNC EBITD annual performance, with a P value of 0.134, which is > 0.05 with 95% CI, and with Panasonic's low mean as the most visible outlier. Therefore, it can be assumed that there are no significant differences among TNC means for EBITD performance.

```
Source  DF     SS    MS     F      P
Factor   5  27.65  5.53  1.89  0.134
Error   24  70.23  2.93
Total   29  97.88


S = 1.711   R-Sq = 28.25%   R-Sq(adj) = 13.31%



Individual 95% CIs For Mean Based on Pooled StDev


Level       N    Mean   StDev   --+---------+---------+---------+-------
P&G         5   0.040   0.067                  (---------*---------)
UNILEVER    5   0.081   0.260                  (---------*--------)
PANASONIC   5  -1.946   2.995   (---------*---------)
PHILIPS     5   1.057   2.007                      (---------*--------)
NEC         5  -1.037   1.883           (---------*--------)
ERICSSON    5   0.124   0.968                  (---------*---------)
                                --+---------+---------+---------+-------
                                -3.2      -1.6      -0.0       1.6
Pooled StDev = 1.711
```
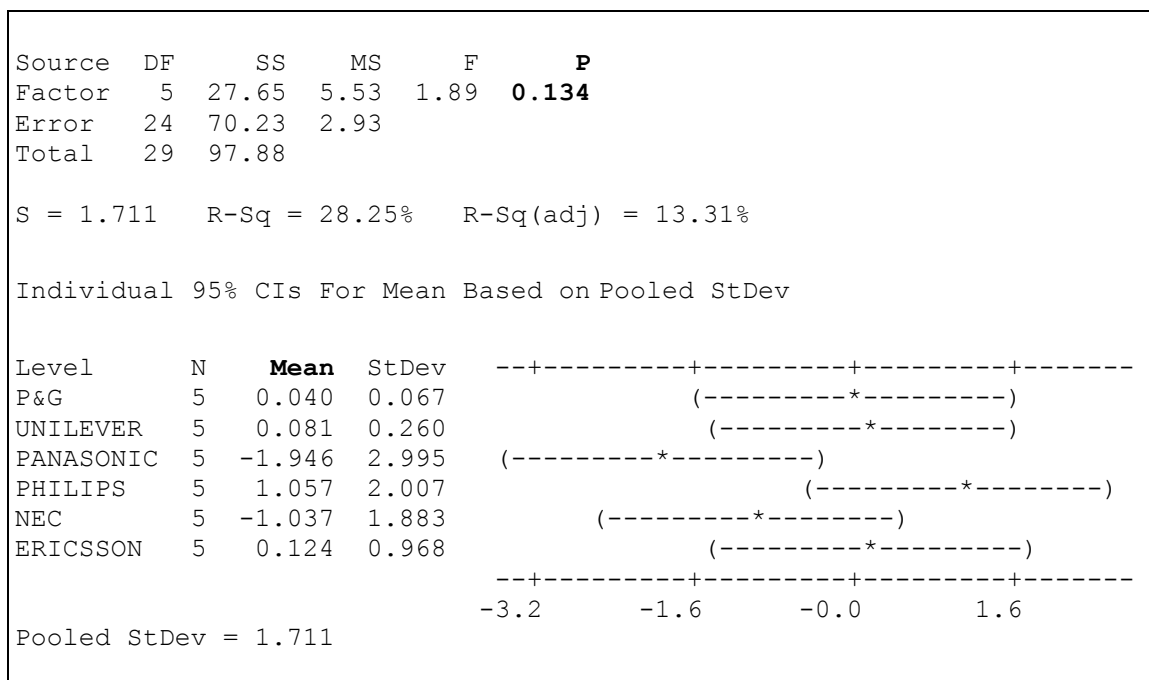
Figure 74. TNC annual EBITD performance—One-way ANOVA.

Figure 75 shows the TNC annual EBITD performance with trend lines;

performance trend lines are different with Panasonic as the major outlier, mainly driven

by a sharp drop in 2011, the same year the company cut 17,000 jobs in a plan to

drastically reduce costs (see Appendix F).
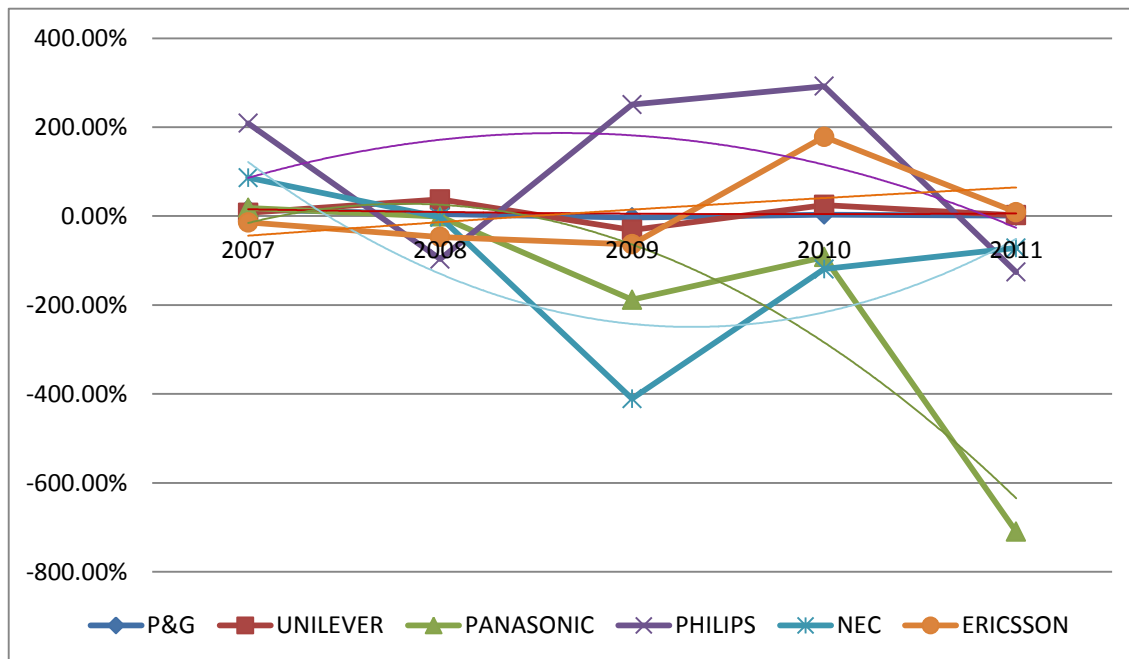
Figure 75. TNC annual EBITD performance—Performance with trend lines.

Figure 76 shows the probability plot as a data consistency analysis for TNC

EBITD performance, where all P values are > 0.05 with 95% CI; therefore, it can be

concluded that the data sample is normal, and thus Bartlett's test for equal variances was

used to analyze the sample's standard deviations.
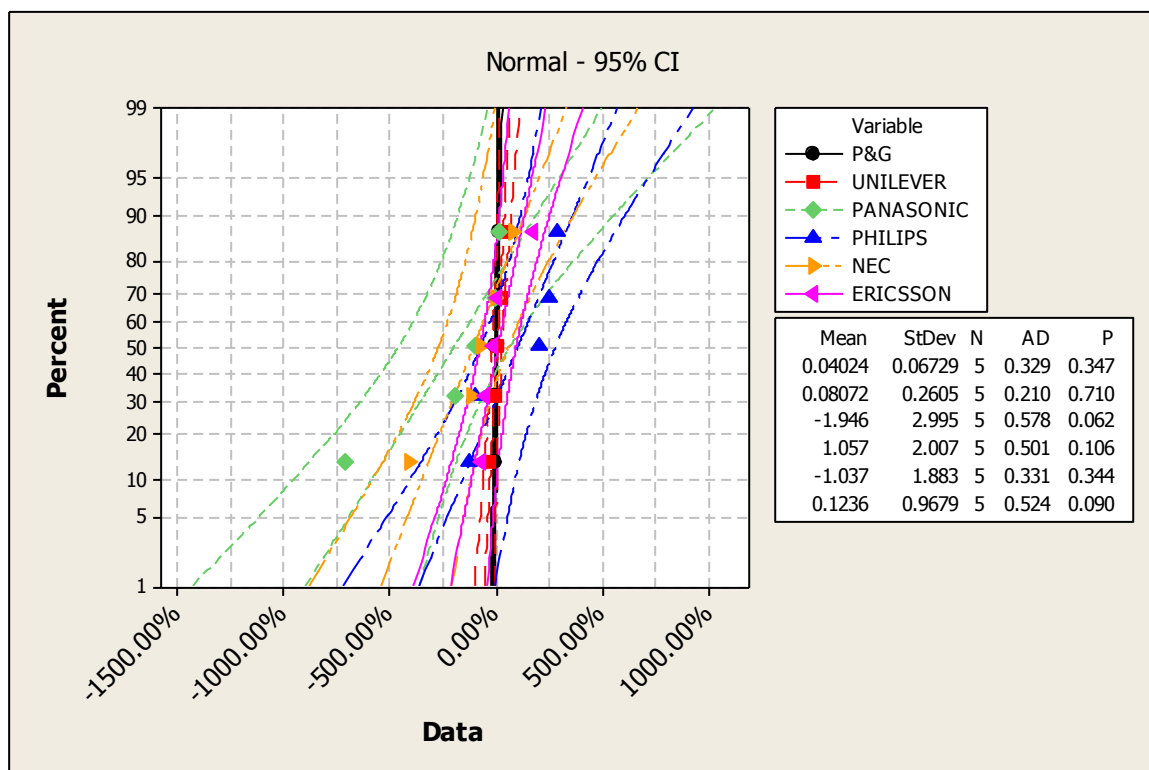
Figure 76. TNC annual EBITD performance—Probability plot (data consistency analysis).

Figure 77 shows the box plot comparison for TNC annual EBITD performance; data dispersion is high, with Procter & Gamble and Panasonic as major outliers, with the lowest and highest dispersions respectively. Figure 78 shows the test for equal variances for TNC annual EBITD performance with a P value of 0 using Bartlett's test, which is < 0.05 with 95% CI; therefore, the standard deviations are different, with Procter & Gamble and Unilever having significantly less variation. Therefore, it can be concluded that there are significant statistical differences among TNC annual EBITD performance.
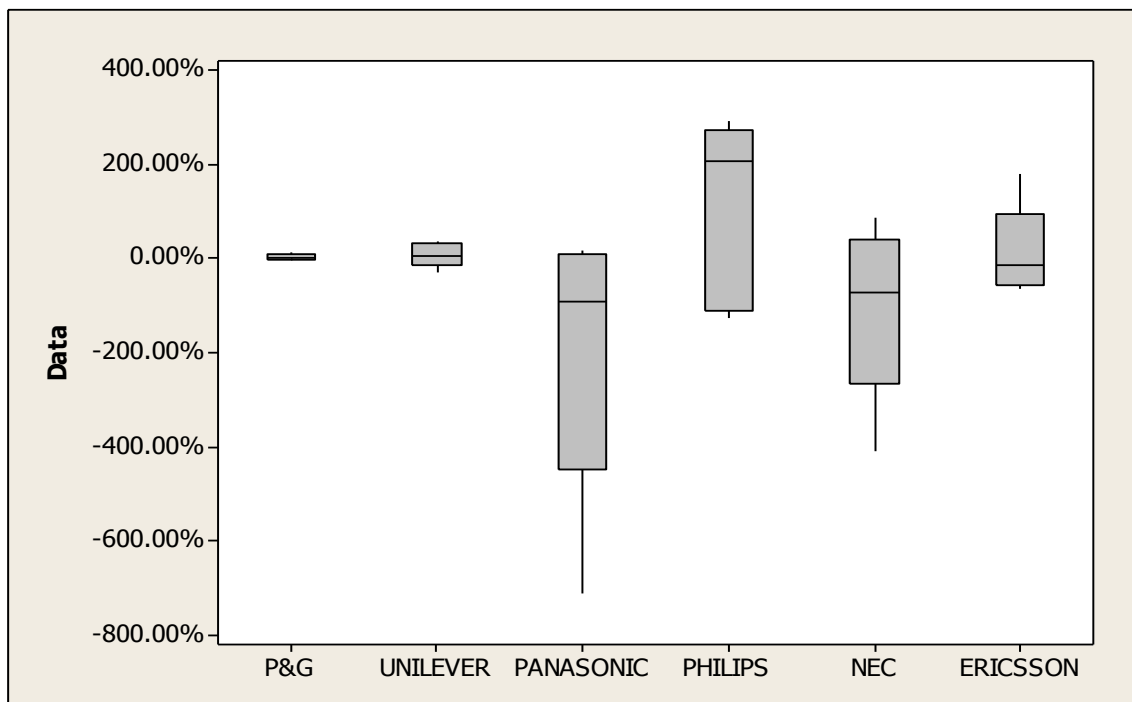
Figure 77. TNC EBITD annual performance—Box plot comparison.
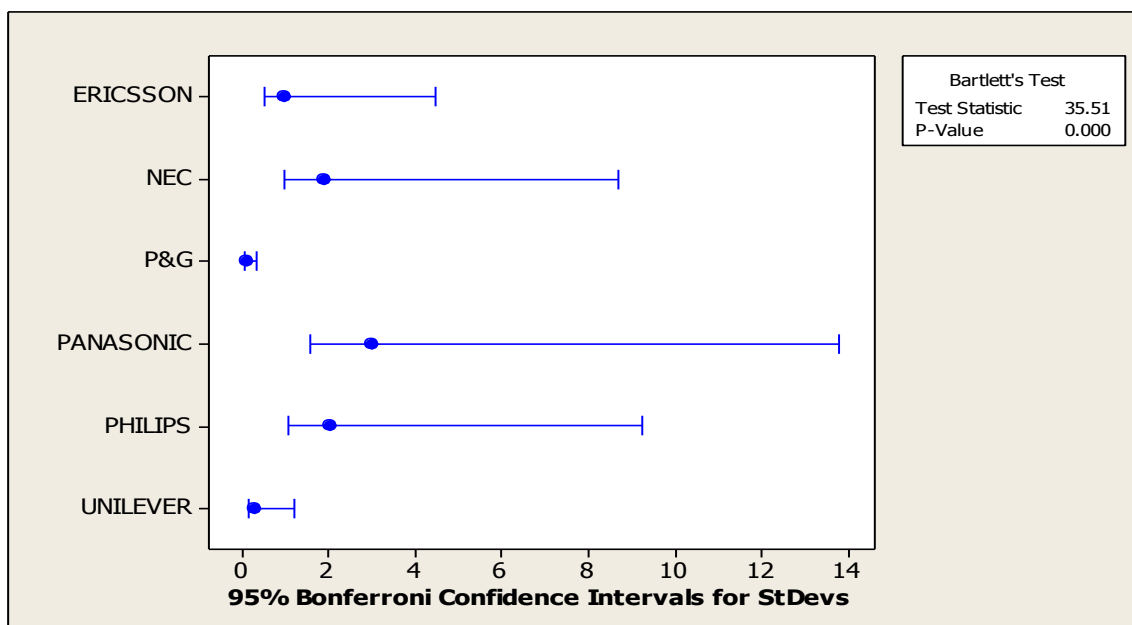
Figure 78. TNC EBITD annual performance—Test for equal variances.

In summary, Table 34 presents the results of the statistical analyses for TNC annual EBITD performance.

Table 34

Summary of Statistical Analyses for TNC Annual EBITD Performance

	TNC sample
	H5: EBITD performance (annual)
One-way ANOVA	
P value	0.134
P value < 0.05 (Y/N)	N
Mean (Different/Similar)	Similar
Outliers	Panasonic
Performance trend lines (Different/Similar)	Different
Outliers	Panasonic
Probability plot (Normal/nonparametric data sample)	Normal
Box plot comparison & Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)	
P value (Bartlett or Levene's test)	0 (Bartlett)
P value < 0.05 (Y/N)	Y
StDev (Different/Similar)	Different
Dispersion (High/Low)	High
Outliers	PG, Panasonic

Descriptive analysis of individual MNC EBITD performance. This section presents the results of the quantitative analysis for MNC annual EBITD performance. Figure 79 shows the results of the one-way ANOVA test for MNC annual EBITD performance, with a P value of 0.938, which is > 0.05 with 95% CI, and with no major

outliers; therefore, it can be concluded that there are no significant statistical differences

among the means for EBITD performance when comparing MNCs among themselves.

```
Source  DF      SS    MS     F       P
Factor  19   20.67  1.09  0.53   0.938
Error   80  162.84  2.04
Total   99  183.52


S = 1.427   R-Sq = 11.27%   R-Sq(adj) = 0.00%

Individual 95% CIs For Mean Based on Pooled StDev


Level          N    Mean  StDev  ---------+---------+---------+---------+
GE             5   0.053  0.426            (----------*----------)
KAO            5   0.041  0.170            (---------*----------)
LG             5   1.164  3.192                   (----------*---------)
TOSHIBA        5   0.467  2.606              (----------*---------)
IBM            5   0.096  0.034            (----------*---------)
MICROSOFT      5   0.100  0.162            (----------*---------)
NOKIA          5   0.659  3.013                 (---------*----------)
APPLE          5   0.657  0.195                 (---------*----------)
INTEL          5   0.360  0.841               (----------*----------)
J&J            5  -0.016  0.204           (----------*---------)
KIMB CLARK     5   0.043  0.153            (---------*----------)
MOTOROLA       5   0.719  2.887                  (----------*----------)
RIM            5   0.605  0.359                 (----------*----------)
VONAGE         5  -0.475  1.085        (----------*----------)
SIERRA         5   0.460  1.610               (----------*---------)
HP             5   0.083  0.215            (----------*---------)
COLGATE        5   0.140  0.109             (---------*----------)
QUALCOMM       5   0.194  0.448             (----------*---------)
ARRIS          5  -1.060  1.037   (---------*----------)
DOLBY          5   0.256  0.181             (---------*----------)
                                  ---------+---------+---------+---------+
                                        -1.2       0.0       1.2       2.4
Pooled StDev = 1.427
```

Figure 79. MNC Annual EBITD Performance—One-Way ANOVA.

Figures 80 and 81 show annual EBITD performance with trend lines for MNCs;

these are different, with LG, Motorola, Toshiba, and Nokia, all in the technology sector,

showing the sharpest 1-year over-performance. Therefore, it can be concluded that MNC

performance trend lines, which show year-over-year annual EBITD performance, are different, while the means for the same MNCs are similar; this is mainly driven by the outliers in the performance trend lines analysis.
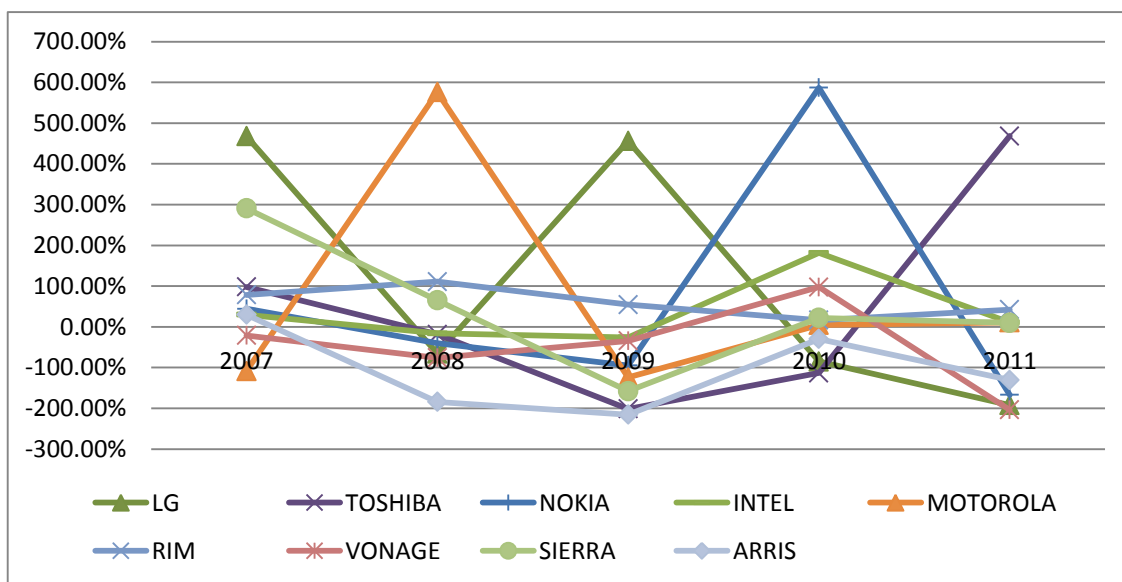
Figure 80. MNC annual EBITD performance—Performance with trend lines 1 of 2.
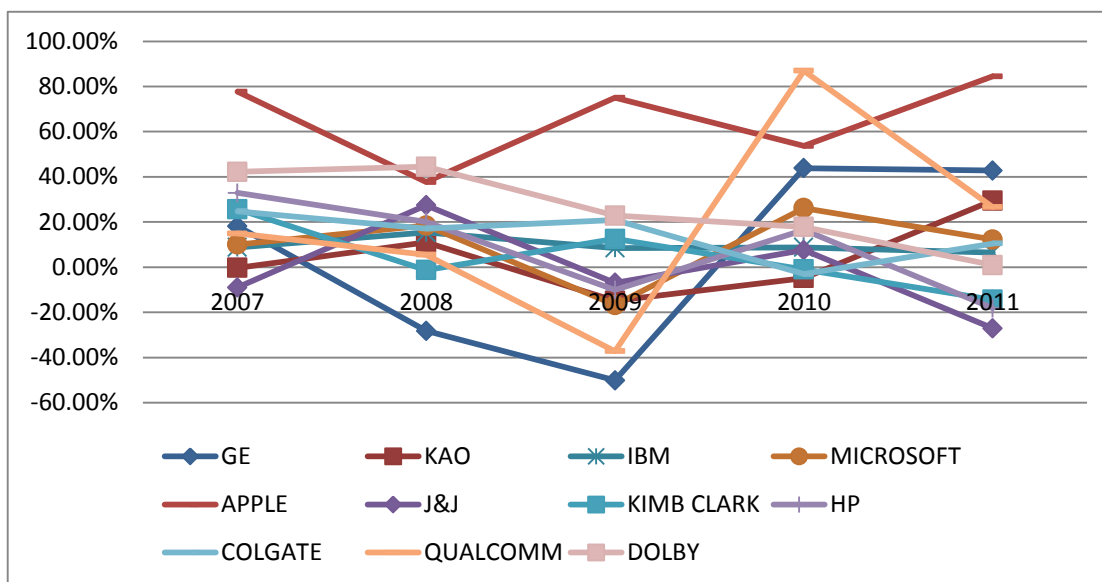
Figure 81. MNC annual EBITD performance—Performance with trend lines 2 of 2.

Figure 82 shows the probability plot for MNC annual EBITD performance, where only two P values are < 0.05 with 95% CI; therefore, it can be concluded that the data sample is normal, and thus Bartlett's test for equal variances was used to analyze the sample's standard deviations.

Mean	StDev	N	AD	P
0.05306	0.4256	5	0.351	0.299
0.04095	0.1697	5	0.205	0.730
1.164	3.192	5	0.550	0.075
0.4667	2.606	5	0.314	0.385
0.09581	0.03371	5	0.649	0.037
0.1004	0.1624	5	0.380	0.245
0.6593	3.013	5	0.583	0.060
0.6571	0.1946	5	0.330	0.345
0.3597	0.8414	5	0.585	0.058
-0.01584	0.2036	5	0.200	0.751
0.04305	0.1526	5	0.228	0.636
0.7195	2.887	5	0.706	0.025
0.6050	0.3586	5	0.154	0.898
-0.4753	1.085	5	0.236	0.605
0.4605	1.610	5	0.314	0.384
0.08267	0.2152	5	0.293	0.441
0.1405	0.1092	5	0.270	0.507
0.1935	0.4482	5	0.259	0.531
-1.060	1.037	5	0.240	0.590
0.2565	0.1810	5	0.257	0.534
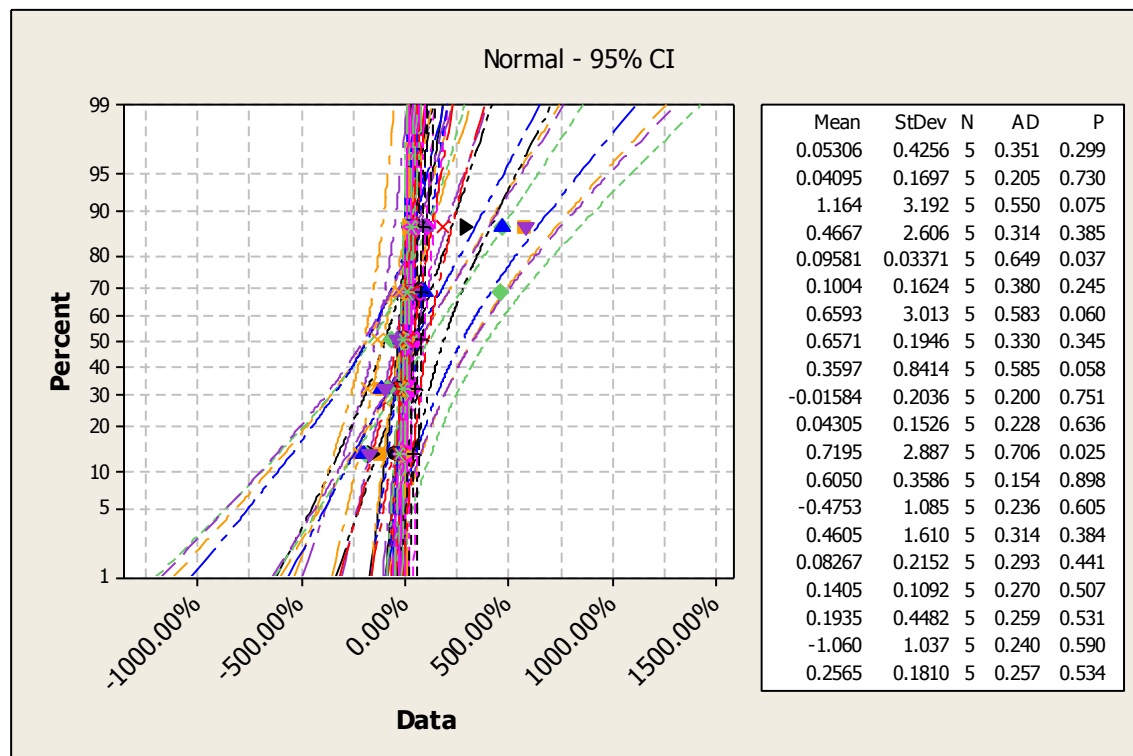
Figure 82. MNC annual EBITD performance—Probability plot (Data consistency analysis).

Figure 83 shows the box plot comparison for MNC annual EBITD performance; the data dispersion is high, showing two clearly differentiated groups. LG, Toshiba, Nokia, and Motorola show the highest dispersion, while IBM, Colgate, and Kimberly Clark have the lowest dispersion. Figure 84 shows the test for equal variances for MNC EBITD performance with a P value of 0 using Bartlett's test, which is < 0.05 with 95%

CI; therefore, the standard deviations are different, and the graphic observation of the spread is consistent with the box plot comparison. Therefore, it can be concluded that there are statistical differences in standard deviations and variances among MNCs.
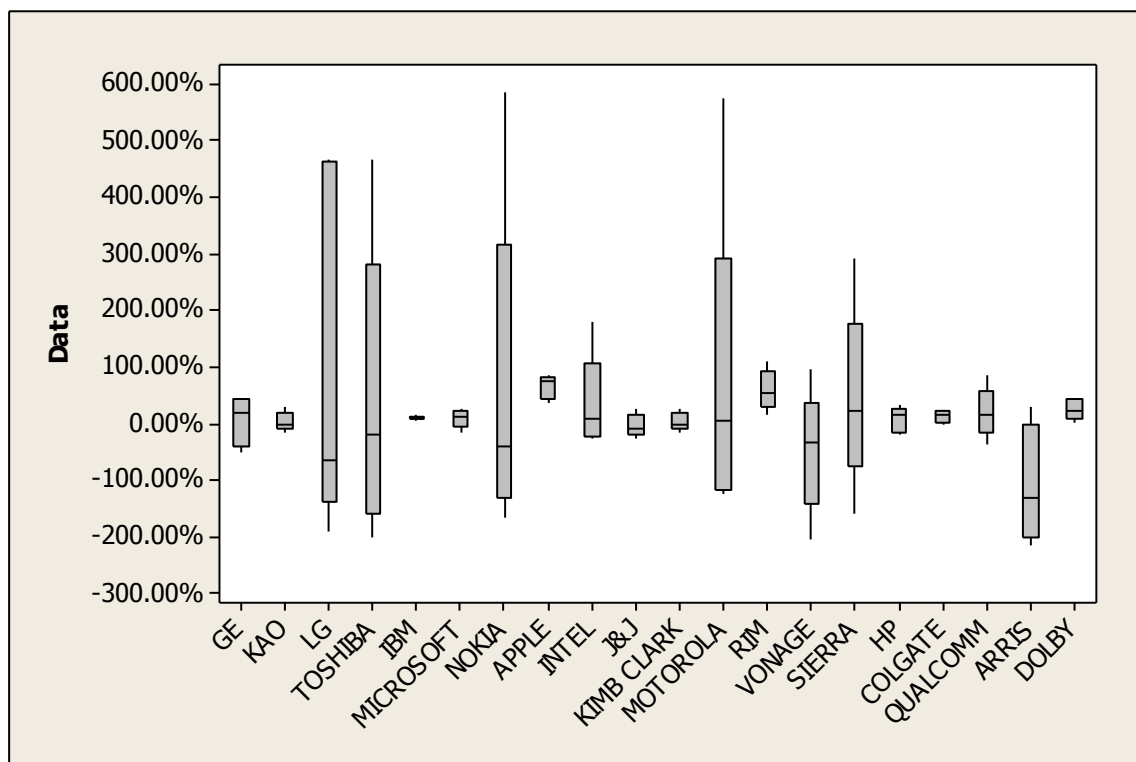
Figure 83. MNC annual EBITD performance—Box plot comparison.
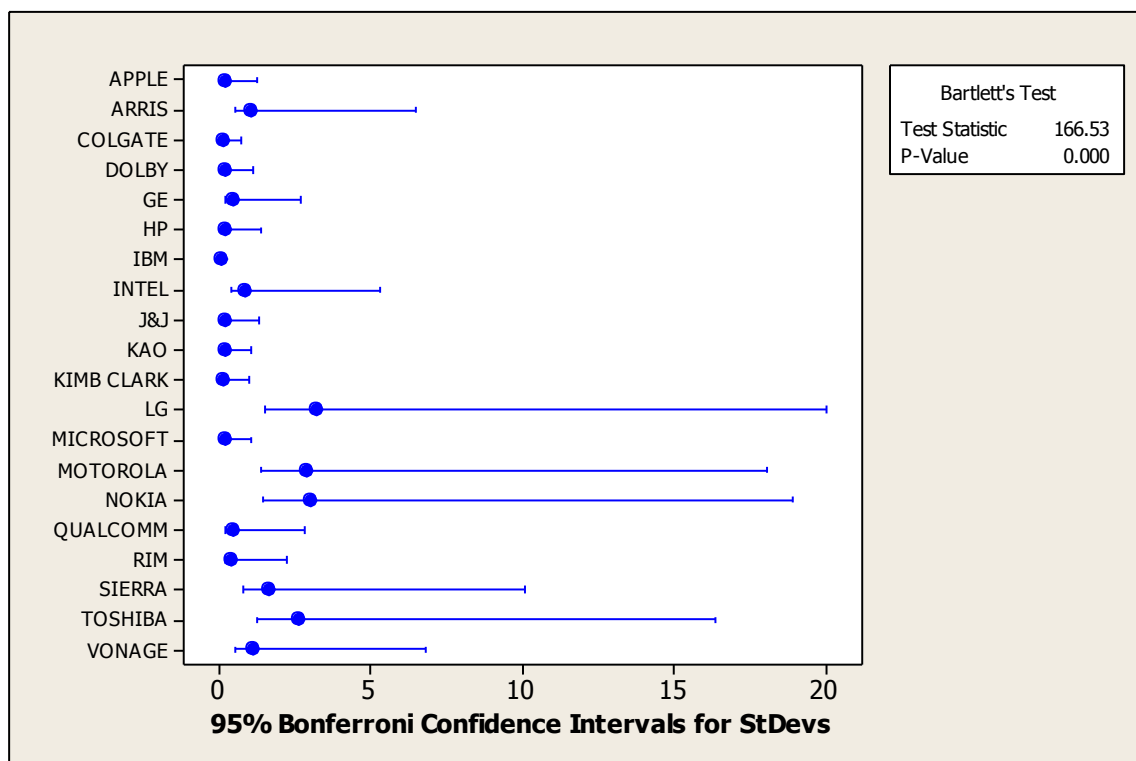
Figure 84. MNC annual EBITD performance—Test for equal variances.

In summary, Table 35 presents the results of the statistical analyses for MNC annual EBITD performance.

Table 35

Summary of Statistical Analyses for MNC Annual EBITD Performance

	MNC sample
	H5: EBITD performance (annual)
One-way ANOVA	
P value	0.938
P value < 0.05 (Y/N)	N
Mean (Different/Similar)	Similar
Outliers	
Performance trend lines (Different/Similar)	Different
Outliers	LG, Motorola, Toshiba, Nokia, J&J, Qualcom
Probability plot (Normal/nonparametric data sample)	Normal
Box plot comparison & Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)	
P value (Bartlett or Levene's test)	0 (Bartlett)
P value < 0.05 (Y/N)	Y
StDev (Different/Similar)	Different
Dispersion (High/Low)	High
Outliers	

Descriptive analysis of aggregated TNC and aggregated MNC EBITD performance. This section presents the results of the hypothesis testing of aggregated TNC and aggregated MNC annual EBITD performance. Figure 85 shows the probability plot for aggregated TNC and aggregated MNC annual EBITD performance, where both P values for TNCs and MNCs are close to 0, therefore < 0.05 with 95% CI. It can be concluded that, when all TNC and all MNC annual EBITD performance data is put

together as one group, the data sample is nonparametric, and Levene's test for equal

variances was used to analyze the sample's standard deviations.
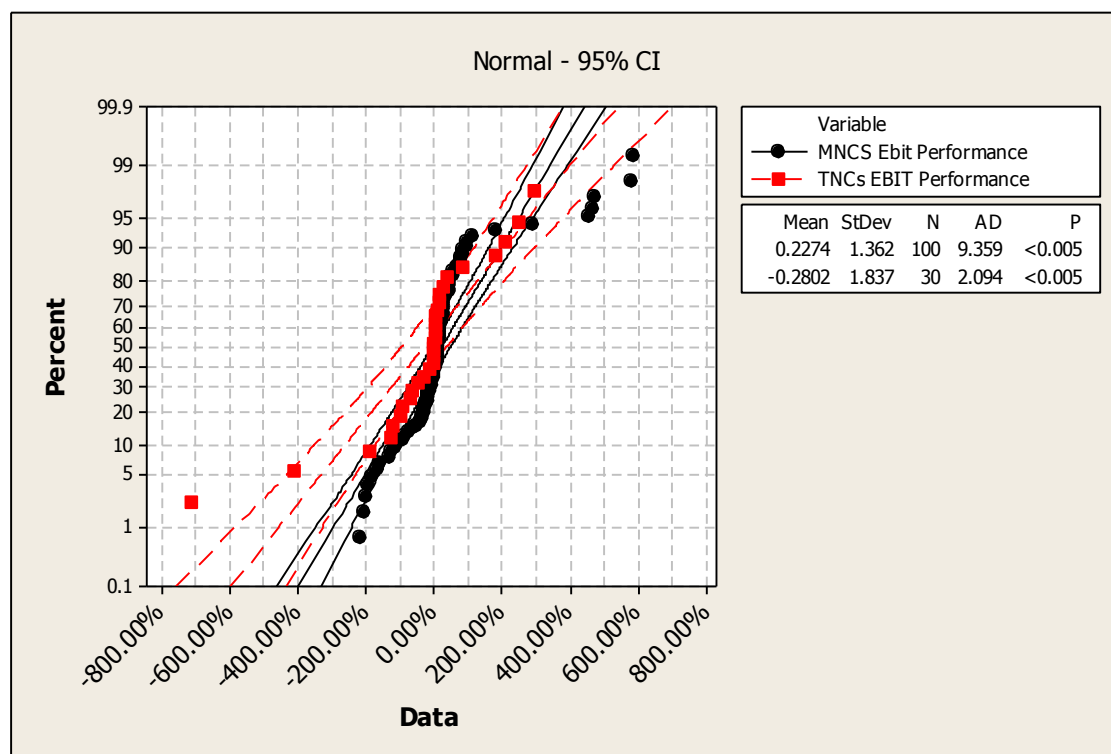
Figure 85. Aggregated TNC and aggregated MNC annual EBITD performance—
Probability plot.

Figure 86 shows the test for equal variances for aggregated TNC and aggregated

MNC annual EBITD performance with a P value of 0.222 using Levine's test for

nonparametric data samples as established in the analysis of the probability plot; this

value is > 0.05 with 95% CI. Therefore, the standard deviations of both aggregated data

samples are similar, and data dispersions are not comparable due to the minimum and

maximum outlier values.
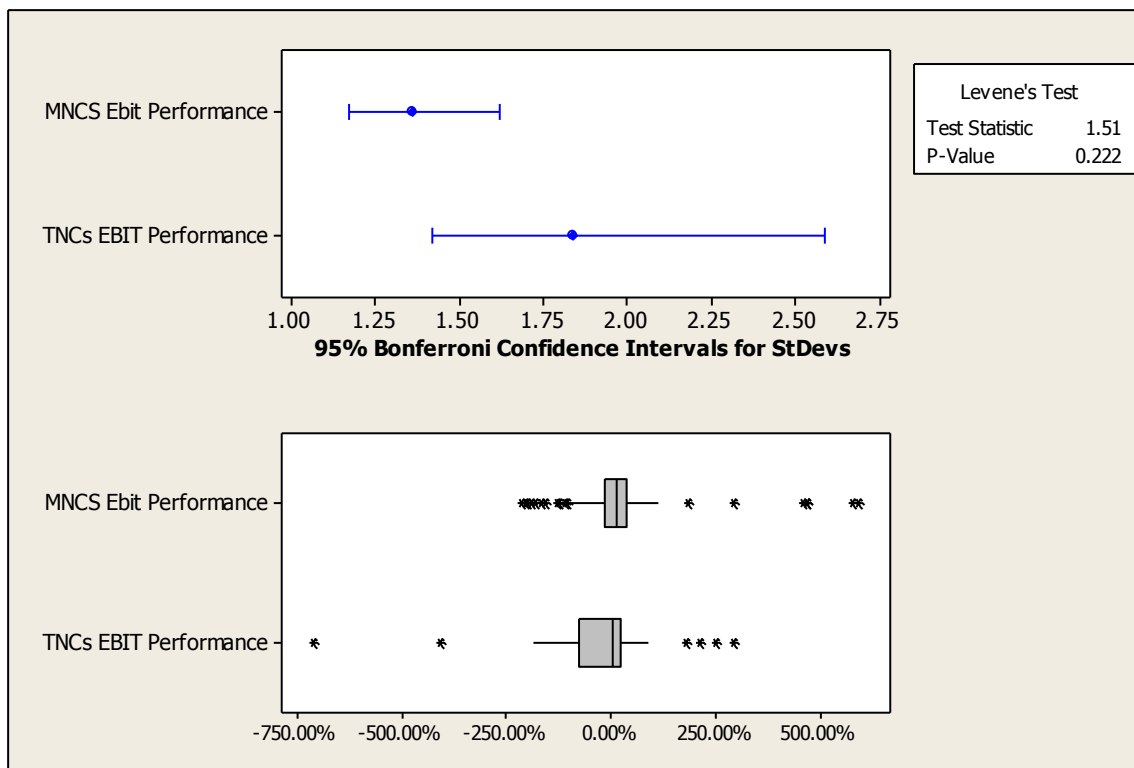
Figure 86. Aggregated TNC and aggregated MNC annual EBITD performance—Test for equal variances.

Table 36 shows the binary logistic regression test for type of company (TNC or MNC) versus annual EBITD performance, using aggregated TNC and aggregated MNC annual EBITD performance data; the P value is 0.092, which is > 0.05 with 95% CI.

Table 36

Aggregated TNC and Aggregated MNC Annual EBITD Performance—Binary Logistic Regression, Type of Company (TNC or MNC) Versus Annual EBITD Performance

	Link Function: Logit						
	Response Information						
Variable	Value			Count			
C5	TNC EBIT Performance			30 (Event)			
	MNC EBIT Performance			100			
	Total			130			
	Logistic Regression Table						
					Odds	95% CI	
Predictor	Coef	SE Coef	Z	P	Ratio	Lower	Upper
Constant	-1.21001	0.211530	-5.72	0.000			
C5	-0.251957	0.158721	-1.59	0.112	0.78	0.57	1.06

Note. Log-Likelihood = -68.811. Test that all slopes are zero: G = 2.831, DF = 1, P-Value = 0.092.

Figure 87 shows the one-way ANOVA test for type of company (TNC or MNC) versus annual EBITD performance using aggregated TNC and aggregated MNC annual performance data; the P value is 0.1071, which is > 0.05 with 95% CI, and the means are similar between both data samples.

```
Source    DF       SS    MS     F      P
C6         1     5.95  5.95  2.70   0.103
Error    128   281.40  2.20
Total    129   287.34


S = 1.483    R-Sq = 2.07%   R-Sq(adj) = 1.30%


Level                      N    Mean   StDev
MNC EBIT Performance  100   0.227   1.362
TNC EBIT Performance   30  -0.280   1.837


Individual 95% CIs For Mean Based on Pooled StDev


Level                      ---+---------+---------+---------+------
MNC EBIT Performance                          (-------*--------)
TNC EBIT Performance   (--------------*--------------)
                           ---+---------+---------+---------+------
                          -0.70     -0.35      0.00      0.35
```
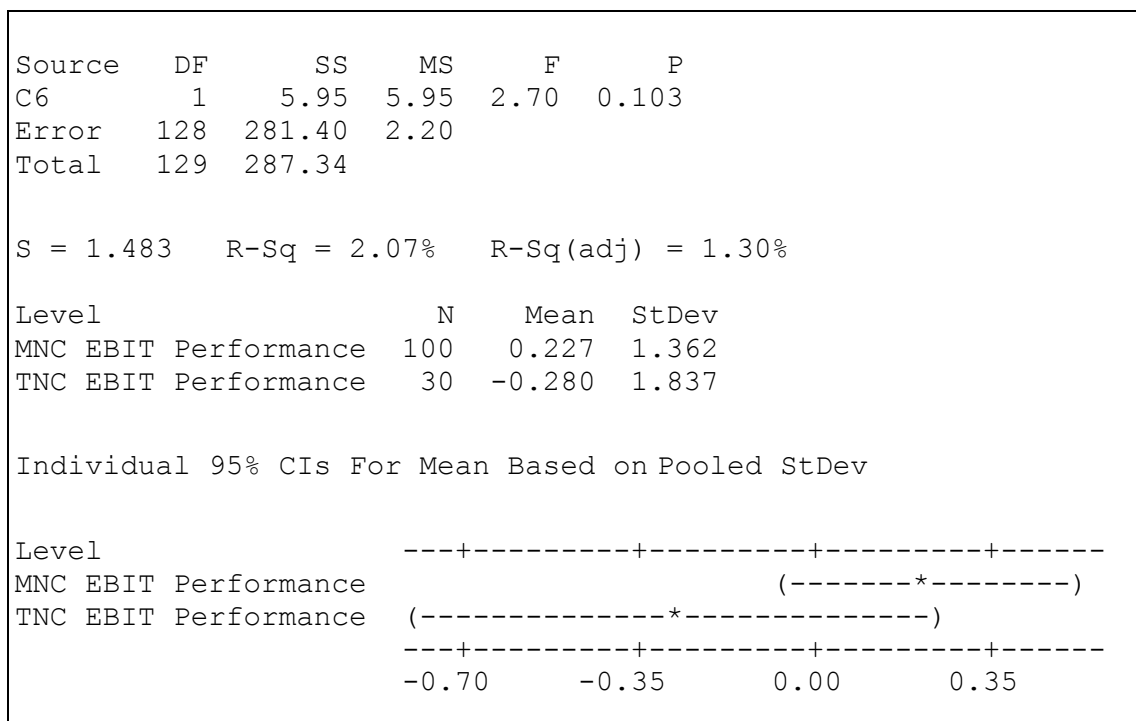
Figure 87. Aggregated TNC and aggregated MNC annual EBITD performance—One-way ANOVA, type of company (TNC or MNC) versus annual EBITD performance.

Table 37 shows the Mann-Whitney test for type of company (TNC or MNC) versus annual EBITD performance, using aggregated TNC and aggregated MNC annual EBITD performance data; the P value is 0.1072, which is > 0.05 with 95% CI, and the medians are similar between both data samples.

Table 37

Aggregated TNC and Aggregated MNC Annual EBITD Performance—Mann-Whitney Test and Confidence Interval, Type of Company (TNC or MNC) Versus Annual EBITD Performance

Level	N	Median
MNC EBIT Performance	100	0.1090
TNC EBIT Performance	30	-0.0004

Note. Point estimate for ETA1-ETA2 is 0.1742. 95.1% CI for ETA1-ETA2 is (-0.0463,0.5028). W = 6842.0. Test of ETA1 = ETA2 vs. ETA1 not = ETA2 is significant at P = 0.1072.

Hypothesis 5

This hypothesis tested whether there was a relationship between MNC 5-year EBITD performance and the successful application of the TNC model. The null and alternate hypotheses were stated as follows:

$H5_0$:   MNC 5-year EBITD performance (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

$H5_a$:   MNC 5-year EBITD performance (2007–2011) is positively related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

All three hypothesis tests were applied at a significance level of 0.05, or 95% CI: the binary logistic regression with P = 0.092, the one-way ANOVA test with P = 0.103, and the Mann-Whitney test for nonparametric data samples with P = 0.1072. All tests led to the same conclusion to accept the null Hypothesis $H5_0$, indicating there is no relationship between MNC EBITD performance and having successfully applied the TNC model.

In summary, Table 38 shows the results of the tests performed for aggregated TNC and aggregated MNC annual EBITD performance.

Table 38

Summary of Statistical Analyses for Aggregated TNC and Aggregated MNC Annual EBITD Performance

	Aggregated TNC and aggregated MNC
	H5: EBITD performance (annual)
Probability plot (Normal/nonparametric data sample)	Nonparametric
Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)	
P value (Bartlett or Levene's test)	0.222 (Levene)
P value < 0.05 (Y/N)	N
StDev (Different/Similar)	Similar
Binary Logistic Regression	
P value	0.092
P value < 0.05 (Y/N)	N
H_0 Rejected/Accepted	Accepted
One-way ANOVA	
P value	0.103
P value < 0.05 (Y/N)	N
H_0 Rejected/Accepted	Accepted
Mean (Different/Similar)	Similar
Nonparametric testing Mann-Whitney (MW) or Kruskal-Wallis (KW)	
P value (MW/KW)	0.1072 (MW)
P value < 0.05 (Y/N)	N
H_0 Rejected/Accepted	Accepted
Median (Different/Similar)	Similar

It can be concluded that Hypothesis $H5_0$ is accepted since there is no statistical relationship between MNC EBITD performance and having successfully applied the TNC model. In other words, there is no statistical proof that having successfully applied the TNC model has a positive impact on a company's EBITD performance.

EBITD/REV Performance Analysis

Descriptive analysis of individual TNC EBITD/REV performance. This section presents the results of the quantitative analysis for TNC annual EBITD/REV performance, discussing data as per Hypothesis 6:

$H6_0$:   MNC 5-year EBITD to REV ratio (EBITD/REV) (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

Figure 88 shows the results of the one-way ANOVA test for TNC EBITD/REV annual performance with a P value of 0.124, which is > 0.05 with 95% CI; therefore, it can be assumed that there are no significant differences among TNC means for EBITD/REV performance.

```
Source  DF     SS    MS     F      P
Factor   5  27.20  5.44  1.94  0.124
Error   24  67.14  2.80
Total   29  94.34
S = 1.673   R-Sq = 28.83%   R-Sq(adj) = 14.01%


Individual 95% CIs For Mean Based on Pooled StDev


Level       N    Mean  StDev    -+---------+---------+---------+--------
P&G         5   0.004  0.032                 (---------*---------)
UNILEVER    5   0.043  0.240                 (--------*---------)
PANASONIC   5  -1.800  2.611     (---------*--------)
PHILIPS     5   1.198  2.184                          (--------*---------)
NEC         5  -1.071  2.035           (--------*----------)
ERICSSON    5   0.092  0.998                  (---------*--------)
                                   -+---------+---------+---------+--------
                                 -3.2      -1.6      -0.0       1.6
```
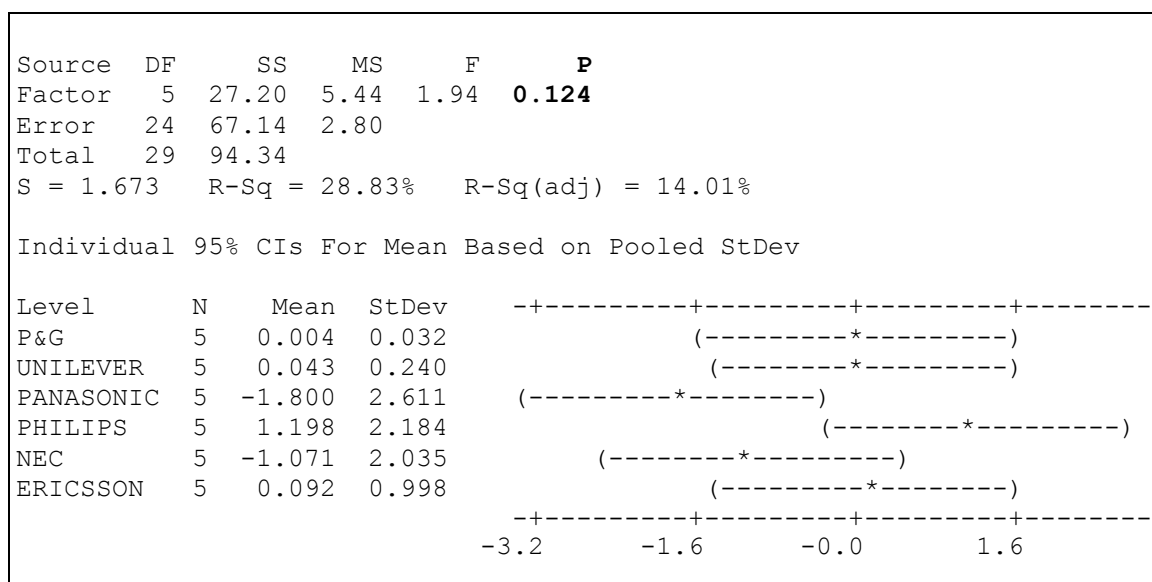
Figure 88. TNC annual EBITD/REV performance—One-way ANOVA.

Figure 89 shows the TNC annual EBITD/REV performance with trend lines.

Performance trend lines are similar with Panasonic as the major outlier, mainly driven by

a sharp drop in 2011 (see Appendix F) and mentioned as part of the analysis of EBITD

performance; that year, Panasonic cut 17,000 jobs in a plan to drastically reduce costs.
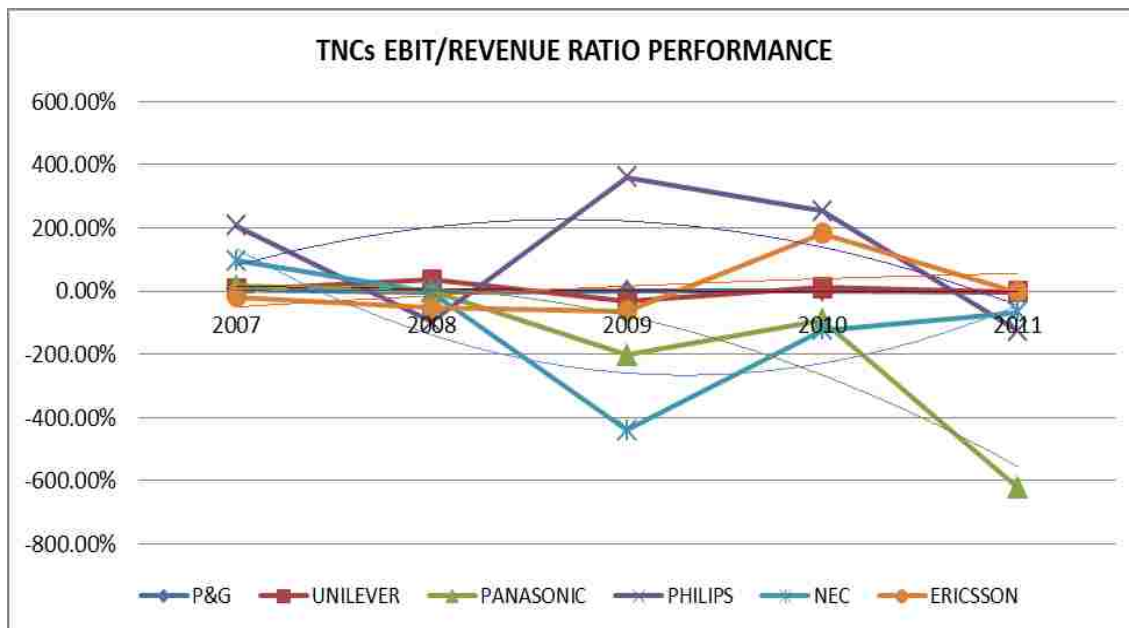
Figure 89. TNC annual EBITD/REV performance—Performance with trend lines.

Figure 90 shows the probability plot as a data consistency analysis for TNC EBITD/REV performance, where only one P value, that of Ericsson (P = 0.048), is slightly < 0.05 with 95% CI; therefore, it can be concluded that the data sample is normal, and thus Bartlett's test for equal variances was used to analyze the sample's standard deviations.
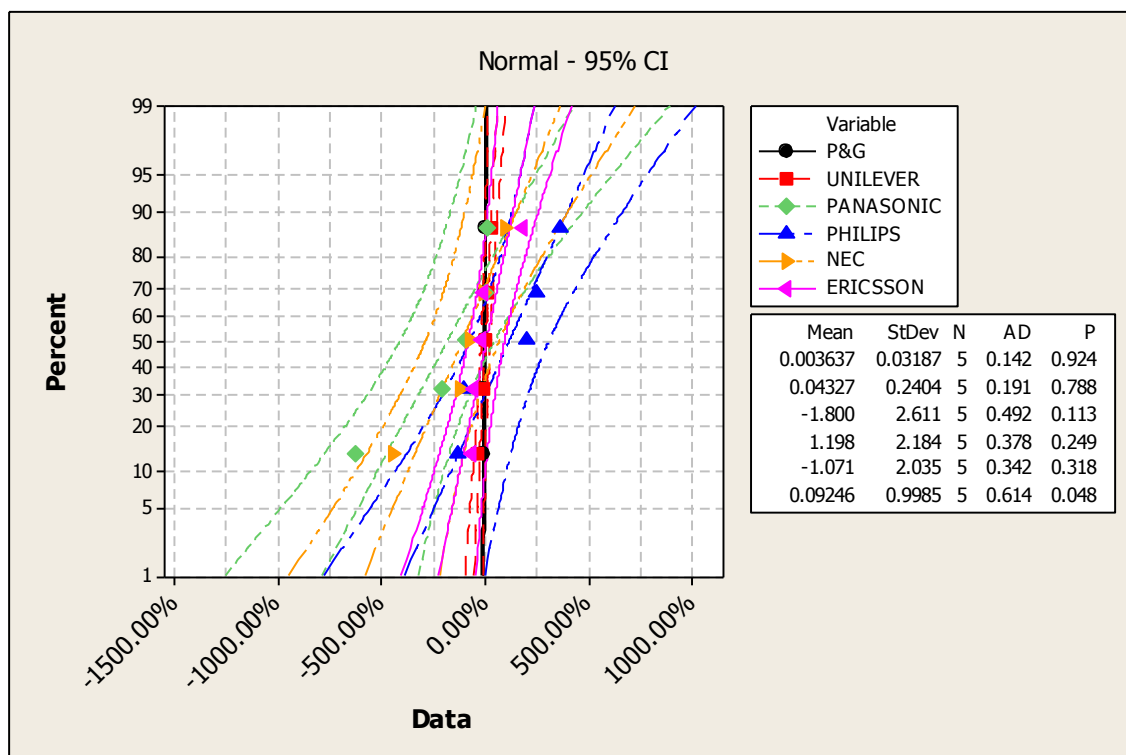
Figure 90. TNC annual EBITD/REV performance—Probability plot (data consistency analysis).

Figure 91 shows the box plot comparison for TNC annual EBITD/REV performance; data dispersion is high, with Procter & Gamble and Panasonic as major outliers, with the lowest and highest dispersions respectively. Figure 92 shows the test for equal variances for TNC annual EBITD/REV performance with a P value of 0 using Bartlett's test, which is < 0.05 with 95% CI; therefore, the standard deviations are different, with Procter & Gamble and Unilever having significantly less variation. It can be concluded that there are significant statistical differences among TNC annual EBITD/REV performance.
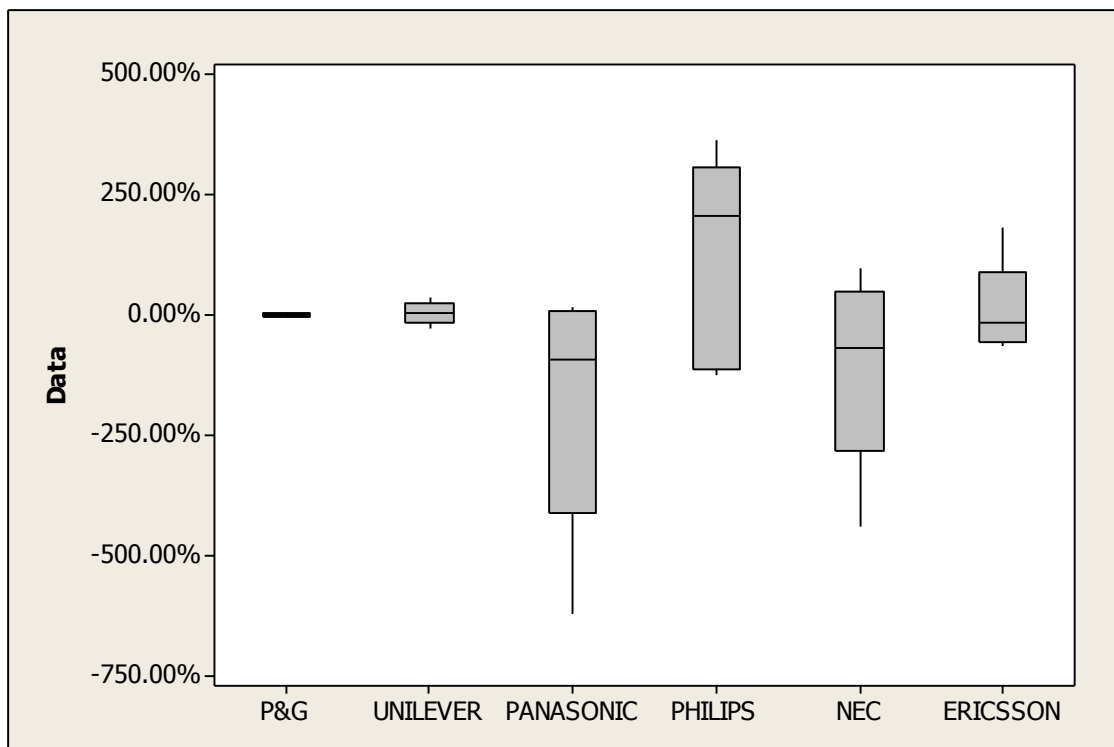
Figure 91. TNC EBITD/REV annual performance—Box plot comparison.
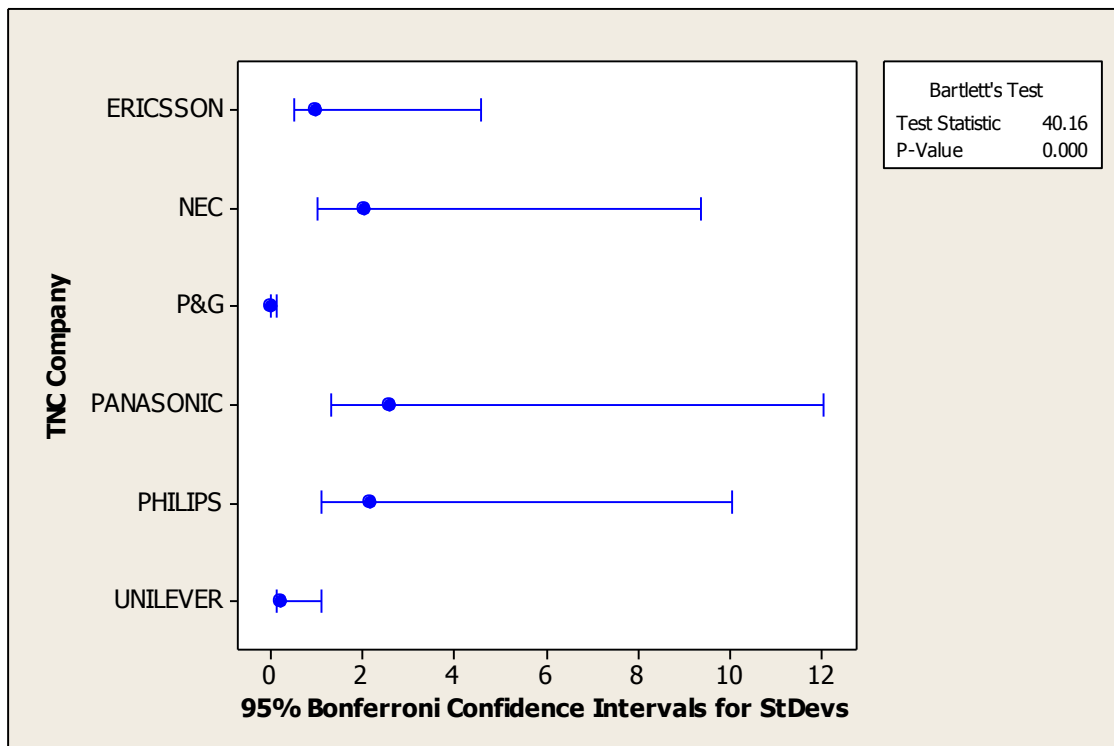
Figure 92. TNC EBITD/REV annual performance—Test for equal variances.

In summary, Table 39 presents the results of the statistical analyses for TNC annual EBITD/REV performance.

Table 39

Summary of Statistical Analyses for TNC Annual EBITD/REV Performance

	TNC sample
	H6: EBITD/REV performance
One-way ANOVA	
P value	0.124
P value < 0.05 (Y/N)	N
Mean (Different/Similar)	Similar
Outliers	
Performance trend lines (Different/Similar)	Different
Outliers	Panasonic
Probability plot (Normal/nonparametric data sample)	Normal
Box plot comparison & Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)	
P value (Bartlett or Levene's test)	0 (Bartlett)
P value < 0.05 (Y/N)	Y
StDev (Different/Similar)	Different
Dispersion (High/Low)	High
Outliers	PG

Descriptive analysis of individual MNC EBITD/REV performance. This section presents the results of the quantitative analysis for MNC annual EBITD/REV. Table 40 and Figure 93 show the results of the one-way ANOVA test for MNC annual EBITD/REV performance, with a P value of 0.993, which is > 0.05 with 95% CI, with no

major outliers; therefore, it can be concluded that there are no significant statistical

differences among the means for EBITD/REV performance when comparing MNCs

among themselves.

Table 40

MNC Annual EBITD/REV Performance—One-Way ANOVA 1 of 2

Source	DF	SS	MS	F	P
Factor	20	14.25	0.71	0.38	0.993
Error	179	333.46	1.86		
Total	199	347.71			

Level	N	Mean	StDev
GE	5	0.049	0.418
KAO	5	-0.068	0.141
LG	5	0.574	2.629
TOSHIBA	5	0.361	2.595
IBM	5	0.064	0.074
MICROSOFT	5	-0.000	0.116
NOKIA	5	0.546	2.929
APPLE	5	0.179	0.189
INTEL	5	0.201	0.615
J&J	5	-0.051	0.213
KIMB CLARK	5	-0.001	0.147
MOTOROLA	5	0.812	3.678
RIM	5	-0.012	0.152
VONAGE	5	-0.521	1.087
SIERRA	5	0.119	1.028
HP	5	0.005	0.138
COLGATE	5	0.070	0.092
QUALCOMM	5	0.037	0.425
ARRIS	5	-1.068	0.988
DOLBY	5	0.046	0.097
MNC EBIT REV PERF	100	0.067	1.325

Note. S = 1.365   R-Sq = 4.10%   R-Sq(adj) = 0.00%. Individual 95% CIs For Mean Based on Pooled StDev.

```
Source    DF      SS    MS     F       P
Factor    20   14.25  0.71  0.38   0.993
Error    179  333.46  1.86
Total    199  347.71
S = 1.365   R-Sq = 4.10%   R-Sq(adj) = 0.00%


Level                 ---------+---------+---------+---------+
GE                          (---------*---------)
KAO                       (---------*---------)
LG                            (---------*---------)
TOSHIBA                     (---------*---------)
IBM                         (----------*---------)
MICROSOFT                  (---------*---------)
NOKIA                        (---------*---------)
APPLE                     (---------*----------)
INTEL                      (---------*---------)
J&J                       (---------*---------)
KIMB CLARK                (---------*---------)
MOTOROLA                      (---------*---------)
RIM                       (---------*---------)
VONAGE                 (---------*---------)
SIERRA                    (---------*---------)
HP                        (---------*---------)
COLGATE                   (---------*---------)
QUALCOMM                  (---------*---------)
ARRIS                (---------*---------)
DOLBY                     (---------*---------)
MNC EBIT REV PERF            (--*-)
                      ---------+---------+---------+---------+
                        -1.2      0.0      1.2      2.4
```
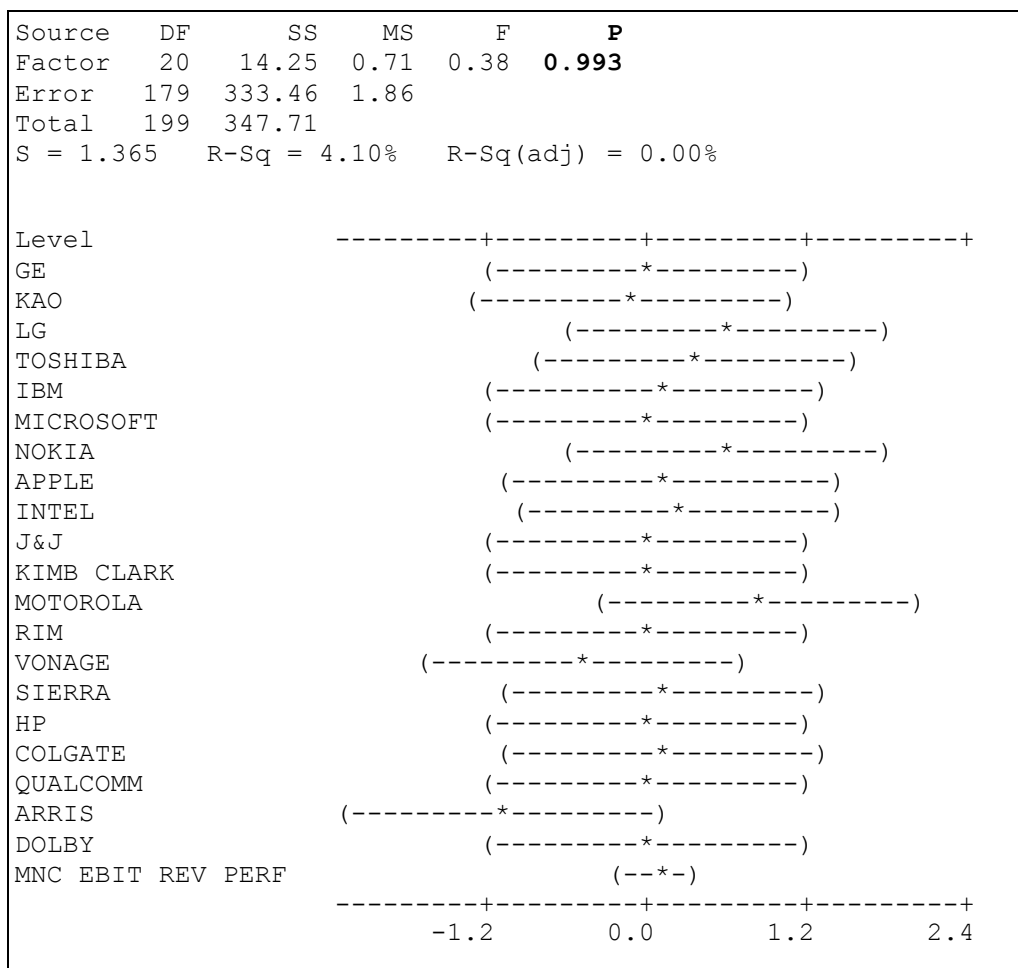
Figure 93. MNC annual EBITD/REV performance—One-way ANOVA 2 of 2.

Figures 94 and 95 show annual EBITD/REV performance with trend lines for

MNCs; these trend lines are different, with LG, Motorola, Toshiba, and Nokia, all in the

technology sector, showing the sharpest 1-year over-performance. This industry-specific

behavior is more prominent in the case of EBITD/REV performance than what was

observed in the analysis of EBITD performance; where a company like Johnson &

Johnson that belongs to the consumer and healthcare industries also showed sharp year-

over-year deviations.

Therefore, it can be concluded that MNC performance trend lines, which show year-over-year annual EBITD/REV performance, are different, while the means for the same MNCs are similar; this is mainly driven by the outliers in the performance trend lines analysis.
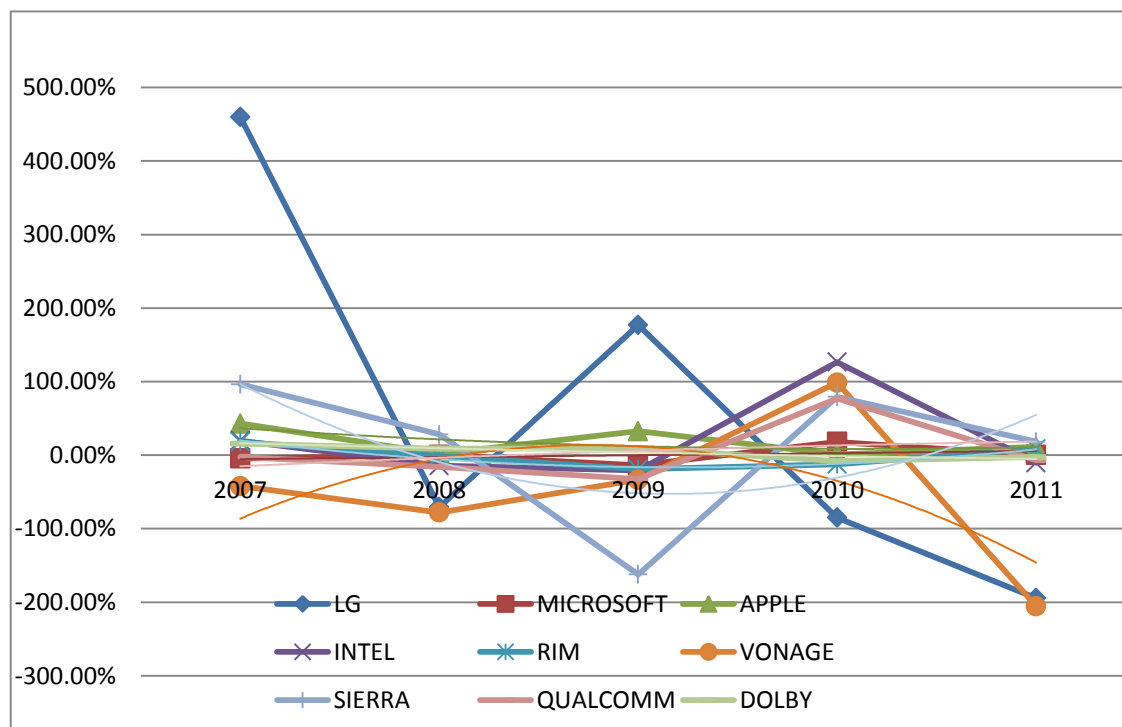
Figure 94. MNC annual EBITD/REV performance—Performance with trend lines 1 of 2.
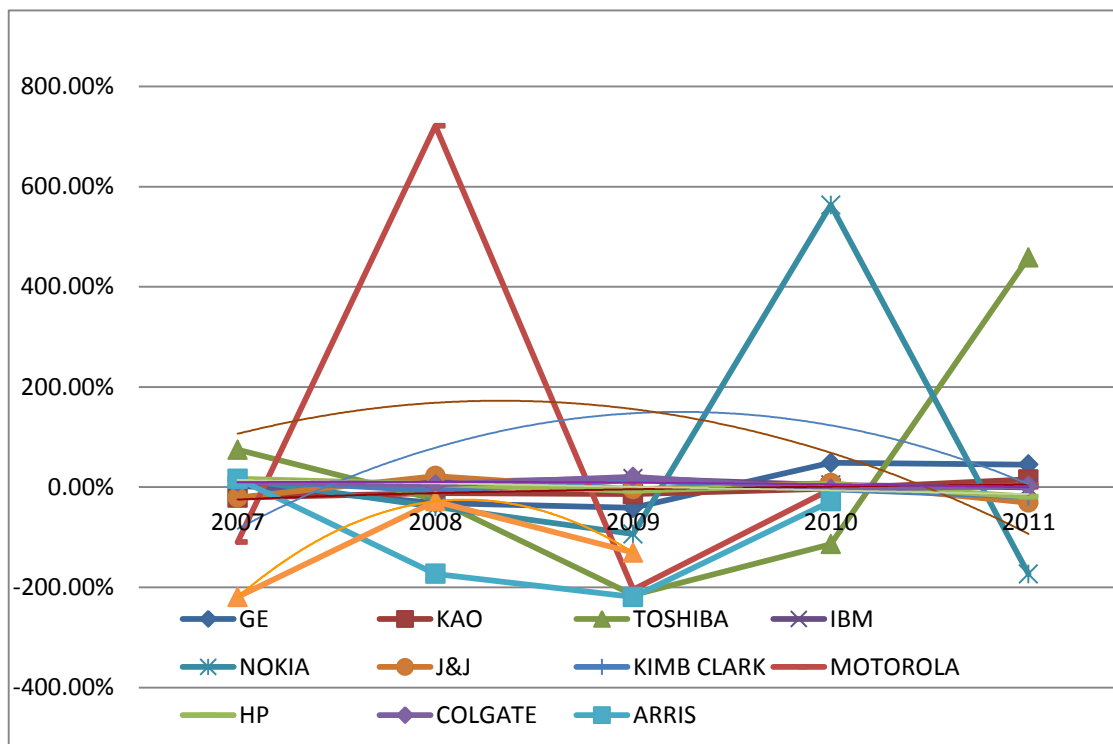
Figure 95. MNC annual EBITD/REV performance—Performance with trend lines 2 of 2.

Figure 96 shows the probability plot for MNC annual EBITD/REV performance, where only two P values are < 0.05 with 95% CI; therefore, it can be concluded that the data sample is normal, and thus Bartlett's test for equal variances was used to analyze the sample's standard deviations.
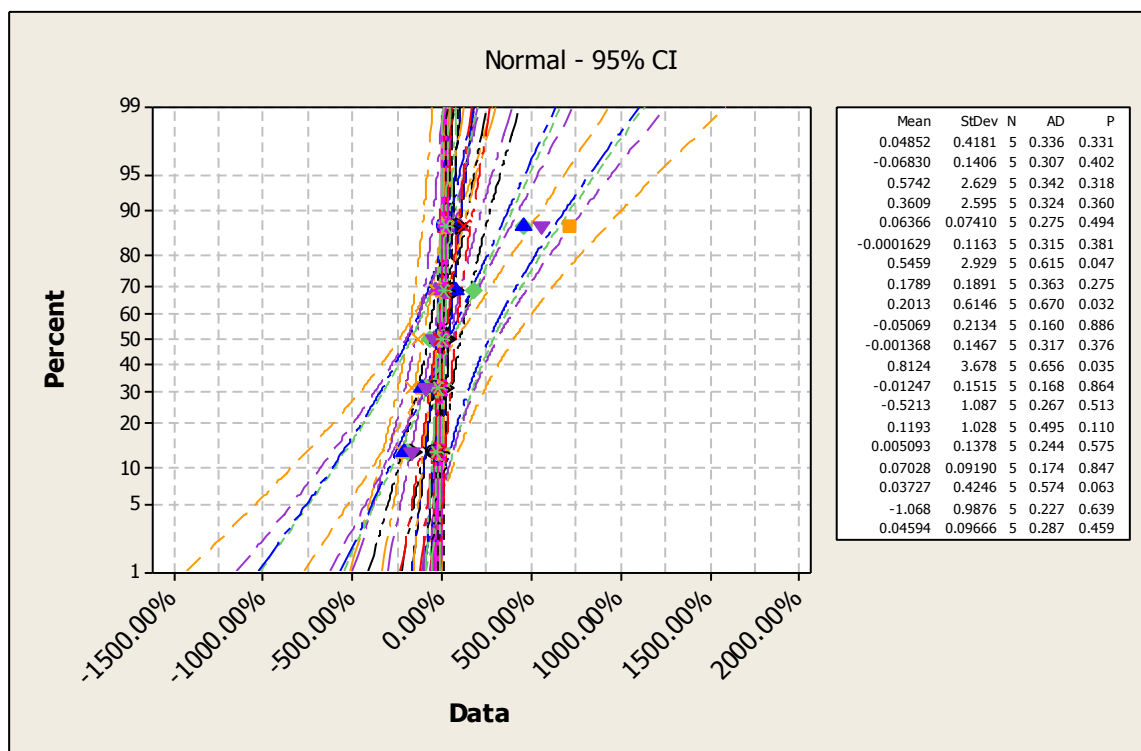
Figure 96. MNC annual EBITD/REV performance—Probability plot (data consistency analysis).

Figure 97 shows the box plot comparison for MNC annual EBITD/REV performance; the data dispersion is high, showing two clearly differentiated groups. Similar to the EBITD data analysis, LG, Toshiba, Nokia, and Motorola show the highest dispersion, while IBM, Colgate, and Dolby have the lowest dispersion. Figure 98 shows the test for equal variances for MNC EBITD/REV performance with a P value of 0 using Bartlett's test, which is < 0.05 with 95% CI; therefore, the standard deviations are different, and the graphic observation of the spread also shows clear outliers, such as LG, Motorola, RIM, and Sierra. It can be concluded that there are statistical differences in standard deviations and variances among MNCs.
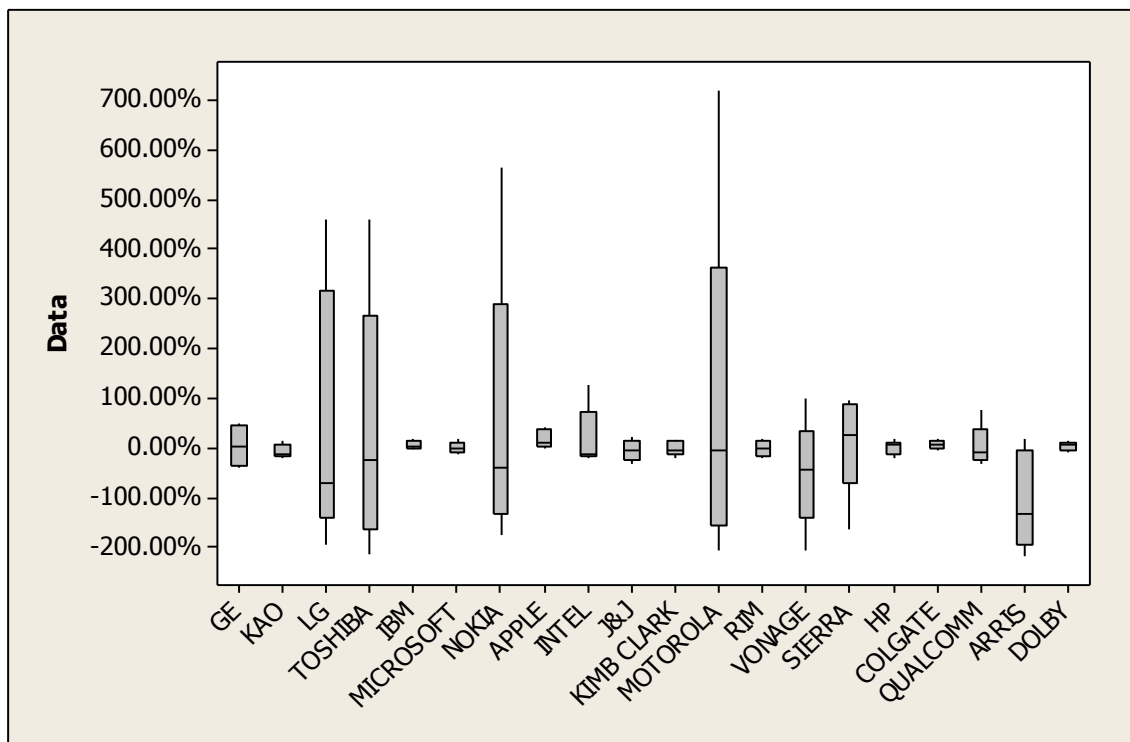
Figure 97. MNC annual EBITD/REV performance—Box plot comparison.
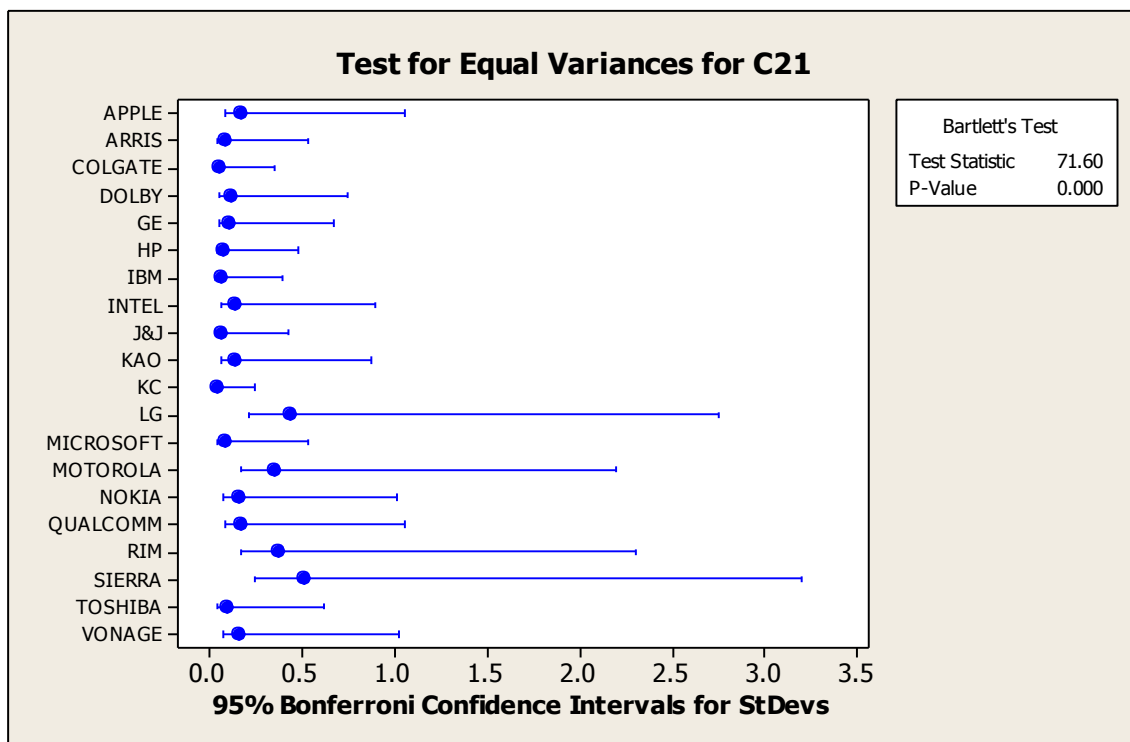
Figure 98. MNC annual EBITD/REV performance—Test for equal variances.

In summary, Table 41 presents the results of the statistical analyses for MNC

annual EBITD/REV performance.

Table 41

Summary of Statistical Analyses for MNC Annual EBITD/REV Performance

	MNC sample
	H6: EBITD/REV performance (annual)
One-way ANOVA	
P value	0.993
P value < 0.05 (Y/N)	N
Mean (Different/Similar)	Similar
Outliers	
Performance trend lines (Different/Similar)	Different
Outliers	LG, Motorola, Nokia, Toshiba
Probability plot (Normal/nonparametric data sample)	Normal
Box plot comparison & Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)	
P value (Bartlett or Levene's test)	0 (Bartlett)
P value < 0.05 (Y/N)	Y
StDev (Different/Similar)	Different
Dispersion (High/Low)	High
Outliers	

Descriptive analysis of aggregated TNC and aggregated MNC EBITD/REV

performance. This section presents the results of the hypothesis testing of aggregated

TNC and aggregated MNC annual EBITD/REV performance. Figure 99 shows the

probability plot for aggregated TNC and aggregated MNC annual EBITD/REV

performance, where both P values for TNCs and MNCs are close to 0, therefore < 0.05

with 95% CI. It can be concluded that, when all TNC and all MNC annual EBITD/REV

performance data is put together as one group, the data sample is nonparametric, and thus

Levene's test for equal variances was used to analyze the sample's standard deviations.
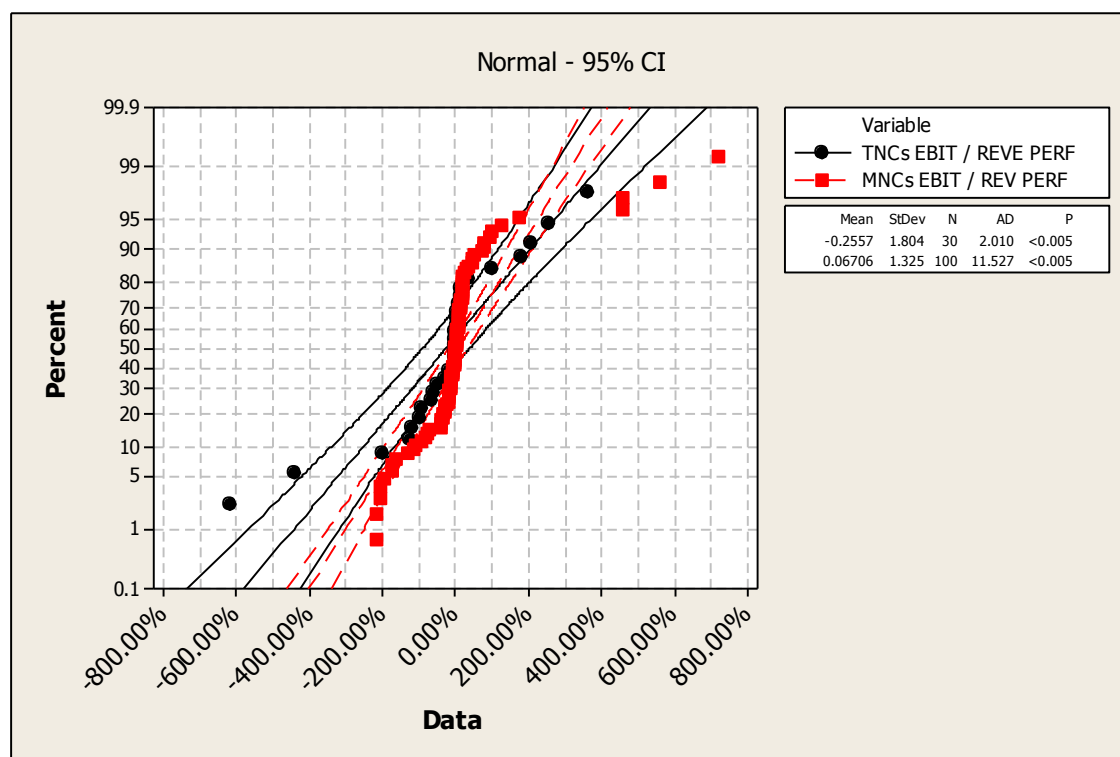
Figure 99. Aggregated TNC and aggregated MNC annual EBITD/REV performance—
Probability plot.

Figure 100 shows the test for equal variances for aggregated TNC and aggregated

MNC annual EBITD/REV performance with a P value of 0.116 using Levine's test for

nonparametric data samples as established in the analysis of the probability plot; this

value is > 0.05 with 95% CI. Therefore, the standard deviations of both aggregated data

samples are similar, and data dispersions are somewhat similar, but a conclusive

observation is not possible due to the large amount of outlier values.
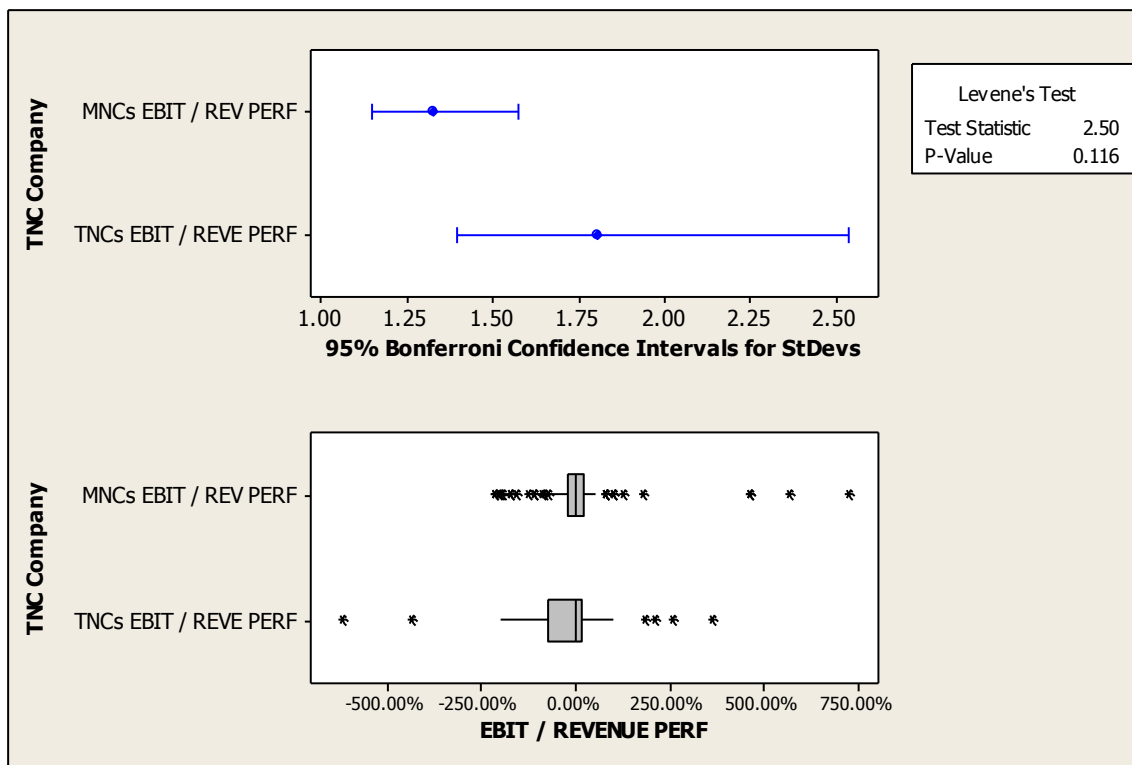
Figure 100. Aggregated TNC and aggregated MNC annual EBITD/REV performance—
Test for equal variances.

Table 42 shows the binary logistic regression test for type of company (TNC or

MNC) versus annual EBITD/REV performance, using aggregated TNC and aggregated

MNC annual EBITD/REV performance data; the P value is 0.269, which is > 0.05 with

95% CI.

Table 42

Aggregated TNC and Aggregated MNC Annual EBITD/REV Performance—Binary Logistic Regression, Type of Company (TNC or MNC) Versus Annual EBITD/REV Performance

Variable	Value	Count
TNC Company	TNC EBIT/REV Performance	30 (Event)
	MNC EBIT/REV Performance	100
	Total	130

Logistic Regression Table							
					Odds	95% CI	
Predictor	Coef	SE Coef	Z	P	Ratio	Lower	Upper
Constant	-1.22058	0.211087	-5.78	0.000			
EBIT/REV Perf	-0.169271	0.158756	-1.07	0.286	0.84	0.62	1.15

Note. Log-Likelihood = -69.616. Test that all slopes are zero: G = 1.221, DF = 1, P-Value = 0.269.

Figure 101 shows the one-way ANOVA test for type of company (TNC or MNC) versus annual EBITD/REV performance, using aggregated TNC and aggregated MNC annual performance data; the P value is 0.286, which is > 0.05 with 95% CI, and the means are similar between both data samples.

```
Source          DF      SS    MS    F      P
TNC Company      1     2.40  2.40  1.15  0.286
Error          128   268.20  2.10
Total          129   270.60


S = 1.448   R-Sq = 0.89%   R-Sq(adj) = 0.11%


Level                      N    Mean   StDev
MNC EBIT / REV PERF      100   0.067   1.325
TNC EBIT / REV PERF       30  -0.256   1.804


Individual 95% CIs For Mean Based on Pooled StDev


Level                      ------+---------+---------+---------+---
MNC EBIT / REV PERF                            (--------*----------)
TNC EBIT / REV PERF        (---------------*-----------------)
                           ------+---------+---------+---------+---
                             -0.60     -0.30      0.00      0.30
Pooled StDev = 1.448
```
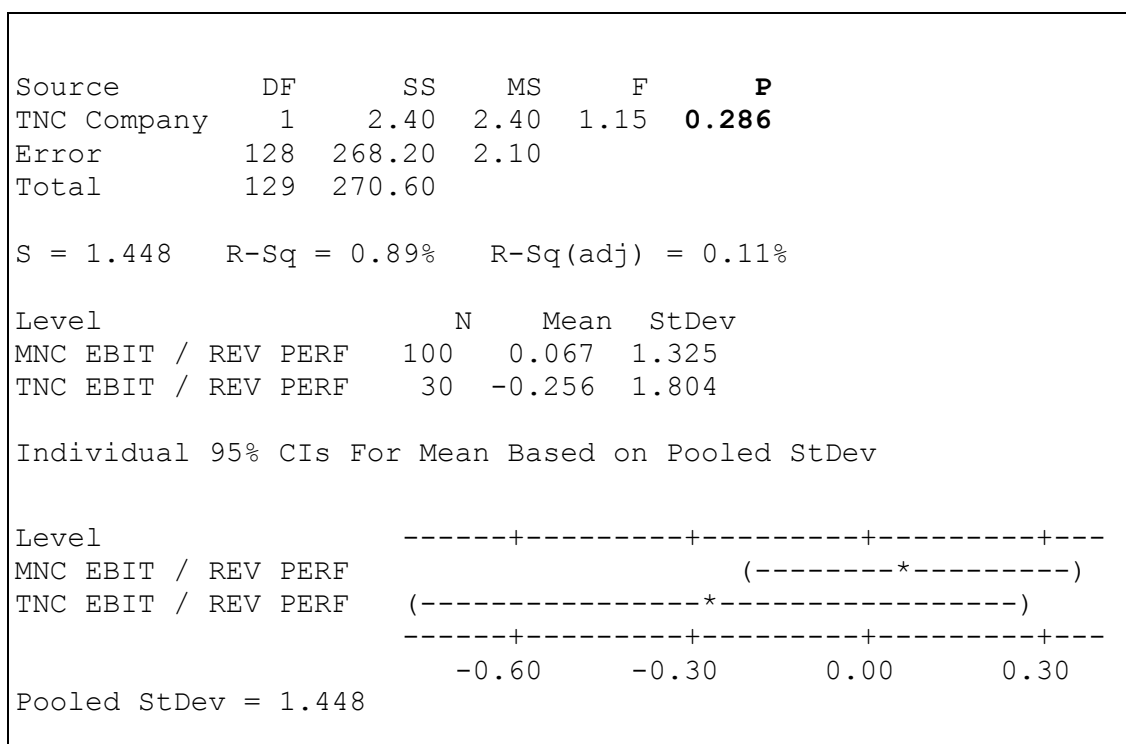
Figure 101. Aggregated TNC and aggregated MNC annual EBITD/REV performance—
One-way ANOVA, type of company (TNC or MNC) versus annual EBITD/REV
performance.

Table 43 shows the Kruskal-Wallis test for type of company (TNC or MNC)

versus annual EBITD/REV performance, using aggregated TNC and aggregated MNC

annual EBITD/REV performance data; the P value is 0.462, which is > 0.05 with 95%

CI, and the medians are similar between both data samples.

Table 43

Aggregated TNC and Aggregated MNC Annual EBITD/REV Performance—Kruskal-Wallis Test, Type of Company (TNC or MNC) Versus Annual EBITD/REV Performance

Type of company	N	Median	Ave rank	Z
MNC EBIT / REV PERF	100	-0.008395	66.8	0.73
TNC EBIT / REVE PERF	30	-0.022768	61.1	-0.73
Overall	130		65.5	

Note. H = 0.54. DF = 1. P = 0.462**.**

Hypothesis 6

This hypothesis tested whether there was a relationship between MNC 5-year EBITD/REV performance and the successful application of the TNC model. The null and alternate hypotheses were stated as follows:

$H6_0$: MNC 5-year EBITD to REV ratio (EBITD/REV) (2007–2011) is negatively or not related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

$H6_a$: MNC 5-year EBITD to REV ratio (EBITD/REV) (2007–2011) is positively related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989).

All three hypothesis tests were applied at a significance level of 0.05, or 95% CI: the binary logistic regression with P = 0.269, the one-way ANOVA test with P = 0.286, and the Kruskal-Wallis test for nonparametric data samples with P = 0.462. All tests conclude that the null Hypothesis $H6_0$ should be accepted. Since the data sample is nonparametric, the conclusions from the Kruskal-Wallis test should supersede hypothesis

tests for normal data samples. This indicates there is no relationship between MNC

EBITD/REV performance and having successfully applied the TNC model.

In summary, Table 44 shows the results of the tests performed for aggregated

TNC and aggregated MNC annual EBITD/REV performance.

Table 44

Summary of Statistical Analyses for Aggregated TNC and Aggregated MNC Annual EBITD/REV Performance

	Aggregated TNC and aggregated MNC
	H6: EBITD/REV performance
Probability plot (Normal/nonparametric data sample)	Nonparametric
Test for equal variances (Bartlett's for normal & Levene's for nonparametric data samples)	
P value (Bartlett or Levene's test)	0.116 (Levene)
P value < 0.05 (Y/N)	N
StDev (Different/Similar)	Similar
Binary Logistic Regression	
P value	0.269
P value < 0.05 (Y/N)	N
H_0 Rejected/Accepted	Accepted
One-way ANOVA	
P value	0.286
P value < 0.05 (Y/N)	N
H_0 Rejected/Accepted	Accepted
Mean (Different/Similar)	Similar
Nonparametric testing Mann-Whitney (MW) or Kruskal-Wallis (KW)	
P value (MW/KW)	0.462 (KW)
P value < 0.05 (Y/N)	N
H_0 Rejected/Accepted	Accepted
Median (Different/Similar)	Similar

It can be concluded that Hypothesis $H6_0$ is accepted since there is no statistical relationship between MNC EBITD/REV performance and having successfully applied the TNC model. In other words, there is no statistical proof that having successfully applied the TNC model has a positive impact on a company's EBITD/REV performance.

Quantitative Analysis Summary

This section described the results of the hypotheses testing for the quantitative portion of the research model in Figure 4, specifically showing the descriptive statistics of aggregated TNCs and aggregated MNCs for all six financial performance indicators, as illustrated in Table 45.

Table 45

Summary of Statistical Analyses for Aggregated TNC and Aggregated MNC Financial Performance

	Aggregated TNC and Aggregated MNC						
	H1: Share Price Performance	H1: Share Price Performance (monthly)	H2: REV Performance	H3: GM Performance	H4: ROS Performance	H5: EBITD Performance	H6: EBITD to REV Performance
Probability plot (Normal/nonparametric data sample)	Nonparametric	Nonparametric	Nonparametric	Nonparametric	Normal	Nonparametric	Nonparametric
Test for equal variances							
P value (Bartlett or Levene's test)	0.109 (Levene)	0 (Levene)	0.016 (Levene)	0 (Levene)	0.001 (Bartlett)	0.222 (Levene)	0.116 (Levene)
P value < 0.05 (Y/N)	N	Y	Y	Y	Y	N	N
StDev (Different/Similar)	Similar	Different	Different	Different	Different	Similar	Similar
Binary Logistic Regression							
P value	0.178	0.135	0.007	0.118	0.014	0.092	0.269
P value < 0.05 (Y/N)	N	N	Y	N	Y	N	N
H0 Rejected/Accepted	Accepted	Accepted	Rejected	Accepted	Rejected	Accepted	Accepted
One-way ANOVA							
P value	0.19	0.135	0.016	0.119	0.016	0.103	0.286
P value < 0.05 (Y/N)	N	N	Y	N	Y	N	N
H0 Rejected/Accepted	Accepted	Accepted	Rejected	Accepted	Rejected	Accepted	Accepted
Mean (Different/Similar)	Similar	Similar	Different	Similar	Different	Similar	Similar
Nonparametric testing (Mann-Whitney or Kruskal-Wallis)							
P value (MW/KW)	0.1259 (MW)	0.1458 (MW)	0.005 (KW)	0.268 (KW)	n/a	0.1072 (MW)	0.462 (KW)
P value < 0.05 (Y/N)	N	N	Y	N		N	N
H0 Rejected/Accepted	Accepted	Accepted	Rejected	Accepted		Accepted	Accepted
Median (Different/Similar)	Similar	Similar	Different	Similar		Similar	Similar

As a whole, a positive relationship between MNCs having successfully applied the TNC model as per Bartlett and Ghoshal (1989) and stronger financial performance when compared to other MNCs could not be established. There was no statistical difference in financial performance in the case of share price, gross margin, EBITD, and EBITD/REV ratio; while it could not be established whether the relationship existing between TNCs and MNCs in the cases of revenue and return on sales performances was positive or negative. This was driven by the significant statistical differences among MNCs in both revenue and return on sales and among TNCs in the case of return on sales.

This testing followed the consistency matrix on Table 9, where each hypothesis was tested using a binary logistic regression; additionally, a one-way ANOVA test was applied for results validation, and the Mann-Whitney or Kruskal Wallis tests were used when the data samples were found to be nonparametric. In all cases, hypothesis testing results were consistent independent of the testing tool applied. The results are summarized in Table 46.

Table 46

Summary of Hypotheses Results for Aggregated TNC and Aggregated MNC Financial Performance

	Proposed relationship	Confirmed?
H1	MNC 5-year Share Price Performance (2007–2011) is positively related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989)	No
H2	MNC 5-year REV performance (2007–2011) is related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989)	Yes
	MNC 5-year REV performance (2007–2011) relationship to having successfully applied the TNC model as per Bartlett and Ghoshal (1989) is positive	No
H3	MNC 5-year GM performance (2007–2011) is positively related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989)	No
H4	MNC 5-year ROS performance (2007–2011) is related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989)	Yes
	MNC 5-year ROS performance (2007–2011) relationship to having successfully applied the TNC model as per Bartlett and Ghoshal (1989) is positive	No
H5	MNC 5-year EBITD performance (2007–2011) is positively related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989)	No
H6	MNC 5-year EBITD to REV ratio (EBITD/REV) (2007–2011) is positively related to having successfully applied the TNC model as per Bartlett and Ghoshal (1989)	No

Qualitative Research Findings and Discussion

This section describes the results and findings for the qualitative portion of the

research model in Figure 4; where three semi-structured interviews to N-2 and N-3 TNC

executives were conducted to validate the contribution of the seven elements of the transnational approach in enabling an organization to successfully go through a radical transformation process. This was deemed sufficient since the research design calls for a mixed methodology, where the quantitative element is dominant over the qualitative element, and its purpose is to gain depth and verbalized input in the discussion of the hypotheses findings.

All executives have direct responsibility over their functional area as well as a board base of country coverage. All interviews were conducted over the phone on an individual basis at separate dates and times: the first executive is German, at VP level with European regional functional responsibility, based in Germany; the second executive is from the United Sates, at VP level with global functional responsibility, based in the United States; and the third executive is from Mexico, at VP level with Latin America functional responsibilities, based in Panama. Their functional responsibilities cover the areas of business strategy, innovation, logistics, and procurement; and TNCs from the global consumer goods and global consumer electronics sectors were represented in these interviews.

The interviews attempted to assess the prevalence of the main element of the TNC approach close to 25 years after the original study from Bartlett and Ghoshal (1989); the discussion was framed around the TNC executives' observations of the following seven statements in their organizations:

1. Innovative activities, practices, and ideas are actively embraced and shared between both the headquarters and overseas locations.

2. International dispersion is flexible, allowing for differentiated and specialized subsidiary roles and flexible coordination processes.

3. Overseas operations have an active role in the development and execution of the organization's strategy.

4. There is heavy investment in R&D.

5. The configuration of assets, capabilities, and core competencies are broadly dispersed, interdependent, and specialized.

6. There is an active interaction between overseas locations and their local context.

7. Knowledge is developed jointly by the headquarters and the overseas locations and shared worldwide.

Qualitative data collection approach and data analysis steps. The processes and business practices under study require a well-grounded level of knowledge and understanding of various business models and multinational practices; the ability to link the interviewees' responses to the research questions and the ability to follow up with probing questions and validating observations was essential to bring adequate depth to the semi-structured interview approach. The primary researcher has extensive professional experience in large multinational organizations, holding various management and executive roles for over 15 years; therefore, it was believed that the interviewees would feel more comfortable opening up and enriching the discussion with concrete examples, opinions, and other references during a discussion among peers.

The following analysis steps were followed:

- Interview responses: Listing of key statements coded by nodes

- o Descriptive summary of statements from clusters under each node

- Issues encountered during the interviews and overall observation

- Analysis of nodes by number of coded references

- Word frequency query of 50 most frequently used words

  - o Tag cloud graphic

Interview responses: List of key statements coded by nodes. All statements were pulled from the interviews using NVIVO version 9 qualitative data analysis software package (http://www.qsrinternational.com/). Once the audio recordings of the three semi-structured in-depth interviews were loaded into the software and transcribed, statements were coded and categorized into 11 nodes distributed as follows:

Seven nodes referring to the statements encompassing TNC characteristics used as framework for the interviews:

1. Embracement of innovative activities

2. International dispersion

3. Active role of overseas operations

4. Heavy investment in R&D

5. Broadly dispersed configuration of assets and capabilities

6. Interaction between subsidiaries and their local context

7. Development and diffusion of knowledge

Four nodes referring to overall assessment of TNC prevalence:

1. Positive comments and strengths

2. Negative comments and weaknesses

3. Changes over the years

4. Remains an enduring characteristic

Only significant statements and those aligned with the underlying themes of this research were considered for this analysis and discussion. Since the interviews were semi-structured, statements pertaining to each node appeared in various stages of the discussion. Therefore, the statements are presented as they were grouped in the 11 nodes as opposed to following the chronological structure of the interview questions and probes. One statement may be coded to more than one node since these do not represent mutually exclusive categories, and each may represent different meanings based on the context of the discussion, especially in the case of the nodes referring to the TNC characteristics versus the nodes referring to overall assessment of TNC prevalence.

The following is the list of key statements as coded and categorized into 11 nodes, representing each individual node:

1. Node a. Embracement of Innovative Activities, Key Statements (3 sources, 20 references):

   - Yes. We're definitely innovative; it's a global role and I work in headquarters.

   - Much more the latter.

   - Not being so reactionary; that's allowed us to be stable.

   - Since we moved the local supply chain teams into the European organization so I have all the contacts now, they are reporting to me, and this gives me and gives them the total overview and we can work out common European projects which are much more helpful to drive the innovation in the business.

- All of the managers have been acting really happy, and acting really hungry for some more cross-functional and more cross-country activities.

- We try to harmonize amongst our regions, and then go into the global headquarters and say ok, we standardized processes in Europe and U.S. and maybe it makes sense to roll it out globally.

- They prefer to make the research really down to the last step, and not open to take any risks, maybe even to prefer to follow a new development rather than to be the leader.

- If it would have an impact to a factory, for example, a change of an end of line configuration and you want something different in Europe, this would be a really thorough discussion.

- Because [TNC] sees itself as a manufacturing company, and so the manufacture sides are somehow protected or at least they are leading somehow our decisions.

- As soon as we need to go back to Japan, it is more difficult for a non-Japanese person to do that. That is why we have some Japanese people within our organization who act as a kind of a window to that.

- Europe is really far, and they see Europe as one market, and it's quite difficult sometimes to just explain that Europe is not Europe. If the Turkish have a different requirement than the Swedish or the Spanish then it's a problem; to them everything is Europe.

- With the changes to the organization at the moment it's a little bit stopped but I think the next step for it is to wake up again.

- Let's say any significant IT change or idea, before we do that, we usually align with the U.S. and ask them for their comments. We have an idea for the team; for example, we ask them for their ideas and their experience and the team they are using or if we do any significant change, for example, personnel improvement, we ask them how they would do that or maybe how they are doing it already.

- I think let's say it's more driven by my personal interest.

- In the part of innovation, and we are having the structural design and research design and definition at the global level. And then we have them linked to receive them regionally and to adapt and adjust based on the regional input.

- The globe designs the product innovation and then deploys based on the input that they received from each of the regions, and then global decides on that specific initiative.

- We are sending those ideas to the globe and depending on how replicable that idea is they raise it and then the foundation of global initiative, or they ask each one of the regions to decide if they want to reapply that specific regional idea into each of the regions.

- I think lately it has changed, which I think the last two to three years the region of the company was to have standardized technologies, find the best technologies so we have the technologies; we are moving into the next generation.

- I think the part of the innovation is coming from the globe, so it's more a centralized organization; it's not coming from one country.

- Part of the design and development of the initiative or projects for is much more brought from the global than the regional hubs and part of the market; I'm talking about the specific projects and markets and countries from market executions is not really corporate executions adapting the final stages of the project to the initiatives.

Node a describes that large innovation activities that would entail significant effort, investment, and implementation effort, generally pertaining to technology, core processes, or products, are typically driven by the center. While innovation activities that have a regional or local impact are driven locally, the parent company has been giving increasing lead way for these, understanding that local markets require local implementation or rollouts.

2. Node b. International Dispersion, Key Statements (3 sources, 26 references):

- The former.

- For instance, we do a global competitive bid every year to figure out which ocean carriers we want contact with and each of the regional spots or single points of contact, and then all the lane managers that report into them provide input as to which carriers we should contact with; even more so, which lanes we should be shipping from, from origin to destination.

- It also helps. Our biggest problem, culturally, is speed because everyone thinks they have approval rates because of this very reason we just described.

- We are a company of companies.

- We grow through acquisition and divestitures, so that continues to always be a problem.

- The problem is, when one country is exporting someone else's import, once it leaves a country, people don't think about it until it reaches its destination.

- No one thinks about the in-between, the cost, and the risk; it was out of sight and out of mind.

- We are very much a destination-centric organization, in the way that we think. The export side really drives all the bookings, initiation, and export clearance.

- If the origin doesn't do it right, then it won't get cleared on the destination. It's recognizing that globally, origin and destination have to work together to make this all work.

- We also have regional headquarters so we're kind of in between, though a little bit closer to the global.

- The position and the organization in Hamburg for supply chain which they set for the headquarters for supply chain in Europe, but I thought it's not the headquarters because we have, or we had at that time a national organization structure.

- In each country in Europe, and there are many, we have a national sales company with a sales group a marketing group with a logistics or supply chain team.

- Bring all of them together in one team from our organizational perspective, so to take them out of the national sales group, to bring them into one European supply chain team, and to consolidate the warehouse and the transport activities.

- The first one was to bring those, the organization into a centrally-grouped European supply chain organization, which is finalized now; it's done.

- The headquarters is Osaka, the [TNC] headquarters and the Euro business is seen as an overseas location, but, within Europe we have, of course, many different countries and many different national sales companies, and we had many different supply chains for each country.

- It is quite easy because we have consolidated everything, and we have centralized, harmonized, and then we are ready, let's say, with that homework, you are ready to answer as a company, but if it is not harmonized and standardized then it is nearly impossible to answer.

- Partially we are still owning assets like buildings, but this in some countries we are totally out, in some countries not; that depends more on our local or regional situation, but developments goes into not owning any assets.

- We still have the national supply chain team, despite they are reporting to center, but they are sitting in their countries.

- I think there is not very much interaction, as I already said this, but give us some business direction and then it's up to us how to do it.

- In the part of innovation, and we are having the structural design and research design and definition at the global level; and then we have them linked to receive them regionally and to adapt and adjust based on the regional input.

- We are moving to a much more centralized organization.

- Not necessarily inventing in each county but managing all the other resources in the assets part.

- We have consolidation trying to adjust one, two depending on the categories, and the regions having performed in the last 10 years.

- We have dispersed assets in each one of the countries. The focus is not much more a balance to have medium to big size assets updated to support whole region, but also thinking of having the centralized team closer to these facilities.

- I'd say that there is much more possibility of the regional level to share the capabilities and the strategies and development so, the region is then responsible to take the global expertise and then distribute into each one of countries and each one of the organizations within the region.

- Part of the changes we have been implementing in the latest years is to move part of the business unit leadership teams to the Geneva, or to Singapore, or to the different regions, to make sure that we are not just an

American company you are deploying, but really a global company in different expertise and knowledge, adapted to different regions.

Node b describes that international dispersion is, by design, not flexible; organization are centralizing or regionalizing assets, decisions, and process ownership in order to increase control and gain on efficiency. Decision processes have multiple steps and added complexities due to the interdependencies between countries, various approval layers, and the fact that certain topics are coordinated and decided at the center. International dispersion, in terms of flexibility and specialization, happens at the regional level rather than the local level.

3. Node c. Active Role of Overseas Operations, Key Statements (3 sources, 23 references):

- Absolutely.

- [TNC] is not a top-down kind of company culturally, but more bottom-up.

- Culturally we are not a mandate company whatsoever, which is difficult because we don't have a mandate culture so people have the freedom to do whatever they want.

- It is hard at times to harmonize and then drive scale because everyone feels that they can do whatever they want.

- It also helps. Our biggest problem, culturally, is speed because everyone thinks they have approval rates because of this very reason we just described.

- We are a company of companies.

- We've really only been thinking multinational for the last 15 years, and everything else was domestic.

- In each country in Europe and there are many, we have a national sales company with a sales group a marketing group with a logistics or supply chain team.

- This national sales company in each country had its own supply chain team reporting to the national MD and containing its own warehouse and own distribution center.

- With the headquarters in Osaka, the real big headquarters in Japan, we do not share very much.

- This means that I am really independent as long as I deliver the results and continuous improvements, I'm relatively free.

- They have European task, that they never had in the past, and now they maybe travel maybe a little bit more and have some more interesting discussions.

- They give us basically an overall company strategy, saying we want to strengthen this product category or evolve or maybe take out volume of that product category; of course this has a certain impact on the supply chain, but it is not a real supply chain strategy. So, basically, they give us some business strategies.

- And then we adjust ourselves.

- We try to harmonize amongst our regions, and then go into the global headquarters and say ok, we standardized processes in Europe and U.S. and maybe it makes sense to roll it out globally.

- Consumer we keep in the markets, because the people in the markets they usually want to speak to a local person, not a central person.

- We have kind of a global logistics committee. This means that the logistics leader of each region of the U.S., China, Europe, and Japan have quarterly meetings in which we share both ideas and it is how much we can align, or maybe roll out our things globally.

- We try to find out areas of synergies, so maybe we can use the same provider or the same tool or something like that.

- There is not the high potential of being self-sufficient.

- We are moving to a much more centralized organization.

- Depending on the stages of the projects, and initiatives starting from being very centralized in the beginning, giving the input, but then also we are having much more autonomy in the execution of that.

- We have dispersed assets in each one of the countries; the focus is not much more a balance to have medium to big size assets updated to support whole region, but also thinking of having the centralized team closer to these facilities.

- Part of the changes we have been implementing in the latest years is to move part of the business unit leadership teams to the Geneva, or to Singapore, or to the different regions, to make sure that we are not just an

American company you are deploying, but really a global company in

different expertise and knowledge, adapted to different regions.

Node c describes that overseas operations have more of an active role in the

execution than in the development of their organization's strategy. Targets, overall

direction, and decisions impacting core products and assets are driven top down, while an

increasing amount of assets and decisions that can drive synergies and harmonization are

managed at the regional level. Meanwhile, local operations have flexibility to execute so

long that performance and financial targets are met. For a company that has been

historically constructed from a succession of mergers and acquisitions, overseas

operations have inconsistent degrees of autonomy; another challenge is observed with

communications channels in an organization with Asian headquarters and dealing with

European countries.

4. Node d. Heavy Investment in R&D, Key Statements (3 sources, 8 references):

- I think one of the key strengths of the company is that they invest a lot in
  the part of research and development.

- We are leveraging on that part of research globally.

- There is a chief research on the global team, and based on the
  development of the formulas, that is what we are reapplying; them
  learning about development in the different regions.

- The different companies invest in research and development, and then we
  are taking the execution in the regions.

- Yes, I think that [TNC] is heavily investing in R&D and will continue to do that.

- The result is a different story, because I think [TNC] is quite a conservative company. They prefer to make the research really down to the last step, and not open to take any risks, maybe to even to prefer to follow a new development rather than to be the leader.

- I would say modest.

- The problem is that a global company really drives scale as the same systems.

Node d describes that R&D is driven, controlled, and executed centrally; once a product is developed, the regions and countries become involved in its production and distribution in varying degrees, but more intensively in its commercialization and localization where pertinent.

5. Node e. Broadly Dispersed Configuration of Assets and Capabilities, Key Statements (3 sources, 30 references):

- We have it spread all over. So the global, typically, tries to harmonize and drive the overall strategy, but the regional folks do the execution and also feed into the strategy.

- It also helps.

- We are a company of companies.

- The problem is that a global company really drives scale as the same systems.

- We have a single instance of SAP, which is rare; we still have very different systems. We grow through acquisition and divestitures, so that continues to always be a problem.

- Certainly as we expand in countries, we did have to build those capabilities, and success then follows.

- This national sales company in each country had its own supply chain team reporting to the national MD and containing its own warehouse and own distribution center.

- We have consolidated the warehouse; now they learned it's not necessary to have in each country a warehouse so we can reduce from 15 down to five and just, central warehouses, which is working now.

- In some countries we did own the warehouse, and the operation, so this has changed.

- The European standard, we do not want to own any assets, so we have outsourced all the transport fleet that we had in the past, all the warehouse assets, etc. and everything, so now we are really without anything.

- Lots of things we said we want to do the value part of the supply chain and we want to outsources, and this is more or less done already, or any kind of operation.

- With this new European set up it is quite easy because we have consolidated everything.

- Operation, we don't have any assets any more.

- Partially we are still owning assets like buildings, but this in some countries we are totally out.

- Development goes into not owning any assets.

- Any functions which we can centralize from a supply chain point of view, a lot of functions like reports, audit, late payment reporting, KPIs, even import management, which we can consolidate and we are put together into one group, we are centralizing.

- We still have the national supply chain team, despite they are reporting to center, but they are sitting in their countries.

- I do have some ideas.

- But changes in the company have been having different technologies based in different regions and they can really embrace, they can understand those centralized strategies, then coming back to the region.

- There is not the high potential of being self-sufficient.

- Not necessarily inventing in each county but managing all the other resources in the assets part.

- I think they are interdependent, specialized, they are not totally dispersed.

- I think in the past 10 years ago we have much more dispersed supply change.

- We have had a consolidation even in the part manufacturing.

- We have consolidation trying to adjust one, two depending on the categories, and the regions having performed in the last 10 years.

- We have dispersed assets in each one of the countries; the focus is not much more a balance to have medium to big size assets updated to support whole region, but also thinking of having the centralized team closer to these facilities.

- The different companies invest in research and development, and then we are taking the execution in the regions.

- I'd say that there is much more possibility of the regional level to share the capabilities and the strategies and development so, the region is then responsible to take the global expertise and then distribute into each one of countries and each one of the organizations within the region.

- Part of the changes we have been implementing in the latest years is to move part of the business unit leadership teams to the Geneva, or to Singapore, or to the different regions, to make sure that we are not just an American company you are deploying, but really a global company in different expertise and knowledge, adapted to different regions.

- Moving divesting within the different regions.

Node e describes that a high dispersion of assets is seen as an issue rather than strength, and companies are looking to consolidate and optimize the utilization of assets through centralizations of processes and decision making. For a company that has grown through mergers and acquisitions, consolidation and optimization poses additional challenges due to the complexity and dispersion inherent to having diverse assets from various companies. Independence to manage assets and capabilities, as well as specialization, do exist, but at the regional level, not the local level. The tendency is to

outsource, divest, and reduce the amount of assets a company owns. The role of local operations is geared toward execution, as opposed to strategy development and innovation; therefore, specialization of capabilities happens in terms of knowledge of local markets.

6. Node f. Interactions Between Subsidiaries and Their Local Context, Key Statements (3 sources, 18 references):

- We talk daily. We have regular weekly scheduled calls. We are instant communicators and have flexible work, 24 hours around the clock so it doesn't matter where you are sitting.

- We are a company of companies.

- When you first enter a country, you have to understand the market and be able to sell the products, and only after you really start selling there is enough scale and volume to then allow import into that country. If you get a lot of it, then you set up a market distribution organization in that country, and a product supply maybe follows. Also possibly manufacturing there, and if you want to manufacture then you have to set up a supply chain.

- We're also separated by function, so you think about which functions need to be more on the ground. Your sales organization needs to be on the ground, the marketing people who set up the supply chains need to be on the ground. You can probably manufacture globally, certainly regionally, it wouldn't have to be in-country. Our corporate functions like finance

accounting and legal, a lot of those, pretty much would be centralized in our global. For that matter, these tend to be outsourced of major functions that aren't necessarily strategic to us and critical to get the business done.

- I thought it's not the headquarters because we have, or we had at that time a national organization structure.

- In each country in Europe and there are many, we have a national sales company with a sales group a marketing group with a logistics or supply chain team.

- And then we adjust ourselves.

- On the other hand, especially on the outbound side, with last mile activities, the contact with the consumer we keep in the markets, because the people in the markets they usually want to speak to a local person, not a central person.

- If someone, a customer in France has a question or an appointment or whatever, they want to speak with a French person and not with a German.

- I can lead them into the same European direction, but of course, I need to meet the local requirements and the local things.

- I have quite good communication with the U.S. guys, and with China, and this is more or less based on a personal interest.

- We receive the deployment of the global strategies from the presidents and then we adapt and we select the different priorities; then we link that global strategies and priorities in the region, then adapting the global

strategy to a specific focus to the specific focus areas and priorities in the region.

- In the part of innovation, and we are having the structural design and research design and definition at the global level, and then we have them linked to receive them regionally and to adapt and adjust based on the regional input.

- We have different stages where we get the input from the region, and then the global adopt, adapt that initiative to make sure that it fits regionally and then we receive back the input then based on the design of the input to match the initiative.

- The first stage is that in the region we send the input based on the consumer feedback, the customer understanding based on the design of the initiative, so that there is an input of these things from the region to the globe.

- They deploy having standards with adjustments for the regions with regards to execution.

- Depending on the stages of the projects, and initiatives starting from being very centralized in the beginning, giving the input, but then also we are having much more autonomy in the execution of that.

- The initial stages we are much more globalized, and then the execution of the process we have much more freedom to execute drawing data from the market, in that part, so I'm talking about initiatives that are more

initiatives start from the globe, but the execution adapts basically in the markets and even in the region, or sometimes within the countries.

Node f describes a high level of interaction between the subsidiary and their local context, where knowledge of the market and interaction between local counterparts are seen as key to gain scale in a specific market. There is an expectation on the part of consumers for the same language to be spoken as well as an understanding of cultural specificities and local requirements. These interactions are the basis for a dynamic feedback loop from local operations to regional and global offices and of the adaptation of execution approach in the rollout of global initiatives or products.

7. Node g. Development and Diffusion of Knowledge, Key Statements (3 sources, 39 references):

- Well individual countries, yes, they don't necessarily have to be small, but typically we will pilot things in smaller countries and normally the ideals come about there, and if they prove to be successful then they percolate up. [TNC] is not a top-down kind of company culturally, but more bottom-up. As good ideas grow, the attraction the other people will follow suit.

- It also helps.

- We are a company of companies.

- We're identifying opportunities as to how to drive out loss.

- Now there's more work because you have more analytics than you ever did.

- Not being so reactionary, that's allowed us to be stable.

- We're not fast at times.

- Certainly as we expand in countries, we did have to build those capabilities, and success then follows.

- How to translate operations into process, how to define the process, how to describe a process, how to run the process, and how to develop key people to do that. This is what I learned at [MNC].

- That was a learning on how to do, let's say, transform a fast process into a really speedy process.

- With the headquarters in Osaka, the real big headquarters in Japan, we do not share very much.

- In the past the supply chain group was reporting to local MD, in each country, and the local MD of course was focused only on his country, and then it was nearly impossible to make one European project.

- Some of the national supply chain managers who are very long with the company, some of them are really happy to have the chance to open up their mind to become more European.

- All of the managers have been acting really happy, and acting really hungry for some more cross-functional and more cross-country activities.

- And then we adjust ourselves.

- We are feeding the global headquarter now with ideas.

- We try to harmonize amongst our regions.

- It's more the other way around, we go back to them and say, from our perspective in Europe or in U.S. maybe we would do this, or that, or we

would invest in this, or that, from a supply chain point of view, or even from the product point of view, sometimes it gives them some ideas.

- We have kind of a global logistics committee. This means that the logistics leader of each region of the U.S., China, Europe, and Japan have quarterly meetings in which we shared both ideas and it is how much we can align, or maybe roll out our things globally.

- Let's say any significant IT change or idea, before we do that, we usually align with the U.S. and ask them for their comments. We have an idea for the team. For example, we ask them for their ideas and their experience and the team they are using or if we do any significant change, for example, personnel improvement, and we ask them how they would do that or maybe how they are doing it already.

- I think let's say it's more driven by my personal interest.

- This now gives me now another freedom to think about the future, to think what is the next big step.

- With regards to the strategy of the company, we have every year, we have a strategy meeting which is deployed by the president of the company.

- We receive the deployment of the global strategies from the presidents and then we adapt and we select the different priorities. Then we link the global strategies and priorities in the region, then adapting the global strategy to a specific focus—to the specific focus areas and priorities in the region.

- We are having weekly reviews of innovation.

- We have different stages where we get the input from the region, and then the global adopt, adapt that initiative to make sure that it fits regionally and then we receive back the input then based on the design of the input to match the initiative.

- The first stage is that in the region we send the input based on the consumer feedback the customer understanding based on the design of the initiative, so that there is an input of these things from the region to the globe.

- The globe designs the product innovation and then deploys based on the input that they received from each of the regions, and then global decides on that specific initiative.

- We are sending those ideas to the globe and depending on how replicable that idea is they raise it and then the foundation of global initiative, or they ask each one of the regions to decide if they want to reapply that specific regional idea into each of the regions.

- I think the part of the innovation is coming from the globe, so it's more a centralized organization; it's not coming from one country.

- Always bringing regional results to validate, and then to have experts in the region of that specific competencies and technologies so that they can be self-sufficient in the part of education it is of the technologies and the different things you need to have.

- It's a balance but I would say that the majority of the trend we are having is to have most global ideas being deployed to the rest of the regions to an understanding form each one of the regions.

- I would state that the trend that we are having is to have much more global ideas being deployed to the rest of the regions than from each one of the regions.

- We are moving to a much more centralized organization.

- There is a lot of communication, and interdependency, and reviews that share and apply from the regional hub to the global organization.

- Part of the design and development of the initiative or projects is much more brought from the global than the regional hubs and part of the market. I'm talking about the specific projects and markets and countries from market executions is not really corporate executions adapting the final stages of the project to the initiatives.

- If there is a specific technology or expertise or training, usually we receive that from the globe to the regional hub, and then the regional hub is responsible to share that specific expertise in each of the defined countries.

- Part of the changes we have been implementing in the latest years is to move part of the business unit leadership teams to the Geneva, or to Singapore, or to the different regions, to make sure that we are not just an American company you are deploying, but really a global company in different expertise and knowledge, adapted to different regions.

- Also embracing the differences in each one of the countries' and regions' decision making process starting from part of the leadership team.

Node g describes how the development and diffusion of knowledge is heavily dependent on continuous dialogue between international counterparts across the globe; this is made easy with current telecommunications technology and supported by formal committees, recurring calls, and scheduled management meetings. When knowledge or technologies are developed from the center, there are structured processes to cascade this knowledge down to the local level, through regional structures; also, the regional structures are leveraged to provide input and feedback on strategy and development of new products or technologies. The development and decision to opt for new technologies, as well as the definition of a strategic direction, seem to come mostly from the center, but there is an active feed of input and feedback coming from the regional and local operations; this is critical to increase buy-in and successful local rollouts.

8. Node 1. Positive Comments & Strengths, Key Statements (3 sources, 27 references):

- I'd think we do a pretty good job.
- Well if you look at [TNC], it's one of the only huge companies that's in the Dow Jones and we've been around 476 years. It's because of not being so reactionary that's allowed us to be stable.
- We used to have buyers that were aligned to the business, but what we said is, instead it should be run by spin pools. So we have a whole

collection of buyers who buy just the plastic bottles, regardless of the category that needs them. That was structuring around getting scale, right?

- Interesting.

- I learned how to speed up a supply chain.

- I quickly built trust and this was the base for any further development.

- Yes absolutely. It is quite interesting; some of the people are really happy with the change. Some of the national supply chain managers who are very long with the company, some of them are really happy to have the chance to open up their mind to become more European.

- Now they maybe travel maybe a little bit more and have some more interesting discussions, and I have not heard from none of them really any negatives.

- All of the managers have been acting really happy, and acting really hungry for some more cross-functional and more cross-country activities.

- It is quite easy because we have consolidated everything, and we have centralized, harmonized, and then we are ready, let's say, with that homework, you are ready to answer as a company, but if it is not harmonized and standardized then it is nearly impossible to answer.

- We are feeding the global headquarter now with ideas.

- We try to harmonize amongst our regions.

- Yes, I think that [TNC] is heavily investing in R&D and will continue to do that.

- We try to find out areas of synergies, so maybe we can use the same provider or the same tool or something like that.

- I do have some ideas.

- I think lately it has changed, which I think the last two to three years the region of the company was to have standardized technologies, find the best technologies so we have the technologies; we are moving into the next generation.

- I would state that the trend that we are having is to have much more global ideas being deployed to the rest of the regions than from each one of the regions.

- Depending on the stages of the projects, and initiatives starting from being very centralized in the beginning, giving the input, but then also we are having much more autonomy in the execution of that.

- A restructured thinking on the part agility, and generally skills of the team, but also it is related to productivity.

- It is not like productivity agility and responsiveness to be able to be much more agile in the planning stages of the project and initiatives, and then adapting to the market.

- There is a factor of trying to have much more agility of capital and assets within the company.

- I think one of the key strengths of the company is that they invest a lot in part of research and development.

- There is a lot of communication, and interdependency, and reviews that share and apply from the regional hub to the global organization.

- I think the latest changes in the structure are encompassing much more embracing that concept of agility and transnational global standards and considering the regional or specific local input.

- Part of the changes we have been implementing in the latest years is to move part of the business unit leadership teams to the Geneva, or to Singapore, or to the different regions, to make sure that we are not just an American company you are deploying, but really a global company in different expertise and knowledge, adapted to different regions.

- The intention in the last years has been to be a global company.

- I really think the latest years the changes have been much more pragmatic.

Node 1 lists positive characteristics and strengths of the TNCs represented, including cultural and behavioral as well as business and procedural elements. On the former there is mention of longevity of the TNC, trust, not being reactive, positive attitude towards change, high level of engagement in the part of management teams, agility and responsiveness, adaptability to local markets, communications, and pragmatism. On the latter, deployment of global ideas, continuous improvement, seeking efficiency, gains and process optimization, centralization, consolidation, harmonization, investment in R&D, and development of interdependencies are mentioned.

9. Node 2. Negative Comments & Weaknesses, Key Statements (3 sources, 12 references):

- I would say modest.

- It is hard at times to harmonize and then drive scale because everyone feels that they can do whatever they want.

- Culturally we are not a mandate company whatsoever, which is difficult because we don't have a mandate culture so people have the freedom to do whatever they want.

- It is hard at times to harmonize and then drive scale because everyone feels that they can do whatever they want.

- Our biggest problem, culturally, is speed because everyone thinks they have approval rates because of this very reason we just described.

- The problem is, when one country is exporting someone else's import, once it leaves a country, people don't think about it until it reaches its destination. No one thinks about the in-between, the cost, and the risk; it was out of sight and out of mind. We are very much a destination-centric organization, in the way that we think.

- When I start with [TNC], I said okay, this not really the best structure, because those are many small kingdoms and islands which don't know each other and which don't collaborate and, there is a lot of synergies which we are losing.

- If you only stay in your local camp, there is a limit to the kingdom.

- The result is a different story, because I think [TNC] is quite a conservative company.

- In any case that is not very simple.

- Those are many small kingdoms and islands which don't know each other and which don't collaborate, and there are a lot of synergies which we are losing.

- Europe is really far, and they see Europe as one market, and it's quite difficult to sometimes to just explain that Europe is not Europe. If the Turkish have a different requirement than the Swedish or the Spanish then it's a problem; to them everything is Europe.

Node 2 lists negative comments and weaknesses of the TNCs represented, including, geographic and cultural distance, lack of understanding of local differences in the part of the center, conservative approach, complexity inherent to a large TNC and interdependencies between international operations, speed in decisions and execution, inconsistent buy-in to changes due to resilience to maintaining local autonomy, and missed opportunities.

10. Node 3. Changes Over the Years, Key Statements (3 sources, 47 references):

- I don't think our size is strength, but certainly the speed of business has changed over the last 23 years.

- Communication has grown as well because everything is over the Internet. The expectation of speed is so much higher than it ever was. Furthermore, our analytics is so much bigger than it ever was. We're identifying opportunities as to how to drive out loss.

- Companies have the challenge of a head count reduction and now there's more work because you have more analytics than you ever did.

- We've really only been thinking multinational for the last 15 years, and everything else was domestic.

- We used to have buyers that were aligned to the business, but what we said is, instead it should be run by spin pools. So we have a whole collection of buyers who buy just the plastic bottles, regardless of the category that needs them. That was structuring around getting scale, right?

- I did start as the general manager for the European supply chain but the functionality was totally different.

- I thought it's not the headquarters because we have, or we had at that time, a national organization structure.

- The first thing I did was to bring those supply chain experts together.

- I have established a conference for the supply chain managers for each country so I did bring all those people together, and to get to know each other, to learn, and to benchmark each other, and so on and so on.

- I quickly built trust and this was the base for any further development.

- Bring all of them together in one team from our organizational perspective, so to take them out of the national sales group, to bring them into one European supply chain team, and to consolidate the warehouse and the transport activities.

- The first one was to bring those, the organization into a centrally-grouped European supply chain organization, which is finalized now; it's done.

- We have consolidated the warehouse; now they learned it's not necessary to have in each country a warehouse, so we can reduce from 15 down to five and just central warehouses, which is working now.

- [TNC] in the beginning was a very consumer-driven and consumer-focused supply chain, and we have a lot of other industry business which has been totally independent.

- After the consolidation of the consumer part, now we integrate more and more the industry and the B to B supply chain and this is the further approach of [TNC].

- Yes, it has changed, because in the past the supply chain group was reporting to local MD, in each country, and the local MD of course was focused only on his country, and then it was nearly impossible to make one European project because simply we didn't have any trust.

- Since we moved the local supply chain teams into the European organization so I have all the contacts now, they are reporting to me, and this gives me and gives them the total overview and we can work out common European projects which are much more helpful to drive the innovation in the business.

- They have European task that they never had in the past, and now they maybe travel maybe a little bit more and have some more interesting discussions, and I have not heard from none of them really any negatives.

- Saying okay, I'm not interested in the European task, I want to, let's say to keep my zone of control in my country, and that was quite interesting

because I thought that some of them really will think okay, I have been in this company since 35 years in my country, why I should move? Not specifically move, I'm talking about the mind.

- All of the managers have been acting really happy, and acting really hungry for some more cross-functional and more cross-country activities.

- In some countries we did own the warehouse, and the operation, so this has changed.

- So now we are really without anything.

- Lots of things we said we want to do the value part of the supply chain and we want to outsources, and this is more or less done already, or any kind of operation.

- We are feeding the global headquarter now with ideas.

- Operation, we don't have any assets any more.

- Developments go into not owning any assets.

- I've made, let's say, the last organizational adjustment, it was this year, and since that I think it is now really sustainable.

- The biggest step was to move the reporting line from the national sales company to our company.

- I think there is a lot of change.

- Within the last 10 years, there has been also a restructuring, a new organizational design that we have the global and the regional team totally linked in the part of initiatives, in the part of innovation, and we are

having the structural design and research design and definition at the global level.

- I think lately it has changed, which I think the last 2–3 years the region of the company was to have standardized technologies; find the best technologies so we have the technologies. We are moving into the next generation so that we have local technologies to global standards, so again we are moving technologies core competencies more and more in the last year and on the local supply front local vendors and local technologies to identify if we have best value in some of the regions and we contribute with that to the global platform.

- But changes in the company have been having different technologies based in different regions and they can really embrace, they can understand those centralized strategies, and understating but then coming back to the region.

- I would state that the trend that we are having is to have much more global ideas being deployed to the rest of the regions than from each one of the regions.

- We are moving to a much more centralized organization.

- More like a restructure thinking on the agility part, and generally skills of the team, but also it is related to productivity. An issue of productivity because not necessarily economic but part agility and productivity because at the end sometimes we keep reapplying and reinventing instead of

leveraging global; be more agile in the execution of the projects and initiatives.

- It is not like productivity agility and responsiveness to be able to be much more agile in the planning stages of the project and initiatives, and then adapting to the market.

- There is a factor of trying to have much more agility of capital and assets within the company.

- I think in the past 10 years we have much more dispersed supply change.

- We have had a consolidation even in the part manufacturing.

- We have consolidation trying to adjust one, two depending on the categories, and the regions having performed in the last 10 years.

- We have dispersed assets in each one of the countries; the focus is not much more a balance to have medium to big size assets updated to support whole region, but also thinking of having the centralized team closer to these facilities.

- I think the latest changes in the structure are encompassing much more, embracing that concept of agility and transnational global standards and considering the regional or specific local input.

- Part of the changes we have been implementing in the latest years is to move part of the business unit leadership teams to the Geneva, or to Singapore, or to the different regions, to make sure that we are not just an American company you are deploying, but really a global company in different expertise and knowledge, adapted to different regions.

- The intention in the last years has been to be a global company.

- I really think the latest years the changes have been much more pragmatic.

- Moving divesting within the different regions.

- Also embracing the differences in each one of the countries and regions decision making process starting from part of the leadership team.

Node 3 lists factors that are seen as having changed over the years at the TNCs represented, including elements related to business environment and others related to companies' strategy and internal decisions.

The former includes speed of business, amount and usage of new technologies, increased amount of information and analytics, high amount of change, and increased business-to-business transactions. The latter includes the increased size of TNCs, search for reductions of costs, assets and personnel, optimization of supply chain models and procurement practices, reduction of providers, shift from domestic to international thinking, consolidation and regionalization of assets and capabilities, shift from autonomous country structures to strong regional functional structures, willingness to change and embrace new business practices, standardization of technological platforms, speed and agility in execution and utilization of assets, internationalization of leadership teams, strategy and design driven at the center, and execution and localization driven regional and locally.

11. Node 4. Remains an Enduring Characteristic, Key Statements (3 sources, 17 references):

- [TNC] is not a top-down kind of company culturally, but more bottom-up.

- Culturally we are not a mandate company whatsoever.

- Well if you look at [TNC], it's one of the only huge companies that's in the Dow Jones and we've been around 476 years. It's because of not being so reactionary that's allowed us to be stable.

- Yes, I think that [TNC] is heavily investing in R&D and will continue to do that.

- They prefer to make the research really down to the last step, and not open to take any risks, maybe even preferring to follow a new development rather than to be the leader.

- That is this company.

- Core competencies and capabilities we try or we already do that centralized.

- We still have the national supply chain team, despite they are reporting to center, but they are sitting in their countries.

- I think there is not very much interaction, as I already said this, but give us some business direction and then it's up to us how to do it.

- Because [TNC] sees itself as a manufacturing company, and so the manufacture sides are somehow protected or at least they are leading somehow our decisions.

- As soon as we need to go back to Japan, it is more difficult for a non-Japanese person to do that; that is why we have some Japanese people within our organization who act as a kind of a window to that.

- In any case that is not very simple.

- Europe is really far, and they see Europe as one market, and it's quite difficult to sometimes to just explain that Europe is not Europe. If the Turkish have a different requirement than the Swedish or the Spanish, then it's a problem; to them everything is Europe.

- I have quite good communication with the U.S. guys, and with China, and this is more or less based on a personal interest.

- In the part of innovation, and we are having the structural design and research design and definition at the global level, and then we have them linked to receive them regionally and to adapt and adjust based on the regional input.

- I think the part of the innovation is coming from the globe, so it's more a centralized organization; it's not coming from one country.

- Always bringing regional results to validate.

Node 4 lists factors that are seen as remaining enduring characteristics of the TNCs represented, including dynamic interactions between the bottom and top of the organization, continuous investment in R&D, centrally-driven innovation R&D, local validation and localization, global functional organizations, complexity of large TNCs, distance between the center, and local specificities.

Issues encountered during the interviews and overall observation. The plan for this research was to complete five interviews to TNC N-2 and N-3 executives with sufficient experience to discuss their observations as they pertain to the prevalence of key elements to the TNC model since 2008. The researcher was able to obtain three qualified interviewees after lengthy efforts that were mostly hindered by strict communications and

disclosure policies within large MNCs. In several instances, potential interviewees accepted enthusiastically the opportunity to contribute to this research but had to withdraw as late as hours before the schedule time, because they were not able to obtain the appropriate clearance from their organization's human resources or communications departments. These restrictions were sustained, even when it was made clear that the interviewee and the organization were to be kept confidential for the purposes of this dissertation.

There were expected inconsistencies between the three interviews, due to the semi-structured nature of the approach; however, this allowed for more open discussions that led to a sufficient amount of pertinent responses and insight. One interview took longer than the other two; the interviewee had graduate level college education, had done preliminary research, and was actively engaged in the discussion. The second interview was insightful but much shorter, since the interviewee's communications style delivered short and succinct responses. Finally, the third interviewee presented understanding and transcription challenges since the interview was conducted in English via a non-crisp telephone connection.

Finally, all interviewees were motivated to take part in the interview. They were eager to showcase their organization's characteristics, expectedly focusing mostly on the positives, and they addressed areas of improvement, mostly in the context of sharing concrete improvement programs that are already in place.

Analysis of nodes by number of coded references. Figures 102–104 show the frequency of coded references by nodes, separated by the seven nodes representing TNC characteristics, nodes representing positive comments and strengths and negative

comments and weaknesses of TNCs, and nodes representing comments regarding

changes over the years and enduring characteristics of TNCs.
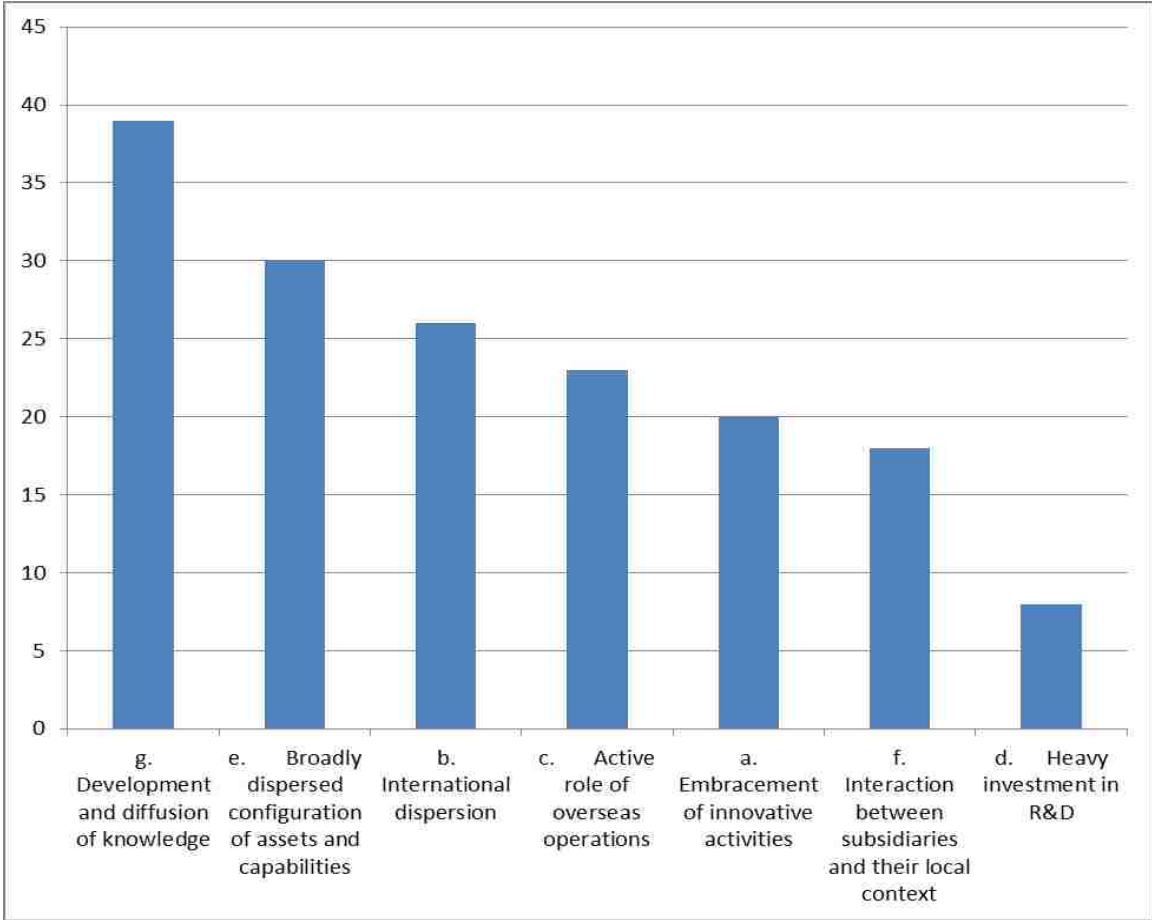
TNC characteristics nodes by number of coded references	Number of observations
g. Development and diffusion of knowledge	39
e. Broadly dispersed configuration of assets and capabilities	30
b. International dispersion	26
c. Active role of overseas operations	23
a. Embracement of innovative activities	20
f. Interaction between subsidiaries and their local context	18
d. Heavy investment in R&D	8

Figure 102. TNC characteristics nodes by number of coded references, bar chart.
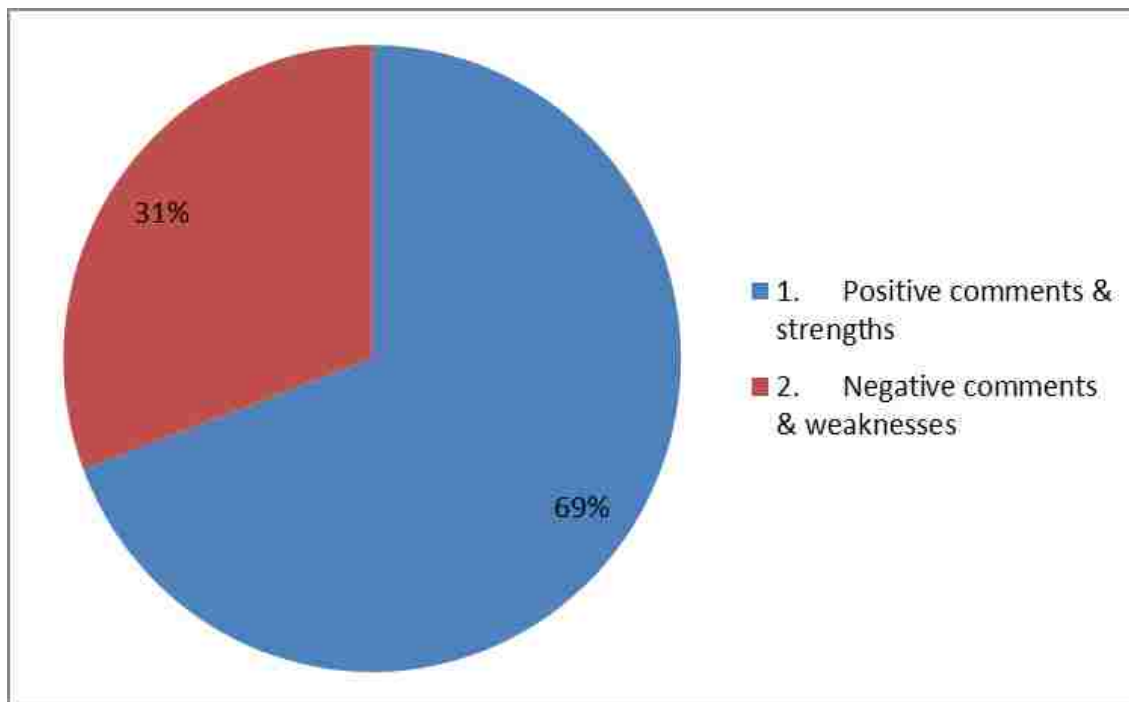
TNC positive and negative nodes by number of coded references	Number of observations
1. Positive comments & strengths	27
2. Negative comments & weaknesses	12

Figure 103. TNC positive & strengths and negative & weaknesses comments by number of coded references.
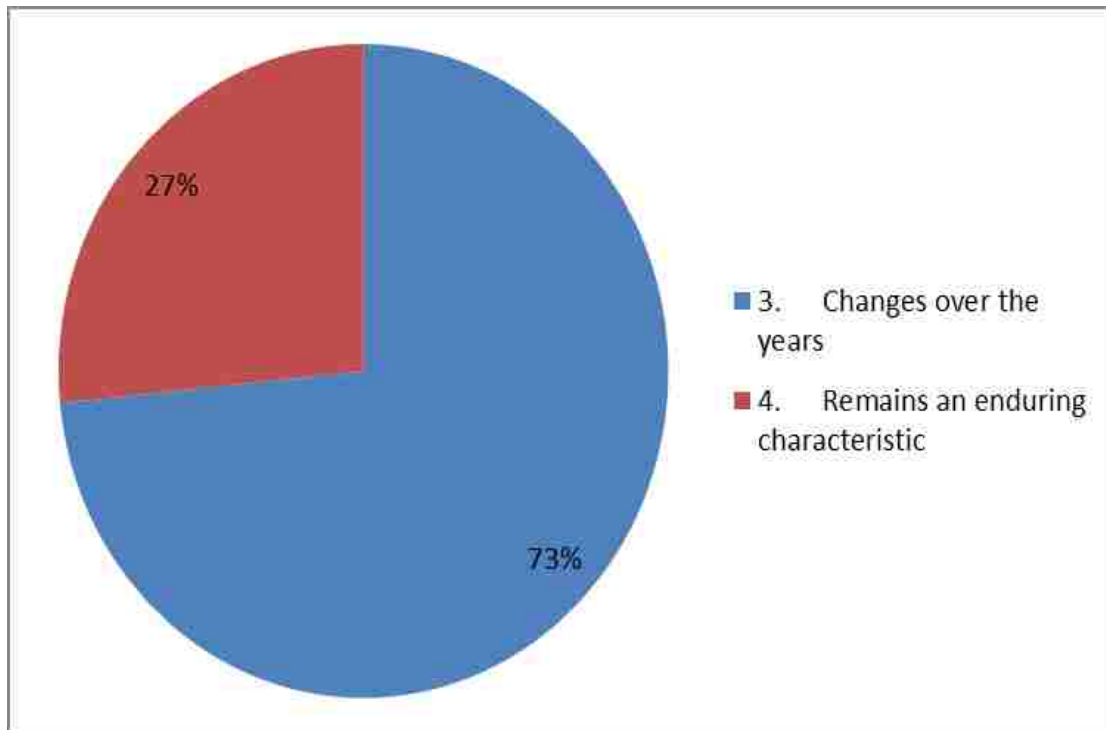
TNC changes and enduring characteristics nodes by number of coded references	Number of observations
3. Changes over the years	47
4. Remains an enduring characteristic	17

Figure 104. TNC positive and negative comments by number of coded references.

Figure 102 shows that the top two nodes with the most amount of input from the interviewees are g. Development and diffusion of knowledge and e. Broadly dispersed configuration of assets and capabilities, with 39 and 30 coded comments respectively. Figure 103 shows the majority of comments that were coded to Positive & strengths and Negative & weaknesses were positive, with 69% as it relates to characteristics of the TNCs represented in the interviews. Figure 104, shows comments that were coded to characteristics to TNCs changing over the years outweighed those coded to remaining an enduring characteristic, with 73% and 27% respectively.

Word frequency query of 50 most frequently used words. A word frequency query was run to identify the 50 most frequently used words, when aggregating the responses from all three interviews. In order to have more meaningful information, only words with four or more characters were included, and similar words were grouped when possible; the frequency percentage calculation was therefore made with the weighted average of similar words.

Table 47

TNC Executives' Interviews, Most Frequently Used Words Query—Responses Only

Word	Length	Count	Weighted %	Similar Words
Regions	7	72	1.84	region, regional, regionally, regions
Think	5	62	1.58	think, thinking, thinks
More	4	55	1.40	more
Company	7	55	1.40	companies, company
Global	6	53	1.35	global, globalized, globally
Years	5	40	1.02	year, years
country	7	38	0.97	countries, country
different	9	35	0.89	differences, different, differently
supply	6	34	0.87	supply
chain	5	31	0.79	chain, chains
initiatives	11	29	0.74	initial, initiates, initiation, initiative, initiatives
organization	12	29	0.74	organization, organizations, organized
part	4	26	0.66	part
which	5	25	0.64	which
change	6	23	0.59	change, changed, changes
development	11	20	0.51	develop, developed, development, developments
strategy	8	20	0.51	strategies, strategy
work	4	20	0.51	work, worked, working, works
maybe	5	19	0.48	maybe
things	6	19	0.48	thing, things
europe	6	18	0.46	europe
ideas	5	18	0.46	idea, ideas
last	4	18	0.46	last
team	4	18	0.46	team, teams
also	4	17	0.43	also
local	5	17	0.43	local, localization
other	5	17	0.43	other
technologies	12	17	0.43	technologies, technology
want	4	17	0.43	want
about	5	16	0.41	about

(continued)

Word	Length	Count	Weighted %	Similar Words
european	8	16	0.41	european
headquarters	12	16	0.41	headquarter, headquarters
just	4	16	0.41	just
market	6	16	0.41	market, marketing, markets
moving	6	16	0.41	move, moved, moving
people	6	16	0.41	people
need	4	15	0.38	need, needs
quite	5	15	0.38	quite
well	4	15	0.38	well
executions	10	15	0.38	execute, execution, executions
specific	8	15	0.38	specific, specifically
business	8	14	0.36	business, businesses
centralized	11	14	0.36	central, centralize, centralized, centralizing, centrally
product	7	14	0.36	product, productivity, products
those	5	13	0.33	those
very	4	13	0.33	very
based	5	13	0.33	base, based
design	6	13	0.33	design, designs
innovation	10	13	0.33	innovation, innovative
having	6	12	0.31	having

Figure 105. TNC executives' interviews, most frequently used words query, responses only, tag cloud graphic.

The Tag Cloud graphic is a visual representation of the query of most frequently used words; it helps identify words that may relate to recurring themes during the interviews. Words such as *regions*, *more*, *different*, *years*, *chain*, and *initiatives* are discussed in Chapter V.

Chapter Summary

This chapter presented and described the results from both the quantitative and qualitative portions of this research, with the quantitative portion of the study having dominant status over the qualitative portion. Regarding the quantitative data results, a positive relationship between MNCs having successfully applied the TNC model as per Bartlett and Ghoshal (1989) and stronger financial performance when compared to other MNCs could not be established. There was no statistical difference in financial performance in the case of share price, gross margin, EBITD, and EBITD/REV ratio, while it could not be established whether the relationship existing between TNCs and MNCs in the cases of revenue and return on sales performances was positive or negative.

This was followed by the presentation of the content from three semi-structured interviews to N-2 and N-3 TNC executives; the data was coded to 11 nodes, including seven characteristics of TNCs. The possible relationships between the comments that were coded, the frequency of coding to each node, the word frequency, and the results of the quantitative portion of study are discussed in Chapter V.

Chapter V

Summary and Conclusions

Bartlett and Ghoshal (1988) stated the following:

The transnational company seeks efficiency not for its own sake, but as a means

to achieve global competitiveness. It acknowledges the importance of local

responsiveness, but as a tool for achieving flexibility in international operations.

Innovations are regarded as an outcome of a larger process of organizational

learning that encompasses every member of the company. This definition of the

issues allows managers of the transnational company to develop a broader

perspective and leads to very different criteria for making choices. (p. 68)

As outlined in Chapter I, the primary objective of this study was to answer the

following research question: Do organizations that were defined as having successfully

adopted the transnational model, as per Bartlett and Ghoshal (1989), and labeled as

transnational companies (TNC), perform significantly better than other multinational

companies (MNC) when going through radical transformation processes? This study

proposed that the financial performance of TNCs is positively correlated to having

successfully applied the TNC model as per Bartlett and Ghoshal (1989) and that some of

the seven characteristics of TNCs reviewed in this study are prevalent in these

organizations and have had a positive role in driving better financial performance. The

years 2008–2011 were used as reference of a radical change period, since all MNCs were

impacted by the global financial recession. The research model described in Figure 1 was

tested using financial performance data from six TNCs (see Table 6) and 20 other MNCs

(see Table 7) all grouped into three sectors (see Table 8). Three semi-structured interviews were conducted with N-2 & N-3 TNC executives.

The purpose of this chapter is to discuss, interpret, and summarize the empirical results presented in Chapter IV. This chapter is organized in five sections. The first section is the discussion of results from both the quantitative and qualitative portions of the study. The second section addresses both the conceptual and practical implications of this study. The third section is a review of the limitations of this study. In the fourth section, other findings are presented relative to possible relationships between elements of the TNC model and financial performance in a time of radical change. Finally, in the fifth section, possible directions and ideas for future research are recommended based on the findings and discussions in this study.

Discussion of Results

This research followed a mixed method research design in which the quantitative element is dominant over the qualitative element, as shown in Figure 3. To address the former, a positive relationship between MNCs having successfully applied the TNC model as per Bartlett and Ghoshal (1989) and stronger financial performance when compared to other MNCs could not be established, since there was no statistical difference in financial performance in the case of share price, gross margin, EBITD, and EBITD/REV ratio. Even though it was found that there is a statistically significant relationship between TNCs and MNCs in the cases of revenue and return on sales performance, it could not be established whether this relationship is positive or negative.

A positive or negative relationship between financial performances of TNCs versus MNCs could not be established because of significant differences among the sample of MNCs. These differences precluded significant findings stemming from statistical analyses performed with both revenue and return on sales data, with the exception of the probability plot, which, in both cases, shows that the data sample is normal. In both the case of revenue and return on sales performance for MNCs, the one-way ANOVA test shows that means are statistically different, the performance trend lines are different, and the box plot and test for equal variances shows that standard deviations are different and data dispersion is high. Furthermore, there were significant statistical differences among TNCs' return on sales performance, where the one-way ANOVA test shows that means are different, the performance trend lines are different, and the test for equal variances shows that standard deviations are also different.

The qualitative portion of the study gathered feedback from executives of TNCs and focused on questions regarding seven elements of the TNC approach; the semi-structured interviews provided verbal input to the discussion on the prevalence and impact of the TNC model in MNCs. Findings showed that several of the TNC characteristics were present in the TNCs, but none of the interviewees had any knowledge of the TNC approach or that their organizations were considered a TNC according to the research of Bartlett and Ghoshal (1989).

The seven elements of TNCs, as per Bartlett and Ghoshal (1989), are embracement of innovative activities, international dispersion, the role of overseas operations, heavy investment in R&D, the configuration of assets and capabilities, the interaction between subsidiaries with their local context, and the development and

diffusion of knowledge. From this list, the elements of the TNC model that were observed in TNCs include the fact that large innovation activities that require significant efforts and investment are typically driven by the parent company at the global headquarters, as the interviewees expressed: "The globe designs the product innovation, and then global decides on that specific initiative;" "They prefer to make the research really down to the last step and are not open to take any risks, maybe to even prefer to follow a new development rather than to be the leader." Innovation activities that have a limited regional or local impact are initiated by the regions or the local operations, as stated by one interviewee: "We try to harmonize amongst our regions, and then go into the global headquarters and ok, we standardized processes in Europe and the U.S., and maybe it makes sense to roll it out globally."

Deployment is driven by the regional offices and the countries, allowing for localization; and feedback is gathered at the regional level and fed back to the central offices, according to one executive interviewed: "We are having the structural design and research design and definition at the global level, and then we have them linked to receive them regionally and to adapt and adjust based on the regional input."

This points to a structured and consistent interaction approach between central office and local operations and drives buy-in for innovative activities while creating a dynamic feedback system between the headquarters and overseas operations. Executives point to their organizations as being the following: "definitely innovative," "not so reactionary," "gives them the total overview and we can work out common European projects," and "helpful to drive innovation in the business." Executives point to their

managers as being "really hungry for some more cross-functional and more cross-country activities."

Nevertheless, there also seem to be limitations to the flow of information within the TNC. Market and cultural differences make certain innovation proposals and localization discussions challenging. Interviewees stated that "it's quite difficult to sometimes just explain that Europe is not Europe . . . to them everything is Europe," and that "it is difficult for a non-Japanese person to do that." Deployment of innovation allows for localization and is channeled through the regions into the countries, as the interviewees in one TNC expressed: "The structural design and research design and definition at the global level, and then we have them linked to receive them regionally and to adapt and adjust based on the regional input;" "The specific projects and markets and countries from market executions are not really corporate execution."

The interviewees expressed that having a large amount of assets can be viewed as a challenge rather than a strength: "We have it spread all over;" "We are a company of companies." The interviewees also expressed that the tendency is to reduce the number of operational sites through consolidation, centralization, or outsourcing: "I think in the past 10 years, we had much more dispersed supply chain;" "We have consolidated the warehouses, now they learned; it's not necessary to have in each country a warehouse so we can reduce from 15 down to five and just central warehouses, which is working now." The tendency is to reduce the number of assets is also extended to non-core capabilities, as further expressed by one interviewee: "Any functions which we can centralize from a supply chain point of view, a lot of functions like reports, audit, late payment reporting, KPIs, even import management which we can consolidate and we can put together into

one group, we are centralizing." In some cases, outsourcing is applied as a broad-scoped

solution to reduce assets, according to another interviewee: "The European standard, we

do not want to own any assets, so we have outsourced all the transport fleet that we had

in the past, all the warehouses assets, etc. and everything, so now we are really without

anything."

In summary, the quantitative portion of this study showed a statistically

significant relationship between TNCs and MNCs in the cases of revenue and return of

sales performance, although it could not be established whether this relationship was

positive or negative. Meanwhile the qualitative portion of this study showed that several

of the TNC characteristics were present in the TNCs whose executives were interviewed;

this including, the embracement of innovative activities, international dispersion, the role

of overseas operations, and the interaction between subsidiaries with their local context.

Contributions of the Study

This study provides contributions for academics as well as executives of TNCs

and MNCs; since there is little recent literature on the TNC model, some of the common

practices observed, specially through the qualitative portion of this study, are pertinent to

provide guidance on current trends such as centralization and outsourcing and

demonstrate how this is viewed as a successful practice by executives from well-

established TNCs. Additionally, it further demonstrates that there is limited value in

attempting to find a single reason for the success or failure on an MNC in the long term;

any such conclusion should be drawn by assessing various internal and external factors

and combining hard data with qualitative input from insiders. This is the first known

study that discusses the impact and success of the TNC management approach in the context of a period of radical change, close to 25 years after the Bartlett and Ghoshal (1989) research; therefore, it extends the body of knowledge on MNC and TNC drivers of financial performance in the context of periods of radical change.

Conceptual Implications

From a theoretical perspective, this study contributes to supporting the value of using mixed methods designs in academic research related to international business and management. The combination of quantitative and qualitative research methods are described by Jogulu and Pansiri (2011) as "a profoundly comprehensive technique for research in social sciences through integration of thematic and statistical data" (p. 688), where the qualitative portion of the research allows for further explanation and validation of the results coming from pure quantitative analysis. In this research, the results from the quantitative portion are inconclusive in linking the adoption of the TNC model with financial performance when compared to other MNCs. Furthermore, it does not provide any insight in understanding which elements of the TNC model are still present in these organizations and how they contribute to management practices and decisions. Therefore, even if the quantitative analyses would have shown a positive correlation between the adoption of the TNC model and strong financial performance, without the complement of qualitative research, it would not be possible to assess the contribution of business practices belonging to the TNC solution to these results.

From a quantitative research point of view, the utilization of the binary logistic regression as a statistical test to assess the relation between the financial performances of

TNCs as opposed to MNCs proved easy to apply and successful when combined with the

one-way ANOVA test for normal data samples and the two-sample Mann-Whitney and

Kruskal-Wallis tests for nonparametric data samples. In those cases where the findings

from nonparametric testing were different than that of binary logistic regression or the

one-way ANOVA tests, the former conclusions were adopted. The additional descriptive

analysis among individual TNCs and individual MNCs annual performance data was

useful to determine the difference among MNCs and the relative similarities among

TNCs, despite there being differences in industry, country of origin, and stock market

where shares are traded.

Practical Implications

The sample of TNCs used for this research are all recognizable names and large

organizations that have significant market presence in various countries; they have been

in business for an average of 126 years, generating $395 billion in annual revenue and

employing 920,000 employees (see Appendix F, revenue and employee figures from

2011). Therefore, insight on practices related to seven elements of TNCs as per Bartlett

and Ghoshal (1989) provide guidance that can be used by executives of MNCs from

varied industries, countries of origin, and international dispersion.

In addition to the commonalities among TNCs identified from the in-depth

interviews, the executives interviewed point to the importance of the following:

developing trust, not being reactive, having a positive approach towards change, having a

high level of engagement on the part of management teams, demonstrating agility,

responsiveness, and adaptability to local markets, and focusing on communication and

pragmatism as common strengths in each of their organizations. Changes and decisions

that these organizations have made in the last 10 years show a clear strategic intent to

move into similar business models when it comes to adopting the previously-mentioned

characteristics and behaviors, as expressed by one interviewee: "Part of the changes we

have been implementing in the latest years is to move part of the business unit leadership

teams to Geneva or to Singapore or to the different regions, to make sure that we are not

just an American Company you are deploying; but really a global company with different

expertise and knowledge, adapt [adaptability] to different regions."

Limitations of the Study

The primary limitation of this study is the small sample of TNCs available, since

the Bartlett and Ghoshal (1989) research exemplifies a finite number of organizations

whose characteristics fit their proposed management approach; only six TNCs could be

used for this study. Additionally, as shown in Appendix F, the six TNCs used in this

research belong to three different sectors (technology/consumer electronics, consumer

goods, and technology/telecommunications), have four different countries of origin

(United States, The Netherlands, Japan, and Sweden), and are traded in four different

stock exchanges (NYSE, Amsterdam Euronext, Nordic Stock Exchange, and Tokyo stock

exchange). When aggregating TNC data, the one-way ANOVA test showed P values >

0.05 for four of the six financial performance indicators tested, the probability plot

showed the data from all six was normal, data dispersion was low for four, and standard

deviation was different for four; each test was impacted, in most cases, by one major

outlier. Running the statistical analyses without the outlier value was not feasible since

the outlier TNC was not the same for all financial indicators; and, for consistency

purposes, MNC outliers would have also had to be removed, thus invalidating the

objective nature of statistical analysis. This raises the question of understanding what

external factors are also affecting the financial performance of certain organizations and

points to conclude that the commonality of the global financial recession that started in

2008 was not sufficiently dominant to outweigh industry, market, and internal factors that

have affected each organization in different ways.

A related limitation is that significant events, specific to each sector and each

organization, are the sources of the most intense financial performance variations in most

of the TNCs and MNCs researched. Events such as divestitures, mergers and

acquisitions, product launch failures and successes, service failures, and compliance and

regulatory issues drive sharp single year variations in performance, which, regardless of

sample size, make it a challenge to draw conclusive findings from a purely quantitative

analysis. This is shown by the results of aggregated TNC and MNC data, where financial

performance data from 26 organizations showed a probability plot with nonparametric

data in five of six indicators tested, and the test for equal variances resulted in statistically

different standard deviations in four of six indicators.

One example of industry-specific impact on company performance is the highest

increase in average share price value among the 20 MNCs sampled, was for Apple Corp.

This occurred between 2007 and 2011 after the launch of the iPhone in 2007 (see

Appendix G), and is in comparison with the lowest mean value share price performance

of RIMM, whose Blackberry Smartphones were directly impacted by Apple's

innovations (see Appendix G). Other industry or company-specific events that had a

major impact on financial performance which outweigh the effects of the global financial

recession, include Toshiba exiting the DVD business in 2008 due to the dominance of the

Blue Ray technology, HP's strategic decision to drop the tablet and smartphone

businesses in 2011, the SEC fines to Johnson & Johnson due to a bribery scandal and

harmful chemicals being found in some of their products in 2011, and the $69.5 billion

loss posted by Vonage after Sprint won a large scale patent case in 2007 (see Appendix

G).

Other Findings

The fact that the quantitative portion of this study could not point to a conclusive

validation that the application of the TNC approach leads to better financial performance

when an organization is going through a period of radical change, and the significant

statistical differences among MNCs and TNCs, suggests that there are other factors that

drive financial performance. It challenges the feasibility of either isolating the impact of a

single element on an organization's performance or assessing the validity of a

management approach solely based on financial performance.

For instance, the TNC executives interviewed represent large TNCs that have

grown significantly since the Bartlett and Ghoshal (1989) study; this growth has been in

part by acquisitions, according to one interviewee: "We grow through acquisition and

divestitures, so that continues to always be a problem." As quoted by the executives

interviewed, this creates particular challenges related to asset management practices

("Partially we are still owning assets like buildings, but in some countries we are totally

out, in some countries not, that depends more on our local or regional situation"), speed

and decision making ("Culturally we are not a mandate company whatsoever, which is difficult because we don't have a mandate culture so people have the freedom to do whatever they want," "Our biggest problem culturally, is speed because everyone thinks they have approval rates"), and standardization ("It's hard to harmonize the drive scale because everyone feels they can do whatever they want").

The quantitative data showed that, share price and revenue performance of all six TNCs is consistent across all statistical tests performed; but this is not the case for gross margin, return on sales, EBIT, and EBIT/REV ratio performance for TNCs, nor is it the case for any of the six financial indicators in the comparison of 20 MNCs. Specifically, the result for the TNCs' share price and revenue performance show the one-way ANOVA test with a P value < 0.05, the means are statistically similar as well as the performance trend lines, the probability plot indicates the data sample is normally distributed, the test for equal variances using the Bartlett test show a P value < 0.05, the standard deviations are similar, and the data dispersion is low. Interestingly, the revenue performance is a direct consequence of the commercial performance of an organization, while the share value price is a direct consequence of the volume of shares traded in the stock market, both being driven by external stakeholders—consumers and investors. On the other hand, gross profit, return on sales, and EBIT are indicators impacted by a long list of factors driven by management decisions and one-time events, such as bad debt write-offs, capital investments, mergers and acquisitions, divestitures, assets, and cash management, which makes the comparability among organizations difficult.

The analysis of qualitative data showed an unexpected finding, which relates to the importance of regions and regional offices in TNCs, where the word "regions" was

the most used word in all interviews; this includes grouping of similar words such as

"region, regional, regionally and regions" (see Table 47). The transitional solution

proposed by Bartlett and Ghoshal (1989) discusses the dynamics between global offices

or headquarters, and local offices or national operations; the regional office as a bridge

between global and local, with a prominent role in communications, decision making,

while the development of knowledge, innovation, and control is not considered.

For instance, from a top down view, the executives interviewed point to regions

and regional offices as having a key role in innovation and localization of global

solutions: "In the part of innovation, we are having structural design and research design

and definition at the global level; and then we have them linked to receive them

regionally and to adapt and adjust on the regional input;" "The globe designs the product

innovation and then deploys based on the input that they received from each of the

regions, and then global decides on that specific initiative;" "We are having the structural

design and research design and definition at the global level; and then we have them

linked to receive them regionally and to adapt and adjust based on the regional input."

From a bottom up view, interactions between countries are being replaced by interaction

and knowledge transfer between regions, according to one interviewee: "We try to

harmonize between regions, and then go into the global headquarters and say ok, we

standardized processes in Europe and the U.S. and maybe it makes sense to roll it out

globally."

TNCs are consolidating country operations under regional structures, as stated by

the executives interviewed: "We had at that time a national organization structure;"

"Bring all of them together in one team from our organizational perspective, so to take

them out of the national sales group, to bring them into one European supply chain team and to consolidate the warehouse and the transport activities." The region is taking an intermediary role, where direct interactions between the headquarters and the countries is viewed as more effective, as further stated by the interviewees: "I'd say, there is much more possibility of the regional level to share the capabilities and the strategies and development so, the region is then responsible to take the global expertise and then distribute into each one of the countries and each one of the organizations within the region;" "We have kind of a global logistics committee; this means that the logistics leader of each region of U.S., of China, Europe, Japan, and we have quarterly meetings, in which we shared both ideas and it is how much we can align, or maybe roll out our things globally."

The increased importance of the region and regional organizations seems to be a conscious evolution in the part of TNCs, according to the interviewees, in order to increase their adaptability to local markets: "Part of the changes we have implemented in the latest years is to move part of the business unit leadership teams to Geneva, or to Singapore, or to the different regions, to make sure that we are not just an American company you are deploying, but really a global company in different expertise and knowledge, adapting to different regions;" "With the new European setup it is quite easy because we have consolidated everything."

Recommendations for Future Research

Results from the quantitative portion of the study suggest there are several industry- and market-specific factors that have an overwhelming effect on the financial

performance of an organization, overshadowing the impact of the global financial recession that started in 2008. The presence of clear outliers in the descriptive analyses among individual TNCs' and individual MNCs' annual financial performance, and the fact that technology companies show recurrent and drastic one-year swings in performance, provides an avenue of future research seeking to isolate the factors that drive financial performance swings in organizations within a single sector. Further research using a longitudinal research design can be done to map performance variations over a longer period of time in combination with strategic content analysis.

Another area of future research is to study the consistency in share price and revenue performance among TNCs as a differentiating factor when compared to other MNCs. This would open the door to discuss whether financial indicators that are directly impacted by consumer or investor behavior are a better indicator of an organization's long-term performance from a regression analysis point of view. Especially when compared to other financial indicators, such as gross margin, return on sales, EBIT, and EBIT/REV ratio, whose performance are also influenced by internal management decisions, and therefore may suffer more short term fluctuations.

Future research also could seek to understand the increasingly predominant role of regions and regional offices in the organizational model of multinationals. The qualitative portion of this study points to a change in operational definitions, where what used to be referred to as local is now regional, and centralization is not global but regional. Interactions between the headquarters and regions have increased, as well as collaboration and innovation among regions, while country organizations seem to be

increasingly removed from the global headquarter, and nationalization remains prevalent only as it pertains to direct customer interactions.

Another potential area of future research is to conduct an assessment of the long-terms effect of a radical transformation process in the operating model of a multinational organization and in accelerating certain changes in processes, priorities, and business models. This research focused on financial indicators from 2008–2011, during the global financial recession; the long-term effects of this recession and how organizational models emerge from it is unclear. The analysis of comments from the in-depth interviews referring to TNC changes and enduring characteristics nodes show that 73% of coded references speak of changes over the years, while 69% of TNC positive and negative nodes coded references refer to positive comments and strengths. This suggests that the executives interviewed have an overall positive perception of their organizations, while indicating that many things are changing or evolving. The two TNC characteristic nodes that generated the most coded references are development and diffusion of knowledge and broadly dispersed configuration of assets and capabilities, indicating the areas of research to understand the evolution of multinationals after global financial recession.

Another important area of research is to better understand what makes some companies more successful than others. Bartlett and Ghoshal (1989) stated that "to compete effectively, a company had to develop global competitiveness, multinational flexibility, and worldwide learning capability simultaneously" (p. 18); this statement seems to remain true 25 years later, and the input from the in-depth interviews points to the fact that TNCs seek to develop in all three areas. Meanwhile, the inconclusive findings in both the quantitative and qualitative portions of this study show there is no

single financial indicator or management model that can be deemed the key success factor of an organization, not that it can be replicated and ensure the success of other organizations. Therefore, the precursor to further research in understanding what makes some companies more successful than others may be to understand what are the correct questions to ask, and what may be the common motivators or goals of successful organizations.

Finally, other correlations between the performances or multinationals and internal or external variables could be studied using the mixed method research model proposed in this study or any combination of qualitative and quantitative research, as shown in Figure 3. For example, the effects of important events in an organization, such as the launch of a new product or a large scale acquisition, could be studied in the context of the impact this may have on major competitors.

Chapter Summary

This chapter discussed and interpreted the empirical results presented in Chapter IV. Although only two of the six original hypotheses related to the relationships between Revenue and Return on Sales performance and the successful application of the TNC model were accepted, it was not possible to determine whether the relationship existing between the variables was positive or negative. Further analysis indicated that, when analyzing TNCs among themselves, two of the financial indicators—Revenue and Share Price Performance—mostly influenced by external stakeholders, showed consistent results across all statistical tests performed. Meanwhile, the application of a mixed research method added concrete examples of elements of the TNC model that are

prevalent in large multinationals; this opens the door for future theoretical and practical

advancements in the area of international business.

Appendix A

Interview Protocol

Interview Protocol
Executives with Management Roles at MNCs

Organization: _____

Interviewee name: _____

Interviewee role: _____

Interviewer: Alejandro Palacios

Date:

Location:

Time started: Time ended: Total duration:

Survey Section Used:

_____ 0: Interview protocol and introduction

_____ 1: Interviewee background

_____ 2: Discussion about elements of TNCs

_____ 3: Transnational approach

_____ 4: Closing comments

Other Topics Discussed:
_____
_____
_____

Documents Obtained:
_____
_____
_____

Post Interview Comments or Follow Up:
_____
_____
_____

Executives with Management Roles at MNCs
Introductory Protocol

To facilitate our note-taking, we will audio tape our conversation today. For your information, only researchers on the project (Alejandro Palacios and Dr. Barry Barnes) will have access to the tapes which will be kept in a secure location and destroyed 36 months after this interview has taken place. I know that you have already signed the release form devised to meet the Institutional Review Board (IRB) requirements. Essentially, this document states that: (1) all information will be held confidential, (2) your participation is voluntary and you may stop at any time if you feel uncomfortable, and (3) we do not intend to inflict any harm. Thank you again for your agreeing to participate.

We have planned this interview to last no longer than two hours. During this time, we have several questions that we would like to cover. If time begins to run short, it may be necessary to interrupt you in order to push ahead and complete the line of questioning.

Introduction

You have been selected to speak with us today because you have been identified as someone who is or has been an executive at one of the organizations that were identified by Bartlett and Ghoshal (1989) as having successfully implemented the transnational model. And you potentially have sufficient exposure to your organization's strategy and its implementation to provide pertinent insight to the research question.

This research study will answer the question: Do organizations that were defined as having successfully adopted the transnational model, as per Bartlett and Ghoshal (1989), and labeled as transnational companies (TNC), perform significantly better than other multinational companies (MNC) when going through radical transformation processes?

This research question will be answered through what is called a mixed method research design. The first part uses a quantitative research approach and evaluates the financial performance of TNCs selected from the Bartlett and Ghoshal (1989) research, using publicly available data sources. The second part uses a qualitative approach to answer the question, "What's happening now, 25 years later?" through five in-depth interviews. The outcome of our conversation will be analyzed to discuss the contribution of the characteristics of TNCs to the performance of your organization and its capacity to successfully go through radical transformation processes (such as the recent global economic recession).

As background to our discussion, TNCs would have differentiated elements, such as:
a- The embracement of innovative activities
b- International dispersion
c- Active role of overseas operations
d- Heavy investment in R&D
e- Broadly dispersed configuration of assets and capabilities
f- Interaction between subsidiaries and their local context
g- Development and diffusion of knowledge
We will explore each of these during our conversation.

This study aims to showcase what some successful multinationals have done well that may be useful to other organizations. Therefore it is expected that this interview be a positive experience for both the researcher and the subjects; furthermore, the findings are expected to constitute practical and applicable learning for a broad base of multinationals, in a time where 'change is the only constant'.

1. Interviewee Background

How long have you been…

_____ in your present position?

_____ at this organization?

Interesting background information on interviewee:

What is your area(s) of expertise?
_____

How many years of work experience do you have?
_____

1.a. Briefly describe your exposure to your organization's strategy and its implementation in the last 5 years.

Probe: How were you involved in in leading or executing it within your area of responsibility?

2. We will now explore the elements of a transnational organization and their existence and prevalence in your organization:

2.a. How much does your organization fit this statement? **Innovative activities, practices and ideas are actively embraced, and knowledge is shared between both the headquarters and overseas locations.**

2.b. How much does your organization fit this statement? **The configuration of assets, capabilities and core competencies are broadly dispersed, interdependent and specialized.**

Probe: Versus other models that would be more centralized, or nationally self-sufficient, or unevenly distributed between centralized and decentralized.

2.c. How much does your organization fit this statement? **Overseas operations have an active role in the development and execution of the organization's strategy.**

Probe: As opposed to a model where overseas operations are focused on executing processes as stipulated by the headquarters.

2.d. How much does your organization fit this statement? **There is heavy investment in R&D.**

Probe: Is the flow or R&D constant? Is it driven by the headquarter, the overseas locations, or both?

2.e. The configuration of assets, capabilities and core competencies are broadly dispersed, interdependent and specialized.

Probe: Versus other models that would be more centralized, or nationally self-sufficient, or unevenly distributed between centralized and decentralized.

2.f. How much does your organization fit this statement? **There is an active interaction between overseas locations and their local context.**

Probes: Are international locations close enough to their local context that they can understand and leverage market requirements and opportunities? Are they flexible enough to act timely and effectively?

2.g. How much does your organization fit this statement? **Knowledge is developed jointly by the headquarters and the overseas locations, and shared worldwide.**

Probe: In other models knowledge would be developed and retained in each unit, or at the center; or where knowledge would be developed at the center and transferred to overseas units.

3. The transnational approach states that, in order to compete effectively, an organization has to simultaneously develop global competitiveness, multinational flexibility and worldwide learning capabilities.

3.a. Based on this statement and our discussion thus far, do you believe that your organization can today be characterized as a transnational?

Probe: What do you believe has changed since the time of Bartlett & Ghoshal's original assessment in their 1989 research?

4. Do you have any closing comments?

Many thanks again for you time and valuable insight; as discussed, we will remain in contact should there be any clarifications or follow up questions. Also, we will keep you updated on the progress and findings of this research.

Appendix B

Informed Consent Form: Introductory E-mail to Potential Interview Participants

INFORMED CONSENT FORM
INTRODUCTORY E-MAIL TO POTENTIAL INTERVIEW PARTICIPANTS

Dear participant,

I am a student at the H. Wayne Huizenga School of Business & Entrepreneurship at Nova Southeastern University working on a Doctorate of International Business Administration. I am conducting a research study entitled: Transnational companies and radical transformation processes: A study of performance in comparison to other multinational companies. The purpose of this research study is to determine whether organizations that were defined as having successfully adopted the transnational model, as per Bartlett and Ghoshal (1989), perform significantly better than other multinational companies when going through radical transformation processes.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, you can do so without penalty or loss of benefit to yourself. The results of the research study may be published but your name will not be used and your results will be maintained in confidence.

In the research, there are no foreseeable risks to you. This study aims to showcase what some successful multinationals have done well that may be useful to other organizations. Therefore it is expected that the qualitative element of this study be a positive experience for both the researcher and the subjects. Furthermore, the findings are expected to constitute practical and applicable learning for a broad base of multinationals, in a time where 'change is the only constant'.

Attached you will find additional information as well as a brief Q&A; if you have any questions concerning the research study, please feel free to contact either one of us.

Sincerely,

Alejandro Palacios, MIBA, Candidate DIBA
H. Wayne Huizenga SBE, Nova Southeastern University
+1 954-326-6513

Dr. Barry Barnes, Ph.D., Business and Dissertation Chair
H. Wayne Huizenga SBE, Nova Southeastern University
+1 954-262-5113

Appendix C

Informed Consent Form for Participation in Research Study

NOVA SOUTHEASTERN UNIVERSITY

Consent Form for Participation in the Research Study Entitled:
TRANSNATIONAL COMPANIES' AND RADICAL TRANSFORMATION PROCESSES: A STUDY OF PERFORMANCE IN COMPARISON TO OTHER MULTINATIONAL COMPANIES

Funding Source: None.

IRB protocol #: 01301327Exp.

Principal investigator: Co-investigator:
Alejandro Palacios, MIBA   **Dr. Barry Barnes**
Candidate DIBA,   Ph.D., Business and Dissertation Chair
H. Wayne Huizenga SBE   H. Wayne Huizenga School of Business
Nova Southeastern University   Entrepreneurship, Nova Southeastern
2570 Jardin Court,   University, 3301 College Avenue
Weston, FL 33327   Fort Lauderdale, FL 33314
+1 954-326-6513   +1 954-262-5113

For questions/concerns about your research rights, contact:
Human Research Oversight Board (Institutional Review Board or IRB)
Nova Southeastern University
(954) 262-5369/Toll Free: 866-499-0790
IRB@nsu.nova.edu

What is the study about?
This study aims to answer the question:
Do organizations that were defined as having successfully adopted the transnational model, as per Bartlett and Ghoshal (1989), perform significantly better than other multinational companies (MNC) when going through radical transformation processes?
This interview process is part of an academic research study conducted as a graduation requirement to obtain the degree of Doctor in International Business Administration at H. Wayne Huizenga SBE at Nova Southeastern University. The purpose of this study is purely academic, and no part of this content will be used for any other purposes than to complete a doctoral dissertation.

Why are you asking me?
Because **you are or have been an executive at one of the organizations that were identified by Bartlett and Ghoshal (1989) as having successfully implemented the Transnational model**. And you potentially have sufficient exposure to your

organization's strategy and its implementation to provide pertinent insight to the research question.

Organizations included in the scope of this research, include: Panasonic Corporation, Philips, Unilever, Procter & Gamble, LM Ericsson Telephone Company and NEC Corporation.

There will be a total of five in-depth interviews performed individually, in a semi-structured format, allowing for a relaxed conversation where you would have the liberty to share your insight and in a non-anonymous format. **The interviews will be non-anonymous, but no sensitive or confidential information is expected to be shared.** The only disqualifying criteria to take part in this research are: Your unwillingness to participate upon reviewing consent letter, or unavailability within the research timeframe.

What will I be doing if I agree to be in the study?

We will conduct a semi-structured interview, which is a basically **a conversation that will seek to gain your insight regarding the following seven elements as it pertains to your organization**:

- Embracement of innovative activities,
- International dispersion,
- The role of overseas operations,
- Heavy investment in R&D,
- The configuration of assets and capabilities,
- The interaction between subsidiaries with their local context, and
- The development and diffusion of knowledge

You will find an interview protocol at the end of this document, which will explain more in detail what is meant by each one of these elements.

The complete process will take a maximum of four hours of your time including all the following steps:

- Initial contact via e-mail, sending consent form (this document)
- Acceptance or consent form
- Scheduling of interview, preferably in person at a location of mutual convenience; or alternatively via phone
- Semi-structured in depth interviews, using the interview protocol and voice-recorded
- Possible follow up or clarification questions via e-mail or phone

Interviews data will be analyzed using a structured process and with the support of the qualitative data analysis tool NVIVO 9. Parts or the totality of the information from this interview will be incorporated into the research paper; it will all depend of its pertinence on the context of the research topic.

Is there any audio or video recording?

This research project will include audio recording of the in-depth semi-structured interview, using a common digital recorder. This audio recording will be available to be heard by the researcher, the IRB, any granting agencies, and the dissertation chair. The recording will be transcribed by the principal investigator. **The recording will be kept securely in a password protected file in the investigator's home computer.** The

recording **will be kept for 36 months and deleted after that time**. Because your voice will be potentially identifiable by anyone who hears the recording, your confidentiality for things you say on the recording cannot be guaranteed although the researcher will try to limit access to the tape as described in this paragraph.

There will also be notes taken during the interview; this will be done on paper. These notes will also be incorporated into the research, kept in a secure location along with all other research materials, and destroyed after a period of 36 months.

Also note that **the results of this research may be published but your name will not be used and your results will be maintained in confidence.**

What are the dangers to me?

Although **risks in this study are minimal**, below the description of a potential concern area you may have as well as mitigation actions that will be taken:

- Possibility of data/information breach from interview recordings and notes.

Mitigation: The topics that will be discussed have been clearly stated, no confidential information will be requested, and you are at liberty to not answer questions or provide information you do not wish to provide. Furthermore the transcript and content to be included in this study will be shared with the subject prior to including in the dissertation. If you have any questions about the research, your research rights, or have a research-related injury, please contact Alejandro Palacios or Dr. Barry Barnes. You may also contact the IRB at the numbers indicated above with questions as to your research rights.

Are there any benefits for taking part in this research study?

This study aims to showcase what some successful multinationals have done well that may be useful to other organizations. Therefore it is expected that the qualitative element of this study be **a positive experience for both the researcher and the subjects**; furthermore, the findings are expected to constitute practical and applicable learning for a broad base of multinationals, in a time where 'change is the only constant'.

Will I get paid for being in the study? Will it cost me anything?

There are no costs to you or payments made for participating in this study.

How will you keep my information private?

As previously stated,

The interview to be conducted is non-anonymous; nevertheless all information obtained in this study is strictly confidential unless disclosure is required by law.

This research project will include audio recording of the in-depth semi-structured interview, using a common digital recorder. This audio recording will be available to be heard by the researcher, the IRB, any granting agencies, and the dissertation chair. The recording will be transcribed by the principal investigator. The recording will be kept securely in a password protected file in the investigator's home computer. The recording will be kept for 36 months and deleted after that time. Because your voice will be potentially identifiable by anyone who hears the recording, your confidentiality for things you say on the recording cannot be guaranteed although the researcher will try to limit access to the tape as described in this paragraph.

There will also be notes taken during the interview; this will be done on paper. These

notes will also be incorporated into the research, kept in a secure location along with all other research materials, and destroyed after a period of 36 months.

What if I do not want to participate or I want to leave the study?
You have the right to leave this study at any time or refuse to participate. If you do decide to leave or you decide not to participate, you will not experience any penalties of any kind. If you choose to withdraw, any information collected from you **before** the date you leave the study will be kept in the research records for 36 months from the conclusion of the study but you may request that it not be used as part of the research study.
Other Considerations:
If significant new information relating to the study becomes available, which may relate to your willingness to continue to participate, this information will be provided to you by the investigators.

Voluntary Consent by Participant:
By signing below, you indicate that
- this study has been explained to you
- you have read this document or it has been read to you
- your questions about this research study have been answered
- you have been told that you may ask the researchers any study related questions in the future or contact them in the event of a research-related injury
- you have been told that you may ask Institutional Review Board (IRB) personnel questions about your study rights
- you are entitled to a copy of this form after you have read and signed it
- you voluntarily agree to participate in the study entitled "TRANSNATIONAL COMPANIES' AND RADICAL TRANSFORMATION PROCESSES: A STUDY OF PERFORMANCE IN COMPARISON TO OTHER MULTINATIONAL COMPANIES"

Participant's Signature: _____ Date: _____

Participant's Name: _____ Date: _____

Signature of Person Obtaining Consent: _____

Date: _____

Appendix D

TNC Data: Company Website References for Quantitative Data Sources

Information from Electronic Sources, Websites, Used to Gather Secondary Data on

Financial Performance of TNCs

Panasonic

- Company profile, http://panasonic.net/corporate/

- Financial indicators, including Annual report (5 years), Adobe PDF file; Data book (10 years) sales and profits by segment, MS Excel workbook; PC Stock performance and corporate data, Adobe PDF file; at http://panasonic.net/ir/finance/

- Form 20-F 2011, containing consolidated balance sheets, statement of operations, statement of cash flows, htm file, http://www.sec.gov/Archives/edgar/data/63271/000119312512286456/d230958d20f.htm#tx230958_2

- Form 20-F 2008, 2009, 2010, 2011, containing consolidated balance sheets, statement of operations, statement of cash flows, htm files

- http://www.sec.gov/cgi-bin/browse-edgar?company=&match=&CIK=PC&filenum=&State=&Country=&SIC=&owner=exclude&Find=Find+Companies&action=getcompany

- Stock information, http://finance.yahoo.com/q/hp?s=ERIC-B.ST&a=00&b=1&c=2006&d=11&e=31&f=2011&g=m

Philips

- Company profile, http://www.philips.com/about/company/companyprofile.page

- Annual reports containing Financial indicators 2008, 2009, 2010, 2011, 2012, Adobe PDF files,

  http://www.philips.com/about/investor/financialresults/index.page

- Form 20-F, htm files, containing consolidated balance sheets, statement of operations, statement of cash flows, MS Excel workbook,

  http://www.sec.gov/Archives/edgar/data/313216/000119312512078390/00011931

  25-12-078390-index.htm

- Stock information,

  http://ir1.euroinvestor.com/asp/ir/philips/2010/stage/philips_historical.aspx?mark

  et=0 and http://ir1.euroinvestor.com/asp/ir/philips/2010/qc_f.aspx?listing=0

Unilever

- Company profile,

  http://www.unilever.com/aboutus/introductiontounilever/unileverataglance/

- Financial indicators, including annual report and accounts 2007, 2008, 2009, 2010, 2011, 2012 Adobe PDF file; Form 20-F 2011, containing consolidated balance sheets, statement of operations, statement of cash flows, Adobe PDF file; Company introduction presentation, MS PowerPoint file; at

  http://www.unilever.com/investorrelations/ and

  http://www.unilever.com/investorrelations/annual_reports/archives/index.aspx

- Stock information, http://www.unilever.com/investorrelations/share_price/ NV share price 2008-2012, MS Excel file, from

  http://www.unilever.com/investorrelations/share_price/historicshareprice/nvnewy

orkshareprice/index.aspx, and

http://finance.yahoo.com/q/hp?s=UN+Historical+Prices

Procter & Gamble

- Company profile, http://www.pg.com/en_US/investors/p_g_at_a_glance.shtml

- Financial indicators including annual report 2008, 2009, 2010, 2011, 2012 at

  http://www.pg.com/en_US/investors/financial_reporting/index.shtml and

  http://www.pg.com/en_US/investors/financial_reporting/annual_reports.shtml

- Stock information, http://www.pginvestor.com/phoenix.zhtml?c=104574&p=irol-

  stockChartInteractive&control_javaupperindicator=&control_javauf=&control_ja

  vatype=&control_javascale=&control_javanumberperiods=&control_javamoving

  average=&control_javalowerindicator2=&control_javalowerindicator1=&control

  _javachartfunctions=&control_javaapplet and

  http://finance.yahoo.com/q/hp?s=PG+Historical+Prices

LM Ericsson Telephone Company

- Company profile, http://www.ericsson.com/thecompany

- Financial indicators including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://www.ericsson.com/thecompany/investors/financial-reports

- Stock information, http://www.ericsson.com/thecompany/investors/shareholder-

  information/share-graphs and http://finance.yahoo.com/q/hp?s=ERIC-

  B.ST&a=00&b=1&c=2006&d=11&e=31&f=2011&g=m

NEC Corporation

- Company profile at http://www.nec.com/en/global/about/corporate_profile.html

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://www.nec.com/en/global/ir/library/annual/index.html

- Stock information at http://www.nec.com/en/global/ir/stock/chart.html and

  http://finance.yahoo.com/q/hp?s=NIPNF+Historical+Prices

Exchange rate information

- Exchange Rate information used to convert from foreign currencies to US$,

  reference 12/31/2011,

  http://www.xe.com/currencytables/?from=USD&date=2011-12-31

Appendix E

Other MNC Data: Company Website References for Quantitative Data Sources

Information from Electronic Sources, Websites, Used to Gather Secondary Data on

Financial Performance of Other MNCs

LG

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://www.lg.com/global/investor-relations/reports/annual-reports

- Stock information at

  http://eng.krx.co.kr/por_eng/m2/m2_1/m2_1_3/JHPENG02001_03.jsp

Toshiba

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://www.toshiba.co.jp/about/ir/en/finance/pl.htm

- Stock information at

  http://finance.yahoo.com/q/hp?s=TOSBF&a=11&b=28&c=2006&d=11&e=30&f

  =2011&g=m

IBM

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://www.ibm.com/annualreport/

- Stock information at

  http://finance.yahoo.com/q/hp?s=IBM&a=11&b=28&c=2006&d=11&e=31&f=2

  011&g=m

HP

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://h30261.www3.hp.com/phoenix.zhtml?c=71087&p=irol-reportsannual

- Stock information at

  http://finance.yahoo.com/q/hp?s=HPQ&a=11&b=29&c=2006&d=11&e=31&f=2

  011&g=m

Nokia

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://www.nokia.com/global/about-nokia/investors/financials/reports/results---

  reports/

- Stock information at

  http://finance.yahoo.com/q/hp?s=NOK&a=11&b=28&c=2006&d=11&e=31&f=2

  011&g=m

Microsoft

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://www.microsoft.com/investor/AnnualReports/default.aspx

- Stock information at http://finance.yahoo.com/q/hp?s=MSFT+Historical+Prices

Apple

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://investor.apple.com/sec.cfm#filings

- Stock information at

  http://finance.yahoo.com/q/hp?s=AAPL&a=11&b=28&c=2006&d=11&e=31&f=

  2011&g=m

Intel

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://www.intc.com/sec.cfm?DocType=Annual&Year=&FormatFilter=

- Stock information at

  http://finance.yahoo.com/q/hp?s=INTC&a=11&b=29&c=2006&d=11&e=31&f=2

  011&g=m

Johnson & Johnson

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://www.investor.jnj.com/annual-reports.cfm and Historical Financial Review

  http://files.shareholder.com/downloads/JNJ/2440251823x0x567748/836a8a02-

  8f3c-4789-9491-f454c5963774/2011_Historical_Financial_Review.pdf

- Stock information at http://finance.yahoo.com/q/hp?s=JNJ+Historical+Prices

Kimberly Clark

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://www.kimberly-

  clark.com/investors/financial_information/annualreports.aspx

- Stock information at

  http://finance.yahoo.com/q/hp?s=KMB&a=11&b=28&c=2006&d=11&e=31&f=2

  011&g=m

Colgate

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://investor.colgate.com/annual.cfm

- Stock information at

  http://finance.yahoo.com/q/hp?s=CL&a=11&b=29&c=2006&d=11&e=31&f=201

  1&g=m

Motorola Solutions Inc.

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at
  http://investors.motorolasolutions.com/annuals.cfm

- Stock information at
  http://finance.yahoo.com/q/hp?s=MSI&a=11&b=29&c=2006&d=11&e=31&f=20
  11&g=m

RIM

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at
  http://ca.blackberry.com/company/investors/documents.html

- Stock information at
  http://finance.yahoo.com/q/hp?s=BBRY&a=11&b=29&c=2006&d=11&e=31&f=
  2011&g=m

Vonage

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at
  http://ir.vonage.com/sec.cfm?DocType=Annual&Year

- Stock information at
  http://finance.yahoo.com/q/hp?s=VG&a=11&b=29&c=2006&d=11&e=31&f=20
  11&g=m

Sierra Wireless

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at
  http://www.sierrawireless.com/en/AboutUs/investorinformation/annualreportsfilin
  gs.aspx

- Stock information at

  http://finance.yahoo.com/q/hp?s=SWIR&a=11&b=29&c=2006&d=11&e=31&f=
  2011&g=m

Qualcomm

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://investor.qualcomm.com/annuals.cfm

- Stock information at

  http://finance.yahoo.com/q/hp?s=QCOM&a=11&b=29&c=2006&d=11&e=31&f
  =2011&g=m

Arris

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://phx.corporate-ir.net/phoenix.zhtml?c=87823&p=irol-sec

- Stock information at

  http://finance.yahoo.com/q/hp?s=ARRS&a=11&b=29&c=2006&d=11&e=31&f=
  2011&g=m

Dolby

- Financial indicators, including annual reports 2008, 2009, 2010, 2011, 2012 at

  http://investor.dolby.com/annuals.cfm

- Stock information at

  http://finance.yahoo.com/q/hp?s=DLB&a=11&b=29&c=2006&d=11&e=31&f=2
  011&g=m

Appendix F

TNC Company Fact Sheets

TNC FACT SHEET PROCTER & GAMBLE CO.

TNC profile	Procter & Gamble Co.
Country of origin	**United States**
Sector	CONSUMER GOODS
Trading symbol	PG
Stock market	NYSE
Number of employees	126,000
HQ location	Cincinnati, OH

Company description: Founded in 1837, Procter & Gamble Company concentrates in the production and sale of a wide variety of consumer packaged goods. The company primarily focuses in the production of consumer products, from oral care products to batteries or pet care products.

Significant events between 2006 & 2011:
- In 2010, Procter & Gamble announced the incorporation of a long term plan, focusing in a green vision. The company announced a set of new goals and approaches that focused on minimizing the pollution that the company creates
- In 2009, the company announced they were replacing their historic CEO, A. G. Lafley, with their current COO, Robert McDonald. McDonald has been in the company for more than 29 years

Financial Indicators	2006	2011
Share Price performance (annual average)	7.90%	3.48%
Annual Revenue MM	$68,222	$81,104
Gross Margin (annual)	51.40%	50.90%
Return on Sales	0.13	0.15
EBITD MM (annual)	$12,413	$14,997
EBITS to REV Ratio	0.18	0.18

Sources:
http://finance.yahoo.com/q/pr?s=PG+Profile
http://www.greenbiz.com/news/2010/09/27/procter-gamble-packages-new-green-vision
http://online.wsj.com/article/SB124449397535495339.html

TNC FACT SHEET UNILEVER N.V.

TNC profile	Unilever NV
Country of origin	**Netherlands**
Sector	CONSUMER GOODS
Trading symbol	UN
Stock market	Amsterdam Euronext (AEX)
Number of employees	173,000
HQ location	Rotterdam, Netherlands

Company description: Unilever N.V. operates in the consumer goods sector. The company concentrates their business in personal care, foods, refreshments and home care. Since their foundation in 1927, the company has been expanding to achieve a broad global presence.

Significant events between 2006 & 2011:
- In 2010, Unilever offered $3.7b to acquire Alberto Culver, which makes beauty products. The deal was formally approved in 2011, but Unilever was forced to sell several brands to comply with anti-trust laws
- As part of a plan to focus on their niche markets, Unilever sold their US detergent business for $1.45 billion to Vestar Capital Partners

Financial Indicators	2006	2011
Share Price performance (annual average)	-41.21%	11.21%
Annual Revenue MM	$51,372	$60,217
Gross Margin (annual)	38.05%	30.78%
Return on Sales	0.13	0.10
EBITD MM (annual)	$6,260	$8,093
EBITS to REV Ratio	0.12	0.13

Sources:
http://finance.yahoo.com/q?s=UN
http://www.chicagobusiness.com/article/20100927/NEWS07/100929908/unilever-to-buy-alberto-culver-for-3-7b
http://dealbook.nytimes.com/2011/08/24/unilever-sells-several-alberto-culver-brands/?_r=0http://dealbook.nytimes.com/2011/08/24/unilever-sells-several-alberto-culver-brands/?_r=0

TNC FACT SHEET PANASONIC CORP.

TNC profile	Panasonic Corporation
Country of origin	**Japan**
Sector	TECHNOLOGY/CONSUMER ELECTRONICS
Trading symbol	6752
Stock market	TOKYO EXCHANGE / NYSE
Number of employees	293,742
HQ location	Kadoma-shi, Japan

Company description: Panasonic Corporation has been producing and selling electronic equipment since 1918. This Japanese multinational develops TV's, cameras, PC's and many other electronic products for businesses, governments, and individual costumers.

Significant events between 2006 & 2011:
-In 2011, Panasonic announced a strategic alliance with UNESCO as part of a plan to become the number one green innovation company in their industry by 2018
- In 2011, Panasonic announced they were cutting 17,000 jobs as a plan to drastically reduce their costs
-In 2010, Panasonic acquired a percentage of Tesla after investing $30m in the company. This was also part of the long term plan to become a Environmentally Aware Company

Financial Indicators	2006	2011
Share Price performance (annual average)	29.01%	-18.66%
Annual Revenue MM	$115,339	$112,723
Gross Margin (annual)	30.80%	26.50%
Return on Sales	0.02	0.01

Sources:
http://finance.yahoo.com/q?s=PCRFY
http://news.panasonic.net/archives/2011/0603_5505.html
http://www.bbc.co.uk/news/13218920,http://www.greenbiz.com/news/2010/11/08/panasonic-expands-green-goals-30m-investment-tesla-evs

TNC FACT SHEET KONINKLIJKE PHILIPS

TNC profile	Koninklijke Philips
Country of origin	**Netherlands**
Sector	TECHNOLOGY/CONSUMER ELECTRONICS
Trading symbol	PHG
Stock market	Amsterdam Euronext (AEX) / NYSE
Number of employees	115,281
HQ location	Amsterdam

Company description:

Koninklijke Philips, commonly known as Philips Electronics, was founded in 1891. The company focuses on the healthcare, lighting, and consumer lifestyle industries worldwide. One of their primary niches is hospital equipment, but Philips also offers a variety of products to large companies, governments, and individual consumers.

Significant events between 2006 & 2011:

-In 2011, Philips was forced to let go 4,500 employees as their profits were falling. In addition, their share price fell more than 40% year over year

-In 2009, Philips reduced 6,000 jobs after reporting their first losses since 2003. This decision came after the company reported a $1.9 billion loss in 2008

- In 2007, Philips bought Genlyte, the largest light bulbs producer worldwide, for $2.7 billion. After the acquisition, Philips announced they had become the largest lighting company in North America ahead of GE

Financial Indicators	2006	2011
Share Price performance (annual average)	26.85%	-16.18%
Annual Revenue MM	$34,577	$29,260
Gross Margin (annual)		38.68%
Return on Sales	0.19	-0.06
EBITD MM (annual)	$1,980	$(660)
EBITS to REV Ratio	0.06	-0.02

Sources:

http://finance.yahoo.com/q/pr?s=PHGFF+Profile
http://www.bbc.co.uk/news/business-15332243;http://abcnews.go.com/Business/story?id=3914860&page=1
http://news.cnet.com/8301-1001_3-10149852-92.html

TNC FACT SHEET NEC CORP.

TNC profile	NEC Corporation
Country of origin	**Japan**
Sector	TECHNOLOGY
Trading symbol	67010
Stock market	TOKYO EXCHANGE
Number of employees	102,375
HQ location	Tokyo

Company description: NEC Corporation engages in Information technology products and services worldwide. The company works with governments, companies, and the general public. NEC was founded in Japan in 1899, becoming a predominant company around the world.

Significant events between 2006 & 2011:
-In 2011, NEC announced a new growth strategy in Latin America. NEC decided to have a broader impact worldwide and opened new Headquarters in Brazil
-In 2009, NEC experienced a net loss of $25.13 billion due to the harsh economic situations of the time
- In 2006, NEC and Panasonic announced a mutual agreement to create a joint venture company which focuses on Mobile Handsets

Financial Indicators	2006	2011
Share Price performance (annual average)		3.48%
Annual Revenue MM	$68,222	$81,104
Gross Margin (annual)	51.40%	50.90%
Return on Sales	0.13	0.15
EBITD MM (annual)	$12,413	$14,997
EBITS to REV Ratio	0.18	0.18

Sources:
http://finance.yahoo.com/q/pr?s=nipnf
http://panasonic.co.jp/corp/news/official.data/data.dir/en061024-2/en061024-2.html
http://www.nec.co.jp/press/en/1104/1301.html
http://www.thestandard.com.hk/breaking_news_detail.asp?id=12216

TNC FACT SHEET ERICSSON

TNC profile	Ericsson
Country of origin	**Sweden**
Sector	TECHNOLOGY / TELECOMMUNICATIONS
Trading symbol	ERIC
Stock market	Nordic Stock Exchange (OMX)
Number of employees	111,805
HQ location	Stockholm

Company description: Ericsson is a Swedish company that provides telecommunications services and equipment to a variety of network operators worldwide. Ericsson also works in the implementation of an LTE network. The company was established in 1876.

Significant events between 2006 & 2011:
-In 2011, Sony took full control of Sony Ericsson after they bought Ericsson's shares, for more than $1.5b
- In 2009, Ericsson acquired Optimi for an undisclosed amount. Optimi is a Spanish company that provides telecommunications services. This acquisition improved Ericsson's the network management capabilities

Financial Indicators	2006	2011
Share Price performance (annual average)	10.25%	15.54%
Annual Revenue MM	$26,042	$32,863
Gross Margin (annual)	41.68%	35.13%
EBITS to REV Ratio	0.20	0.08

Sources:
http://finance.yahoo.com/q/pr?s=ERIC+Profile
http://www.bbc.co.uk/news/business-15473954
http://www.optimi.com/news.php?id=60

Appendix G

Other MNC Company Fact Sheets

MNC FACT SHEET LG

MNC profile	LG
Country of origin	**South Korea**
Sector	ELECTRICAL AND ELECTRONICS
Trading symbol	066570
Stock market	KOREA EXCHANGE
Number of employees	34,069
HQ location	Seoul

Company description: LG Electronics is a multinational company focusing on the production and sale of innovative products, especially electronics, mobiles, and home electronic equipment.

Significant events between 2006 & 2011:
-In 2008, LG relocated its design department to the center of New York as part of an ambitious strategy to develop innovative and unique products
- After historic losses for the company, LG decided to replace its CEO in 2010; since then, Mr. Koo Bon-Joon manages the company

Financial Indicators	2006	2011
Share Price performance (annual average)	-23.04%	-13.35%
Annual Revenue MM	$20,008	$46,850
Gross Margin (annual)	23.49%	22.48%
Return on Sales	0.01	-0.01
EBITD MM (annual)	$226	$(345)
EBITS to REV Ratio	0.01	-0.01

Sources:
http://www.lg.com/global/investor-relations/company-info/overview
http://www.cepro.com/article/lg_relocates_us_design_center_to_new_york_city/K3&cid=0&ei=bs6ERtftJ4ay0AHNxvmoDA
http://www.cepro.com/article/lg_relocates_us_design_center_to_new_york_city/K3&cid=0&ei=bs6ERtftJ4ay0AHNxvmoDA
http://www.bbc.co.uk/news/business-11340262

MNC FACT SHEET TOSHIBA

MNC profile	Toshiba
Country of origin	Japan
Sector	TECHNOLOGY
Trading symbol	6502
Stock market	TOKYO EXCHANGE
Number of employees	206,087
HQ location	Tokyo

Company description: Founded in 1875, Toshiba has become one of the largest companies in the word focusing on the research, developing, manufacturing, and sale of electric products all around the world. They offer a variety of products, consulting services and environmental systems.

Significant events between 2006 & 2011:
- In 2011, Japan's government decided to invest in the largest local electronic companies (Sony, Toshiba and Hitachi LTD) so they could merge and compete against the worlds' market. This investment was part of an economic government plan which involved around 2.5 billion dollars in funds.
- In 2008, Toshiba decided to step out the DVD business as Blue Ray technology started to dominate the industry.

Financial Indicators	2006	2011
Share Price performance (annual average)	23.75%	-3.23%
Annual Revenue MM	$78,609	$82,973
Gross Margin (annual)	26.58%	23.46%
Return on Sales	0.01	0.02
EBITD MM (annual)	$2,071	$2,535
EBITS to REV Ratio	0.03	0.03

Sources:
http://finance.yahoo.com/q/pr?s=TOSBF+Profile
http://www.reuters.com/article/2011/08/31/us-japan-displays-idUSTRE77U0VL20110831
http://news.bbc.co.uk/2/hi/business/7252172.stm
http://www.toshiba.co.jp/about/ir/en/finance/pl.htm

MNC FACT SHEET IBM

MNC profile	IBM
Country of origin	**United States**
Sector	TECHNOLOGY
Trading symbol	IBM
Stock market	NYSE
Number of employees	434,246
HQ location	Armonk, NY

Company description: IBM is an American company that provides information technology products and services all around the globe. IBM was founded in 1910 and it has become a global IT icon. Divided among 5 main sectors, IBM covers all the technology industry thus being a predominant leader.

Significant events between 2006 & 2011:
- IBM created the world's fastest supercomputer in 2012, overpassing Fujitsu's previous accomplishment
- IBM sold its Retail Store Solution (RSS) business to Toshiba. This became a shocking news as IBM serviced over 70% of the food retail sector

Financial Indicators	2006	2011
Share Price performance (annual average)	16.49%	32.43%
Annual Revenue MM	$91,424	$106,916
Gross Margin (annual)	42.98%	46.89%
Return on Sales	0.10	0.15
EBITD MM (annual)	$13,317	$21,003
EBITS to REV Ratio	0.15	0.20

Sources:
http://finance.yahoo.com/q/pr?s=IBM+Profile
http://www-935.ibm.com/services/us/imc/html/career/whoweare.html
http://www.bbc.co.uk/news/technology-18457716

MNC FACT SHEET HEWLETT PACKARD

MNC profile	Hewlett Packard
Country of origin	**United States**
Sector	TECHNOLOGY
Trading symbol	HPQ
Stock market	NYSE
Number of employees	331,800
HQ location	Palo Alto, CA

Company description: Founded in 1939, Hewlett-Packard Company supplies a variety of technological products around the world. HP products are used by individual consumers, companies, governments, and practically every sector worldwide.

Significant events between 2006 & 2011:
- In 2011, HP bought UK's software firm Autonomy after closing a deal worth $11.7 billion dollars
-After announcing that HP was dropping the tablet, smartphone and personal computer business, HP stock fell more than 20% on 2011

Financial Indicators	2006	2011
Share Price performance (annual average)	66.57%	-25.05%
Annual Revenue MM	$1,658	$127,245
Gross Margin (annual)	24.53%	23.59%
Return on Sales	0.07	0.06
EBITD MM (annual)	$6,560	$8,982
EBITS to REV Ratio	0.07	0.07

Sources:
http://www.bbc.co.uk/news/business-14582489
http://finance.yahoo.com/q/pr?s=HPQ+Profile
http://www.today.com/id/44202820/ns/today-today_news/t/hp-stock-plunges-after-earnings-overhaul-news/#.UeGErfmkoXs

MNC FACT SHEET NOKIA CORPORATION

MNC profile	Nokia Corporation
Country of origin	**Finland**
Sector	TECHNOLOGY
Trading symbol	NOK
Stock market	NYSE
Number of employees	94,317
HQ location	Espoo, Finland

Company description: Founded in 1865, Nokia Corporation has been recognized as a mobile communications company leader globally. Nokia focuses on the production of mobile smartphones, development of location-based products and telecommunication infrastructure.

Significant events between 2006 & 2011:
- In 2012, Nokia sold its HQ in Espoo to another Finish company for around $222 million
- In 2011 Nokia and Microsoft announced a strategic alliance to compete against Apple and Android

Financial Indicators	2006	2011
Share Price performance (annual average)	23.68%	-34.78%
Annual Revenue MM	$53,289	$50,098
Gross Margin (annual)	32.54%	29.28%
Return on Sales	0.10	-0.04
EBITD MM (annual)	$7,416	$(1,552)
EBITS to REV Ratio	0.14	-0.03

Sources:
http://finance.yahoo.com/q/pr?s=NOK+Profile
http://www.engadget.com/2012/12/04/nokia-completes-sales-and-lease-back-of-its-espoo-finland-hq/
http://www.bbc.co.uk/news/business-12427680

MNC FACT SHEET MICROSOFT

MNC profile	Microsoft
Country of origin	**United States**
Sector	TECHNOLOGY
Trading symbol	MSFT
Stock market	NASDAQ
Number of employees	94,000
HQ location	Redmond, WA

Company description: Founded in 1975, Microsoft has become the world's leading company in technological products and services. Microsoft develops and distributes a variety of different products including software, hardware, application, and web services. Microsoft also established strategic relationships with Nokia, Best Buy and other companies to enlarge their global market presence

Significant events between 2006 & 2011:
- In 2011, Microsoft announced the acquisition of Skype for $8.5 billion dollars
- In 2012 Microsoft posted its first quarterly loss since joining the NYSE in 1986

Financial Indicators	2006	2011
Share Price performance (annual average)	15.66%	-1.70%
Annual Revenue MM	$44,282	$69,943
Gross Margin (annual)	82.72%	77.73%
Return on Sales	0.28	0.33
EBITD MM (annual)	$18,262	$28,071
EBITS to REV Ratio	0.41	0.40

Sources:
http://finance.yahoo.com/q/pr?s=MSFT+Profile
http://www.microsoft.com/en-us/news/Press/2012/Apr12/04-30CorpNews.aspx
http://www.microsoft.com/en-us/news/press/2011/may11/05-10CorpNewsPR.aspx
http://www.bbc.co.uk/news/business-18917906

MNC FACT SHEET APPLE INC.

MNC profile	Apple Inc.
Country of origin	**United States**
Sector	CONSUMER GOODS
Trading symbol	AAPL
Stock market	NASDAQ
Number of employees	72,800
HQ location	Cupertino, CA

Company description: Founded in 1977, Apple designs, develops, manufactures, and sells mobile communication devices, computer products, and music player devices, among other products. The company also focuses on digital music, storage options and on a variety of technological accessories. Apple's products are characterized by being innovative, efficient and popular across every age group.

Significant events between 2006 & 2011:
- In 2011, Apple's CEO & Co-founder Steve Jobs died creating a huge impact globally
-In 2011 Apple sued Samsung claiming multiple copyright infringements
-In 2007, Apple revolutionized the mobile word by introducing the IPhone

Financial Indicators	2006	2011
Share Price performance (annual average)	65.14%	41.77%
Annual Revenue MM	$19,315	$108,249
Gross Margin (annual)	28.98%	40.48%
Return on Sales	0.10	0.24
EBITD MM (annual)	$2,818	$34,205
EBITS to REV Ratio	0.15	0.32

Sources:
http://finance.yahoo.com/q/pr?s=AAPL+Profile
http://www.apple.com/pr/library/2007/01/09Apple-Reinvents-the-Phone-with-iPhone.html
http://www.huffingtonpost.com/news/steve-jobs-dead
http://mobile.reuters.com/article/idUSTRE73H6FV20110418?irpc=932

MNC FACT SHEET INTEL CORP.

MNC profile	Intel Corporation
Country of origin	**United States**
Sector	TECHNOLOGY
Trading symbol	INTC
Stock market	NASDAQ
Number of employees	105,000
HQ location	Santa Clara, CA

Company description: Intel corporation has been producing, designing, and selling digital technology equipment since 1968. Intel develops microprocessors and other vital computer parts such as network connectivity products and other wireless services making Intel a diversified high-tech company.

Significant events between 2006 & 2011:
- In 2010, Nokia and Intel decided to merge software platforms to improve the efficiency of future computing devices
- In 2011, Intel invested more than $5 billion in a new factory in Arizona
- The European Union fined Intel $1.45 billion for anti-competitive practices in 2009

Financial Indicators	2006	2011
Share Price performance (annual average)	-18.68%	9.28%
Annual Revenue MM	$35,382	$53,999
Gross Margin (annual)	51.49%	62.51%
Return on Sales	0.14	0.24
EBITD MM (annual)	$7,068	$17,781
EBITS to REV Ratio	0.20	0.33

Sources:
http://finance.yahoo.com/q/pr?s=INTC+Profile
http://www.intel.com/pressroom/archive/releases/2010/20100215corp.htm
http://newsroom.intel.com/community/intel_newsroom/blog/2011/02/18/intel-to-invest-more-than-5-billion-to-build-new-factory-in-arizona
http://news.bbc.co.uk/2/hi/8047546.stm

MNC FACT SHEET JOHNSON & JOHNSON

MNC profile	Johnson & Johnson
Country of origin	**United States**
Sector	HEALTHCARE
Trading symbol	JNJ
Stock market	NYSE
Number of employees	127,600
HQ location	New Brunswick, NJ

Company description: Founded in 1886, Johnson & Johnson is a multinational company that concentrates in the research and development, production, and sale of health care products all around the world. The company also distributes pharmaceutical products to hospitals and retailers.

Significant events between 2006 & 2011:
- In 2011, Johnson & Johnson announced a merger with Synthesis, becoming the world's leading company in the orthopedic industry
- In 2011 ,the SEC charged $70 million to J&J for a bribery scandals in Europe
- J&J was involved in another scandal in 2011 after two harmful chemicals were found in its products

Financial Indicators	2006	2011
Share Price performance (annual average)	2.45%	4.35%
Annual Revenue MM	$53,324	$65,030
Gross Margin (annual)	71.76%	68.69%
Return on Sales	0.21	0.15
EBITD MM (annual)	$14,587	$12,361
EBITS to REV Ratio	0.27	0.19

Sources:
http://finance.yahoo.com/q/pr?s=JNJ+Profile
http://www.sec.gov/news/press/2011/2011-87.htm
http://www.jnj.com/news/all/johnson-and-johnson-synthes-medical-device
http://www.huffingtonpost.com/2011/11/01/johnson-johnson-baby-sham_n_1069123.html

MNC FACT SHEET KIMBERLY CLARK

MNC profile	Kimberly Clark
Country of origin	**United States**
Sector	CONSUMER GOODS
Trading symbol	KMB
Stock market	NYSE
Number of employees	58,000
HQ location	Dallas, TX

Company description: Kimberly Clark Corporation and its subsidiaries produce and sell health care, tissues, and personal care products globally. Since its foundation in 1872, the company has been distributing its products directly to supermarkets; focusing on e-commerce in the last decade.

Significant events between 2006 & 2011:
- In 2009 KMB announced it was cutting 1,600 jobs due to the harsh economic situation
- In 2011 KMB pleaded guilty after a worker died due to unsafe conditions
- KMB's CMO significantly increased sales in 2011 after a huge marketing campaign

Financial Indicators	2006	2011
Share Price performance (annual average)	9.06%	9.32%
Annual Revenue MM	$16,747	$20,846
Gross Margin (annual)	30.35%	29.51%
Return on Sales	0.09	0.08
EBITD MM (annual)	$1,845	$2,183
EBITS to REV Ratio	0.11	0.10

Sources:
http://finance.yahoo.com/q/pr?s=KMB+Profile
http://abcnews.go.com/Business/story?id=7933312&page=1#.UdTxPfmkoXs
http://adage.com/article/news/kimberly-clark-lifting-sales-elevating-marketing/230832/

MNC FACT SHEET COLGATE-PALMOLIVE

MNC profile	Colgate-Palmolive Company
Country of origin	**United States**
Sector	CONSUMER GOODS
Trading symbol	CL
Stock market	NYSE
Number of employees	37,700
HQ location	New York City, NY

Company description: Colgate-Palmolive Company has been producing and distributing consumer products all around the world since 1806. The company offers a variety of health care and home care products. During the last decades Colgate has also expanded its product line by selling pet nutrition and therapeutic products.

Significant events between 2006 & 2011:
- In 2009, Colgate announced it was expecting higher profits than in previous years, despite lower performance from competitors
- In 2011, Colgate was forced to dispose thousands of mouth wash products after detecting possible harmful components in their composition

Financial Indicators	2006	2011
Share Price performance (annual average)	24.69%	8.37%
Annual Revenue MM	$12,238	$16,734
Gross Margin (annual)	54.76%	57.31%
Return on Sales	0.11	0.15
EBITD MM (annual)	$2,002	$3,789
EBITS to REV Ratio	0.16	0.23

Sources:
http://finance.yahoo.com/q/pr?s=CL+Profile
http://www.industryweek.com/global-economy/colgate-palmolive-co-refreshing-news
http://www.guardian.co.uk/uk/2011/nov/02/colgate-recalls-periogard-mouthwash-contamination

MNC FACT SHEET MOTOROLA SOLUTIONS

MNC profile	Motorola Solutions
Country of origin	**United States**
Sector	TECHNOLOGY
Trading symbol	MSI
Stock market	NYSE
Number of employees	22,000
HQ location	Schaumburg, IL

Company description: Motorola Solutions provides communication infrastructure, devices, and software. Motorola Solutions used to be known as Motorola Inc. since its foundation in 1928, but in 2011 the company changed its name to Motorola Solutions.

Significant events between 2006 & 2011:
- In 2011, Huawei and Motorola Solutions settled a dispute over trade secrets
- In the same year, Motorola announced the company was splitting into two companies: Motorola Mobility and Motorola Solutions

Financial Indicators	2006	2011
Share Price performance (annual average)	6.69%	921.25%
Annual Revenue MM	$42,847	$8,203
Gross Margin (annual)	29.70%	50.54%
Return on Sales	0.09	0.14
EBITD MM (annual)	$4,610	$738
EBITS to REV Ratio	0.11	0.09

Sources:
http://finance.yahoo.com/q/pr?s=MSI+Profile
http://www.bbc.co.uk/news/business-13075620
http://www.huffingtonpost.com/2011/01/03/motorola-spit-motorola-mobility_n_803847.html

MNC FACT SHEET REASEARCH IN MOTION (RIM)

MNC profile	Research in Motion RIM
Country of origin	**Canada**
Sector	TECHNOLOGY
Trading symbol	BBRY
Stock market	NASDAQ
Number of employees	12,700
HQ location	Waterloo, ON

Company description: RIM is a Canadian company founded in 1984. Commonly known by its commercial brand name 'Blackberry', RIM focuses on the design and production of wireless products globally. RIM revolutionized the smartphone industry by creating phones with instant e-mail access, messages, data etc.

Significant events between 2006 & 2011:
- After a worldwide service interruption, RIM's CEO apologized in a YouTube video which did not belittle the serious problems the inconveniences caused worldwide
-In 2011, RIM's stock price dropped more than 50% after lowering expectations for its profits

Financial Indicators	2006	2011
Share Price performance (annual average)	82.38%	-39.49%
Annual Revenue MM	$1,526	$16,416
Gross Margin (annual)	74.71%	53.76%
Return on Sales	0.25	0.21
EBITD MM (annual)	$482	$4,644
EBITS to REV Ratio	0.32	0.28

Sources:
http://abcnews.go.com/Technology/blackberry-outage-rim-ceo-apologizes-service-returning-normal/story?id=14727816#.UdT3tfmkoXsmobility_n_803847.html
http://www.phonearena.com/news/RIMs-co-CEO-team-fiddles-while-company-burns_id19664
http://finance.yahoo.com/q/pr?s=BBRY+Profile

MNC FACT SHEET VONAGE

MNC profile	Vonage
Country of origin	**United States**
Sector	TECHNOLOGY
Trading symbol	VG
Stock market	NYSE
Number of employees	966
HQ location	Holmdel, NJ

Company description: Founded in 2000, Vonage Corporation focusses on global communication services. Vonage offers long distance calls which also include applications for smartphones. After becoming public in 2006, Vonage has had consistent financial struggles

Significant events between 2006 & 2011:
- Vonage went public in 2006, and its IPO was considered a total fiasco after its stock price lost more than 30% of its value during the first week
- In 2007, Vonage posted losses of $69.5 million after losing a patent case against Sprint

Financial Indicators	2006	2011
Share Price performance (annual average)		105.04%
Annual Revenue MM	$607	$870
Gross Margin (annual)	-56.01%	13.22%
Return on Sales	-0.56	0.47
EBITD MM (annual)	$(339)	$86
EBITS to REV Ratio	-0.56	0.10

Sources:
http://finance.yahoo.com/q/pr?s=VG+Profile
http://news.cnet.com/2100-1036_3-6079765.html
http://www.washingtonpost.com/wp-dyn/content/article/2007/09/25/AR2007092501217.html

MNC FACT SIERRA WIRELESS INC.

MNC profile	Sierra Wireless Inc.
Country of origin	**Canada**
Sector	TECHNOLOGY
Trading symbol	SWIR
Stock market	NASDAQ
Number of employees	1,013
HQ location	Richmond, BC

Company description: Sierra Wireless Inc. focuses on cellular wireless services in North America, Europe and Asia. By providing machine and connected services, the company has been expanding since 1993.

Significant events between 2006 & 2011:
- In 2008, Sierra Wireless entered an agreement to merge with Wavecom and increase its market share
- In 2004, Sierra Wireless announced a 4G LTD wireless Gateway, surpassing the power of the Verizon gateway

Financial Indicators	2006	2011
Share Price performance (annual average)	53.24%	1.24%
Annual Revenue MM	$221	$333
Gross Margin (annual)	31.22%	30.63%
Return on Sales	0.05	-0.09
EBITD MM (annual)	$11	$(55)
EBITS to REV Ratio	0.05	-0.17

MNC FACT SHEET QUALCOMM INC.

MNC profile	Qualcomm Incorporated
Country of origin	**United States**
Sector	TECHNOLOGY
Trading symbol	QCOM
Stock market	NASDAQ
Number of employees	26,600
HQ location	San Diego, CA

Company description: Founded in 1985, QUALCOMM Incorporated focuses on the development and manufacturing of telecommunication products and services. The company provides wireless and satellite services which are used in numerous companies and government agencies, especially in China, South Korea, Taiwan, and the United States.

Significant events between 2006 & 2011:
- In 2011, Qualcomm and Atheros Communication merged after Qualcomm bought $3.1 billion in Atheros's shares. Atheros is considered a global leader in innovative technological products
- In 2009, Qualcomm paid $891 million to end a patent litigation with Broadcom

Financial Indicators	2006	2011
Share Price performance (annual average)	-2.97%	34.66%
Annual Revenue MM	$7,526	$14,957
Gross Margin (annual)	71.01%	67.39%
Return on Sales	0.33	0.28
EBITD MM (annual)	$3,156	$5,687
EBITS to REV Ratio	0.42	0.38

Sources:
http://www.qca.qualcomm.com/corporate/content.php?nav1=119&news=294
http://news.cnet.com/8301-13924_3-10227815-64.html
http://finance.yahoo.com/q/pr?s=QCOM+Profile

MNC FACT SHEET ARRIS ENTERPRISES INC.

MNC profile	Arris Enterprises Inc.
Country of origin	**United States**
Sector	TECHNOLOGY
Trading symbol	ARRS
Stock market	NASDAQ
Number of employees	2,175
HQ location	Suwanee, GA

Company description: Established in 1969, Arris Enterprises Inc. supplies and manufactures products and services in the communication industry, including cable systems connections. The company services residential users and business operators.

Significant events between 2006 & 2011:
- In 2011, Arris acquired Big Band networks in a $172 million arrangement. This acquisition resulted in a sharp increase in value in the days following the deal
-In 2011, Arris launched an innovative platform that enables unique advertisement tools

Financial Indicators	2006	2011
Share Price performance (annual average)	42.70%	12.35%
Annual Revenue MM	$892	$1,089
Gross Margin (annual)	28.30%	37.74%
Return on Sales	0.16	-0.02
EBITD MM (annual)	$107	$(29)
EBITS to REV Ratio	0.12	-0.03

Sources:
http://www.businessinsider.com/arris-group-got-a-deal-when-it-acquired-bigband-networks-2011-10
http://finance.yahoo.com/q/pr?s=ARRS+Profile
http://www.digitaltveurope.net/17638/arris-unveils-new-products/

MNC FACT SHEET DOLBY LABORATORIES INC.

MNC profile	Dolby Laboratories Inc.
Country of origin	**United States**
Sector	TECHNOLOGY
Trading symbol	DLB
Stock market	NYSE
Number of employees	1,480
HQ location	San Francisco, CA

Company description: Founded in 1965, Dolby Laboratories works in the entertainment industry by providing products, assistance and technology. Dolby assists end users as well as dealers in multiple parts of the entertainment production process.

Significant events between 2006 & 2011:
- In 2011, Dolby filled a law suit against Research in Motion alleging that RIM was using unauthorized Dolby audio parts in their products; Dolby won the dispute
- In 2007, Dolby became the leader in 3D movie technology after surpassing its competitors with faster distribution and high quality products

Financial Indicators	2006	2011
Share Price performance (annual average)	62.28%	-31.94%
Annual Revenue MM	$392	$956
Gross Margin (annual)	80.61%	88.28%
Return on Sales	0.23	0.32
EBITD MM (annual)	$147	$441
EBITS to REV Ratio	0.38	0.46

Sources:
http://finance.yahoo.com/q/pr?s=DLB+Profile
http://www.zdnet.com/blog/btl/dolby-slaps-rim-with-patent-infringement-lawsuit-updated/50753
http://news.cnet.com/Dolby-stakes-its-claim-in-3D-movie-tech/2100-1026_3-6212112.html

MNC FACT SHEET GENERAL ELECTRIC

MNC profile	General Electric
Country of origin	**USA**
Sector	INDUSTRIAL GOODS
Trading symbol	GE
Stock market	NYSE
Number of employees	305,000
HQ location	Fairfield, Connecticut

Company description: GE is a world leading multinational that provides general knowledge, capital and infrastructure to the global economy. GE builds appliances, lighting, power systems and many other products. Since 1878 GE has been helping families, offices, factories around the world earning a well-established brand image.

Significant events between 2006 & 2011
- In 2011, GE relocated its Healthcare HQ's to China as part of a massive billionaire strategy to compete in the local market
- In 2011, the SEC charged GE with securities fraud for being involved in the sale of reinvested municipal securities. GE agreed to arrange the dispute by paying $70 million in fees.

Financial Indicators	2006	2011
Share Price performance (annual average)	6.02%	12%
Annual Revenue	$151,568	$147,288
Gross Margin (annual)	15.36%	13.75%
Return on Sales	0.14	0.10
EBITD (annual)	$23,288	$20,257
EBITS to REV Ratio	0.15	0.14

Sources:
 http://www.ge.com/about-us/building; http://www.bloomberg.com/news/2011-07-25/ge-healthcare-moves-x-ray-base-to-china-no-job-cuts-planned.html;
http://www.genewscenter.com/;http://finance.yahoo.com/q/pr?s=GE+Profile

MNC FACT SHEET KAO CORPORATION

MNC profile	Kao Corporation
Country of origin	**Japan**
Sector	CONSUMER STAPLES
Trading symbol	4452
Stock market	TOKYO EXCHANGE
Number of employees	34,069
HQ location	Tokyo

Company description: Kao Corporation focuses its core activities in beauty care, human health care, and home care products. It was founded in 1887 and it became a Corporation in 1982. The company sells to the general public following straight forward beliefs considering client concentrations.

Significant events between 2006 & 2011:
- In 2009, Kao acquired the plants of a German manufacturer, increasing its distribution chain in the European market
-Kao published its first sustainability report in 2010, improving its image and attracting more investors. Additionally, it renamed their CSR department to Sustainability Department

Financial Indicators	2006	2011
Share Price performance (annual average)	14.17%	8.72%
Annual Revenue	$8,268	$14,273
Gross Margin (annual)	55.96%	57.96%
Return on Sales	0.07	0.04
EBITD (annual)	$995	$1,155
EBITS to REV Ratio	0.12	0.08

Sources: http://www.cosmeticsdesign-europe.com/Business-Financial/Kao-Corporation-strengthens-European-production-base; http://finance.yahoo.com/q/pr?s=KCRPY+Profile; http://www.kao.com/jp/en/corp_csr/topics/csr_20100921_002.html

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